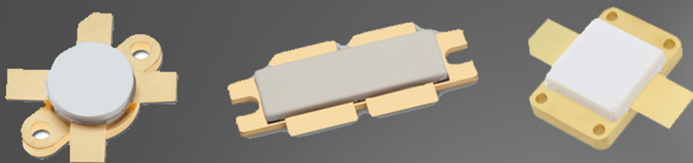




SYNTEZ
MICROELECTRONICS

PRODUCT CATALOGUE

- POWER RF TRANSISTORS
- RF TRANSISTOR DIES
- RF AMPLIFIER MODULES
- MOS CAPACITOR CHIPS



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Contents

About Syntez Microelectronics	7
RF Power Bipolar Transistors	8
RF Power Bipolar Transistors	8
VHF Transistors	8
To 30 – 200 MHz Band.....	8
UHF Transistors	8
To 100 – 500 MHz Band.....	8
Linear Transistors.....	9
To 225 MHz, Class AB.....	9
To 1000 MHz, Class AB.....	9
Ultra Linear Transistors	9
To 225 MHz, Class A.....	9
To 860 MHz, Class A.....	10
RF Bipolar Transistors Die	11
VHF & UHF Transistors Die	11
Linear Transistors Die.....	11
Ultra Linear Transistors Die.....	11
Avionics Pulsed Power Transistor Die.....	12
RF Power MOSFETs	13
VHF Transistors.....	13
To 225 MHz VHF AM/FM.....	13
UHF Transistors	14
To 500 MHz UHF AM/FM.....	14
RF MOSFET Die	15
VHF Transistor Die.....	15
UHF Transistors Die	15
RF Power LDMOS Transistors	16
RF Power LDMOS Transistors	16
To 860 MHz	16
RF LDMOS Die	17
RF Amplifier Modules	18
MOS Capacitor Chips.....	19
Power RF Transistor Packages	20

Data sheets

RF Power Bipolar Transistors	
RF Power Bipolar Transistors	
VHF Transistors	
To 30 – 200 MHz Band.....	
2N3632	21
2N5590	22
2N5642	23
BLY93H	24
2N5643	25
KT9128AC	26
SD1480	27
2N6080	28
2N5641	29
2N6081	30
2N6082	31
BLY89C	32
UHF Transistors	
To 100 – 500 MHz Band.....	
2N5635	33
2N3375	34
2N6202	35
2N5636	36
2N3733	37
2N6203	38
2N5016	39
2N5177	40
2N5637	41
MRF393	42
KT9147A	43
KT9188A	44
KT9175A	45
KT9175B	46

KT9175V.....	47
Linear Transistors.....	
To 225 MHz, Class AB.....	
2SC3812.....	48
KT9151AC.....	49
KT9174AC.....	50
To 1000 MHz, Class AB.....	
KT9156AC.....	51
KT9156BC.....	52
KT9155A.....	53
KT9155B.....	54
TPV5051.....	55
KT9155V.....	56
Ultra Linear Transistors.....	
To 225 MHz, Class A.....	
KT9116A.....	57
TPV394.....	58
KT9116B.....	59
KT9133A.....	60
To 860 MHz, Class A.....	
BLX96.....	61
KT9150A.....	62
TPV595.....	63
KT9194B.....	64
SD1490.....	65
RF Power MOSFETs.....	
VHF Transistors.....	
To 225 MHz VHF AM/FM.....	
BLF242.....	66
BLF244.....	67
BLF245.....	68
BLF248.....	69
MRF134.....	70
MRF136.....	71
MRF137.....	72

MRF173	73
MRF141	74
MRF141G	75
KP821A.....	76
KP821B.....	77
KP979A.....	78
KP979B.....	79
KP819AC	80
BLF278	81
MRF148A	82
MRF150	83
MRF151	84
MRF151G	85
MRF157	86
KP979VC	87
KP826AC	88
UHF Transistors	
To 500 MHz UHF AM/FM.....	
MRF166C.....	89
MRF166W.....	90
MRF175LU	91
MRF177	92
MRF175GU.....	93
KP978A.....	94
KP978BC	95
KP978VC	96
KP978GC	97
KP978DC	98
KP977AC	99
KP981A.....	100
KP981BC	101
KP981VC	102
RF Power LDMOS Transistors	
RF Power LDMOS Transistors	

To 860 MHz	
KP980A.....	103
RF Amplifier Modules	
UM117-3.....	104
UM118-2	106
UM126-1	108
UM131-1	110
UM132-2	112
UM109-1A	114
UM109-1B	116
UM109-1C	118
UM109-1D	120

About Syntez Microelectronics



The history of JSC Syntez Microelectronics begins in 1992 when Syntez Ltd. was founded. Its main specialization was supplying the domestic electronic components to Russian manufacturing companies. For more than 20-year history the company has considerably expanded the main areas of its specialization.

Nowadays JSC Syntez Microelectronics specializes in providing the turn-key solutions and services starting from the developing, manufacturing of the dies, assembling to the testing of IC, power discrete RF transistors and the most up-to-date SiC, GaN, TSV microelectronics technologies.

Manufacturing capabilities of the foreign (Freescale, XFAB and others) and Russian partners are being used for fabrication of dies with 65-350nm lithography.

The strong side of the company is developing, manufacturing and exporting of the power Si RF bipolar MOSFET, LDMOS transistors. These parts meeting the international specifications are exported to Europe, USA and Asia. According to the customer's technical requirements full assembly of the new and modernization of the current RF transistors can be provided including the development of the dies, packages, assembling and testing of the finished parts. Nowadays the company takes part in the developing of 0.35 μm RF LDMOS, MOSFET transistors on 200mm wafers in Russia.

JSC Syntez Microelectronics offers Russian semiconductor companies supplying the wide range of import materials and services for dies production (including wafer foundry), assembly (packages, lead frames, ceramics, instruments and others), measurements and testing (sockets, carriers, trays and others) for IC and semiconductor devices. The company has a profound experience of supplying the most up-to-date new and refurbished technological, assembling measuring and test equipment from different countries of the world.

For more than 20 years our company has been working in the spheres of production the automotive electronic components for the Russian cars and trucks including the ICs and power bipolar and MOSFET transistors for the electronic ignition units, voltage regulators, turn relays etc.

The specialists of JSC Syntez Microelectronics have professional skills of the modern IC assembling technologies as well as MOSFET, IGBT in different package types and able to use this knowledge for assembling of the parts according to our own developed designs and the parts of the partners on the assembly plants in Korea, Taiwan, Philippines, Malaysia, Singapore, China. The company is also working with the modern 3D assembly including TSV Interposer developing.

JSC Syntez Microelectronics is the modern company working in the leading spheres of semiconductor microelectronics and having customers and partners in more than 30 countries on different continents of the world.

RF Power Bipolar Transistors

VHF Transistors

To 30 – 200 MHz Band

Device	P _{OUT} Output Power Watts	Gps (min)/Freq. dB/MHz	η_D Efficiency %	JC C/W	Package (package drawing is given in the related datasheet)
V _{CC} = 28 Volts, Class C					
2N3632	13.5	5.8/175	70	7.6	TO-60
2N5590	10	5.2/175	50	5.8	.0380 4L STUD
2N5642	20	8.2/175	60	5.8	.0380 4L STUD
BLY93H	25	9/175	-	2.5	.0380 4L STUD
2N5643	40	7.6/175	60 typ.	2.9	.0380 4L STUD
KT9128AC	200	7.5/175	50	0.61	KT-45
SD1480	125	9.2/175	55	0.65	.500 6L
V _{CC} = 12.5 Volts, Class C					
2N6080	4	12/175	50	15	.0380 4L STUD
2N5641	7	8.4/175	60	11.7	.0380 4L STUD
2N6081	15	6.3/175	60	5.6	.0380 4L STUD
2N6082	25	6.2/175	50	2.8	.0380 4L STUD
BLY89C	25	6/175	60	2.4	.0380 4L STUD

UHF Transistors

To 100 – 500 MHz Band

Device	P _{OUT} Output Power Watts	Gps (min) /Freq. dB/MHz	η_D Efficiency %	JC C/W	Package (package drawing is given in the related datasheet)
V _{CC} = 28 Volts, Class C					
2N5635	2.5	8.5 typ/400	50	23.3	.0380 4L STUD
2N3375	3	4.8/400	40	15	TO-60
2N6202	3	8/400	50	17.5	.0380 4L STUD
2N5636	7.5	7.9 typ/400	50	11.7	.0380 4L STUD
2N3733	10	4.0/400	45	7.6	TO-60
2N6203	12	6.0/400	50	8.8	.0380 4L STUD
2N5016	15	4.8/400	50	7.5	TO-60
2N5177	17	3.0/500	45	5	TO-60
2N5637	20	6.1 typ/400	60	5.8	.0380 4L STUD
MRF393	100	7.5/500	50	0.65	744A-01
KT9147A	160	6/400	50	0.6	KT-82
V _{CC} = 12.5 Volts, Class C					
KT9188A	10	6/470	55	4	KT-83
V _{CC} = 7.5 Volts, Class C					
KT9175A	0.5	10/470	55	12	KT-83
KT9175B	2	8/470	55	6	KT-83
KT9175V	5	6/470	55	3	KT-83

Linear Transistors

To 225 MHz, Class AB

Device	P _{OUT} @ 1 dB Comp. Point Watts	Gps (min) /Freq. dB/MHz	η_D Efficiency min. %	JC C/W	Package (package drawing is given in the related datasheet)
V _{CC} = 28 Volts					
2SC3812	200	7/230	50	0.3	375-04
KT9151AC	200	7/225	55	0.5	KT-82
KT9174AC	300	12/100	55	0.5	KT-82

To 1000 MHz, Class AB

Device	P _{OUT} @ 1 dB Comp. Point Watts	Gps (min) /Freq. dB/MHz	η_D Efficiency min. %	JC C/W	Package (package drawing is given in the related datasheet)
V _{CC} = 28 Volts					
KT9156AC	15	7/1000	40	3.2	KT-44
KT9156BC	50	6/1000	50	1.7	KT-44
KT9155A	15	6.5/860	45	3.2	KT-44
KT9155B	50	6/860	45	1.4	KT-44
TPV5051	50	6.5/860	45	1.8	BMA-2
KT9155V	100	5/860	45	0.75	KT-82

Ultra Linear Transistors

To 225 MHz, Class A

Device	P _{ref} Watts	Gps (min) /Freq. dB/MHz	3 Tone IMD dB	JC C/W	Package (package drawing is given in the related datasheet)
V _{CC} = 28 Volts					
KT9116A	5	14/225	-58	2.5	KT-56
TPV394	5	14/225	-60	3.5	.280 4L STUD
KT9116B	15	10/225	-55	1.5	KT-56
KT9133A	30	7.5/225	-53	1.0	KT-56

To 860 MHz, Class A

Device	Pref Watts	Gps (min) /Freq. dB/MHz	3 Tone IMD dB	JC C/W	Package (package drawing is given in the related datasheet)
V_{CC} = 28 Volts					
BLX96	0.5	6/860	-60	11	.280 4L STUD
KT9150A	8	8/860	-58	2.5	KT-81
TPV595	14	8.5/860	-47	2.5	.250 BAL FLG
KT9194B	25	8/860	-45	1.7	KT-44
SD1490	25	8/860	-45	1.15	.450 DAL FLG

Vision Carrier: – 8 dB; Sound Carrier: – 7 dB; Sideband Carrier: – 16 dB

The specifications of all above transistors are available to download on our [website](http://www.syntezmicro.com).

RF Bipolar Transistors Die

VHF & UHF Transistors Die

Electrical Parameters. Dice mounted and tested in ceramic case

Device	P _{OUT} Output Power Watts	Gps (min)/Freq. dB/MHz	η_D Efficiency %	Die qty in packaged part	Packaged part name
V_{CC} = 28 Volts, Class C					
B220-28-175	100	10	60	1	KT9128AC
V_{CC} = 12.5 Volts, Class C					
B181-12-500-U	0,5	11/500	60	1	MRF581
B-181-12-500	1	10/175	45	1	2N5644
B2-814-12-500	2	10/470	55	1	MS1402
B1-177-12-500	5	8,5/470	55	1	MS1404

Linear Transistors Die

Electrical Parameters. Dice mounted and tested in ceramic case

Device	P _{OUT} @ 1 dB Comp. Point Watts	Gps (min) /Freq. dB/MHz	η_D Efficiency min. %	Die qty in packaged part	Packaged part name
V_{CC} = 28 Volts					
B6-127-28-860	50	6.5/860	45	1+1	TPV5051

Ultra Linear Transistors Die

Electrical Parameters. Dice mounted and tested in ceramic case

Device	Pref Watts	Gps (min) /Freq. dB/MHz	3 Tone IMD dB	Die qty in packaged part	Packaged part name
V_{CC} = 28 Volts					
B1068-28-230L	5	14/225	-60	1	TPV394
B4-127-25-860	14	8.5/860	-47	1+1	TPV595
B189-28-860	25	8/860	-45	1+1	SD1490

Vision Carrier: – 8 dB; Sound Carrier: – 7 dB; Sideband Carrier: – 16 dB

Avionics Pulsed Power Transistor Die

Electrical Parameters. Dice mounted and tested in ceramic case

Device	P _{OUT} Watts	Gps /Freq. dB/GHz	τ /Duty μ Sec/%	Die qty in packaged part
V_{CC} = 50 Volts				
B099-50-11-180	180	9/1,1	32/10	1
B183-50-11-250	250	9/1,1	10/1	1
B279-50-14-75	75	8.5/1,4	30/10	1
B282-50-14-150	150	8.5/1,4	30/10	1

The specifications of all above dies can be requested on our [website](#).

RF Power MOSFETs

VHF Transistors

To 225 MHz VHF AM/FM

Device	P _{OUT} Output Power Watts	Gps (Typ)/Freq. dB/MHz	η_D Efficiency Typical %	JC C/W	Package (package drawing is given in the related datasheet)
<i>VDD = 28 Volts, Class AB</i>					
BLF242	5	16/175	55	11	SOT123A
BLF244	15	17/175	65	4.6	SOT123A
BLF245	30	16/175	60	2.6	SOT123A
BLF248	300	11.5/225	55	0.35	SOT262A1
MRF134	5	14/150	55	11	211-07
MRF136	15	16/150	60	3.6	211-07
MRF137	30	16/150	60	1.75	211-07
MRF173	80	13	60	0.8	211-11
MRF141	150 PEP	16/30	60	0.6	211-11
MRF141G	300	14/175	55	0.35	375-04
KP821A	5	20/175	60	7	KT-83
KP821B	30	16/175	60	2.6	KT-83
KP979A	60	14/230	60	1.45	KT-56
KP979B	150	13/230	60	0.85	KT-56
KP819AC	300	10/230	60	0.4	KT-82
<i>VDD = 50 Volts, Class AB</i>					
BLF278	250	16/225	55	0.35	SOT262A1
MRF148A	30	15/175	50	1.52	211-07
MRF150	150	17/30	45	0.6	211-11
MRF151	150	13/175	45	0.6	211-11
MRF151G	300	16/175	55	0.35	375-04
MRF157	600	20/30	45	0.13	368-03
KP979VC	300	15/230	55	0.38	KT-82
KP826AC	600	18/30	60	0.18	KT-102-1

The specifications of all above transistors are available to download on our [website](#).

RF Power MOSFETs

UHF Transistors

To 500 MHz UHF AM/FM

Device	P _{OUT} Output Power Watts	Gps (Typ)/Freq. dB/MHz	η_D Efficiency Typical %	JC C/W	Package (package drawing is given in the related datasheet)
<i>VDD = 28 Volts, Class AB</i>					
MRF166C	20	16/400	55	2.5	319-07
MRF166W	40	13/400	50	1.0	412-01
MRF175LU	100	10/400	60	0.65	333-04
MRF177	100	12/400	60	0.65	744A-01
MRF175GU	150	12/400	55	0.44	375-04
KP978A	5	15/500	55	8	KT-83
KP978BC	10	15/500	55	3.2	KT-81
KP978VC	20	13/500	55	2	KT-81
KP978GC	40	13/500	55	1.2	KT-81
KP978DC	80	13/500	55	1.0	KT-44
KP977AC	150	10/500	55	0.55	KT-82
<i>VDD = 12.5 Volts, Class AB</i>					
KP981A	5	12/500	55	7	KT-83
KP981BC	10	12/500	55	2.4	KT-81
KP981VC	20	12/500	55	2	KT-81

The specifications of all above transistors are available to download on our [website](http://www.syntezmicro.com).

RF MOSFET DIE

VHF Transistor Die

Electrical Parameters. Die mounted and tested in ceramic case

Device	P _{OUT} Output Power Watts	Gps (Typ)/Freq. dB/MHz	η_D Efficiency %	Die qty in packaged part	Packaged part name
VDD = 28 Volts, Class AB					
214-28-175	5	13	50	1	BLF242
210-28-175-15	15	12/175	50	1	MRF136
3-210-28-175	30	13/175	50	1	BLF245
2-235-28-175	60	16/175	50	1	
2-278-28-175	80	11/150	55	1	MRF173
234-28-230	300	12/175	50	2+2	MRF141G
VDD = 50 Volts, Class AB					
234-50-230	300	14	50	2+2	MRF151G
830-50-30	600	15/30	40	2+2	MRF157

UHF Transistors Die

Electrical Parameters. Dice mounted and tested in ceramic case

Device	P _{OUT} Output Power Watts	Gps (Typ)/Freq. dB/MHz	η_D Efficiency %	Die qty in packaged part	Packaged part name
VDD = 28 Volts, Class AB					
214-28-500	5	13/400	50	1	KP9178A
2-214-28-500	10	10/500	50	1	KP9178B
2-214-28-500	20	10/500	50	1+1	KP9178V
2-210-28-500	40	13/500	50	1+1	KP9178G
3-210-28-500	80	11/500	50	1+1	KP9178D
2-235-28-400	150	10/400	50	2+2	MRF175GU

The specifications of all above dies can be requested on our [website](http://www.syntezmicro.com).

RF Power LDMOS TRANSISTORS

To 860 MHz

Device	P _{OUT} Output Power Watts	Gps (Typ)/Freq. dB/MHz	η_D Efficiency Typical %	JC C/W	Package (package drawing is given in the related datasheet)
<i>VDD = 28 Volts, Class AB</i>					
KP980A	7	14/860	50	10	KT55C-1

The specification of the above transistor are available to download on our [website](#).

RF LDMOS Die

Electrical Parameters. Die mounted and tested in ceramic case

Device	P _{OUT} Output Power	Gps (Typ)/Freq. dB/MHz	η_D Efficiency %	Die qty in packaged part	Packaged part name
<i>VDD = 28 Volts, Class AB</i>					
L264-28- 1000-7	7	14/860	50	1	KP980A

The specification of the above die can be requested on our [website](#).

RF Amplifier Modules

No	Type no	Package (package drawing is given in the related datasheet)	P _{out} , W	Δf, MHz	P _{in} , mW	DC supply, V	η _r , %	Remark
1	UM117-3	K-2B	16	300-308	20	12,5	40	
2	UM118-2	K-2B	16	146-174	20	12,5	40	
3	UM126-1	K-2C	16	2-2,5	10	12,5	40	1
4	UM131-1	K-2C	20	1,5-30	20	28	45	2
5	UM132-2	K-1	16	146-174	20	12,5	45	
6	UM109-1A	K-1	5	33-39	5	9,6	45	
7	UM109-1B	K-1	5	39-45	5	9,6	45	
8	UM109-1C	K-1	5	45-51	5	9,6	45	
9	UM109-1D	K-1	5	51-57,5	5	9,6	45	

Remark:

1. 2n, 3n harmonics below -55dB.
2. Linear, intermodulation Distortion (P_{out}=20W_(PEP) IMD_(d3), IMD_(d5)) below -30dBc, Two Tone, Reference Each Tone.

The specifications of all above devices are available to download on our [website](http://www.syntezmicro.com).

MOS Capacitor Chips

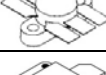
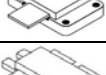
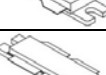
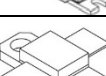
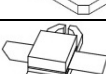
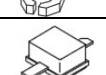
P/N	Capacitance range*, pF		Dimensions, μm					
	min	max	a	b	c	d	e	f
8-202-XXX	40	140	3000	1000	2700	320	180	200
8-203- XXX	100	350	5000	1000	4700	460	40	200
8-249- XXX	120	400	9000	800	8700	300	50	150
84-283- XXX	300	1000	8500	1200	8300	760	70	170

XXX – stands for particular capacitance value specified by the order

* – reproduction accuracy of the ordered capacitance value is $\pm 5\%$.

The specifications of all above devices can be requested on our [website](#).

Power RF Transistor Packages

Part number	Russian part number	Transistor type	Outline
TO-60	KT-4-2	Bipolar	
.280 4L STUD	KT-16	Bipolar	
.380 4L STUD	KT-17	Bipolar	
211-07	KT-30	Bipolar and MOSFET	
211-11		Bipolar and MOSFET	
.500 6L	KT-32	Bipolar	
368-03	KT-102-1	Bipolar and MOSFET	
RF70212	KT103A1	LDMOS	
RF707		LDMOS	
RF701		LDMOS	
360B-01		LDMOS	
458B-03		LDMOS	
465A-06		LDMOS	
RF705 (465-06)		LDMOS	
RF 708 (465E-04)		LDMOS	
SOT467B		LDMOS	
	KT57A-1	LDMOS	
SOT1227A		LDMOS	
SOT1227B		LDMOS	

The drawings of all above packages are available to download on our [website](http://www.syntezmicro.com).

2N3632

SILICON BIPOLAR NPN POWER TRANSISTOR 13.5 W, in the 130 – 400 MHz Frequency Range

The silicon bipolar n-p-n transistor is designed for Class A,B,C Amplifier, Oscillator and Driver Applications Covering the VHF-UHF Region.

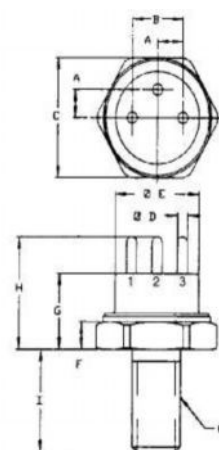
Features (At 175 MHz):

- Output Power: 13.5 W
- Power Gain: 5.8 dB Min
- Efficiency: 70% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	40	V_{DC}
Collector-Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	$I_{C(max)}$	3	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7.6	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	23	W

PACKAGE STYLE TO-60



	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.090/2,29	.110/2,79
B	.185/4,70	.215/5,46
C	.420/10,67	.440/11,18
D	.030/0,76	.046/1,17
E	.320/8,13	.360/9,14
F	.090/2,29	.135/3,43
G	.215/5,46	.320/8,13
H		.480/12,19
I	.420/10,67	.455/11,56

1 = EMITTER
2 = BASE
3 = COLLECTOR CASE = EMITTER

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	40	—	—	V_{DC}
Collector-Base Breakdown Voltage ($I_C = 0.5$ mA, $V_{BE} = 0$ V)	$V_{(BR)CBO}$	65			V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 0.25$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector– Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	0.25	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 250$ mA)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	20	pF
Power Gain ($V_{CE} = 28$ V, $P_{OUT} = 13.5$ W, $f = 175$ MHz)	G_p	5.8	—	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $P_{OUT} = 13.5$ W, $f = 175$ MHz)	η	70	—	—	%

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Specification is subject to change without notice

2N5590

SILICON BIPOLAR NPN POWER TRANSISTOR 10 W, in the 130 – 175 MHz Range

The silicon bipolar n-p-n transistor designed primarily for VHF mobile and marine transmitters .

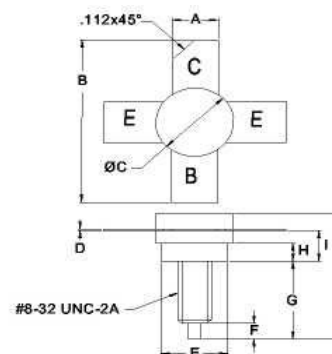
Features (At 175 MHz):

- Output Power: 10 W
- Power Gain: 5.2 dB Min
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	18	V_{DC}
Collector–Base Voltage	V_{CBO}	36	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	2	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.8	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	30	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	18	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	36	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 2.5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 15$ V, $I_E = 0$ A)	I_{CBO}	—	—	1	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 0.25$ A)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 15$ V, $I_C = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	70	pF
Power Gain ($V_{CB} = 13.6$ V, $P_{OUT} = 10$ W, $f = 175$ MHz)	G_p	5.2	—	—	dB
Drain Efficiency ($V_{CB} = 13.6$ V, $P_{OUT} = 10$ W, $f = 175$ MHz)	η_C	50	—	—	%

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2N5642

SILICON BIPOLAR NPN POWER TRANSISTOR 20 W, up to 175 MHz

The silicon bipolar n-p-n transistor is designed for 28 V Large Signal Class C Amplifier Applications up to 175 MHz.

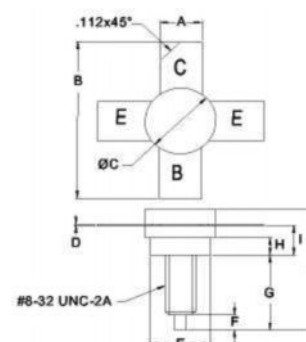
Features (At 175 MHz):

- Output Power: 20 W
- Power Gain: 8.2 dB Min
- Efficiency: 60% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	3	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.8	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	30	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $V_{BE} = 0$ V)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA)	$V_{(BR)CER}$	65	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	1	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 200$ mA)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	35	pF
Power Gain ($V_{CE} = 28$ V, $P_{OUT} = 20$ W, $f = 175$ MHz)	G_p	8.2	10	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $P_{OUT} = 20$ W, $f = 175$ MHz)	η_C	60	—	—	%

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BLY93H

SILICON BIPOLAR NPN POWER TRANSISTOR 25 W, up to 175 MHz

The silicon bipolar n-p-n transistor is designed for Class C, 28 V High Band Applications up to 175 MHz.

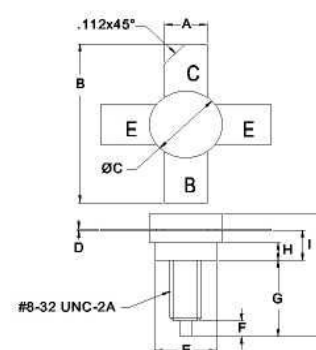
Features (At 175 MHz):

- Output Power: 25 W
- Power Gain: 9 dB Min.

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	3	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	70	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 50$ mA, $V_{BE} = 0$ V)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 10$ mA)	$V_{(BR)CER}$	65	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30$ V)	I_{CBO}	—	—	4	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 1.25$ A)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 28$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	45	—	pF
Power Gain ($V_{CE} = 28$ V, $I_E = 200$ mA, $f = 175$ MHz)	Gp	9	—	—	dB

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2N5643

SILICON BIPOLAR NPN POWER TRANSISTOR 40 W, in the 125 – 175 MHz Range

The silicon bipolar n-p-n transistor is designed for wideband large-signal amplifier stages in the 125 – 175 MHz range.

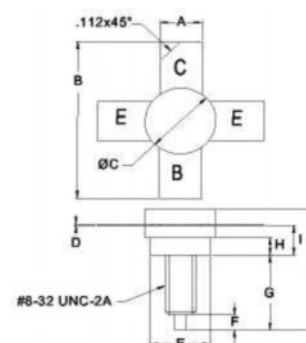
Features (At 175 MHz):

- Output Power: 40 W
- Power Gain: 7.6 dB Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	5	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.9	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	60	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $V_{BE} = 0$ V)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA)	$V_{(BR)CER}$	65	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30$ V)	I_{CBO}	—	—	1	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 500$ mA)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_E = 0$ mA, $f = 1$ MHz)	C_{OB}	—	—	65	pF
Power Gain ($V_{CE} = 28$ V, $P_{OUT} = 40$ W, $f = 175$ MHz)	G_p	7.6	—	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $I_C = 200$ mA, $f = 100$ MHz)	η_c	—	60	—	%

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SILICON BIPOLAR NPN POWER TRANSISTOR 200 W, in the 30 – 175 MHz Frequency Range

KT9128AC

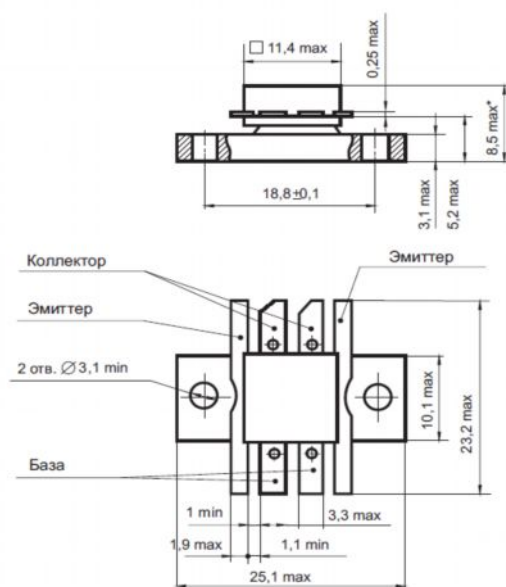
The silicon bipolar n-p-n transistor is designed for wideband large-signal output and driver amplifier stages in the 30 to 175 MHz frequency range.

Features (At 175 MHz):

- Output Power: 200 W
- Power Gain: 7.5 dB Min
- Efficiency: 60% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V_{DC}
Emitter-Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	18	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.61	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	287	W



CaseKT-45

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage ($I_C = 50$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	50	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector-Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	20	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 1$ A)	h_{FE}	20	—	100	
Output Capacitance ($V_{CB} = 28$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	430	pF
Power Gain ($V_{CC} = 28$ V, $f = 175$ MHz, $P_{OUT} = 200$ W)	G_p	7.5	12	—	dB
Drain Efficiency ($V_{CC} = 28$ V, $f = 175$ MHz, $P_{OUT} = 200$ W)	η	60	—	—	%

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SILICON BIPOLAR NPN RF POWER TRANSISTOR

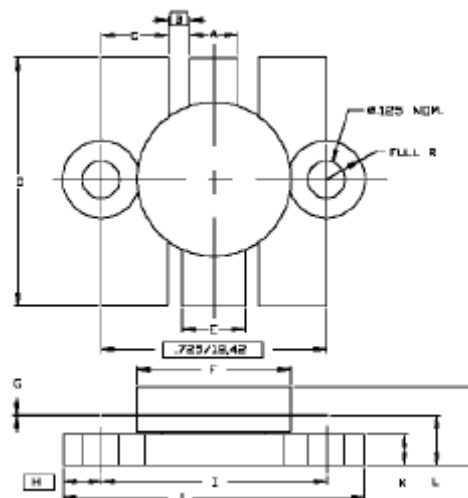
The silicon bipolar n-p-n transistor.
Common Emitter from 136 to 175 MHz Applications

Features:

- Gold metallization with barrier realizes very stable characteristics and excellent lifetime
- Diffused emitter ballast resistors
- Internal Input Matching
- Output power: 125 W
- Power gain: 9,2 dB

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-base Voltage	V_{CBO}	65	V_{DC}
Emitter-Base Voltage	V_{EBO}	4.0	V_{DC}
Collector Current	I_C	20	A
Operation Junction Temperature	T_j	+200	$^{\circ}C$
Power Dissipation	P_{DISS}	270	W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.65	$^{\circ}C/W$
Storage Temperature Range	T_{STG}	+150	$^{\circ}C$



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.150/3.43	.160/4.06	K	.095/2.41	.105/2.67
B		.045/1.14	L	.160/4.06	.180/4.58
C	.010/3.33	.020/3.39	M		.020/7.62
D	.035/2.121	.045/2.157			
E	.010/3.33	.020/3.33			
F	.050/12.45	.070/12.93			
G	.003/0.00	.007/2.19			
H		.125/3.18			
I	.703/18.29	.730/18.54			
J	.578/14.64	.580/14.89			

Parameters

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage ($I_C = 40 \text{ mA}_{DC}$, $V_{BE} = 0$)	$V_{(BR)CES}$	65	—	—	V_{DC}
Collector-Emitter Breakdown Voltage ($I_C = 40 \text{ mA}_{DC}$, $I_B = 0$)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector-Base Breakdown Voltage ($I_C = 40 \text{ mA}_{DC}$, $I_E = 0$)	$V_{(BR)CBO}$	65	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 10 \text{ mA}_{DC}$, $I_C = 0$)	$V_{(BR)EBO}$	4.0	—	—	V_{DC}
Collector-Emitter Cutoff Current ($V_{CB} = 30 \text{ V}_{DC}$, $I_E = 0$)	I_{CES}	—	—	15.0	mA_{DC}
Output Capacitance ($V_{CB} = 28 \text{ V}_{DC}$, $I_E = 0$, $f = 1.0 \text{ MHz}$)	C_{OB}	—	—	250	pF
Power Gain ($V_{CE} = 28 \text{ V}$, $P_{OUT} = 125 \text{ W}$, $f = 175 \text{ MHz}$)	G_p	9.2	—	—	dB
Collector Efficiency ($V_{CE} = 28 \text{ V}$, $P_{OUT} = 125 \text{ W}$, $f = 175 \text{ MHz}$)	η	55	—	—	%

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Specification is subject to change without notice

SILICON BIPOLAR NPN POWER TRANSISTOR 4 W, in the 130 – 230 MHz Range

2N6080

The silicon bipolar n-p-n transistor is designed primarily for VHF mobile and marine transmitters.

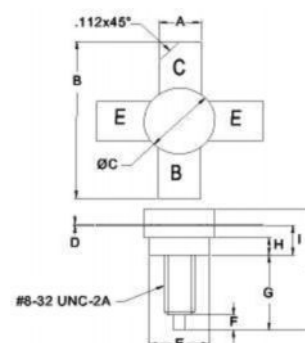
Features (At 175 MHz):

- Output Power: 4 W
- Power Gain: 12 dB Min
- Efficiency: 50% Min
- Common Emitter

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	18	V_{DC}
Collector–Base Voltage	V_{CBO}	36	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	$I_{C(max)}$	1	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	15	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	12	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 100$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	18	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 20$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	36	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 15$ V, $I_E = 0$ A)	I_{CBO}	—	—	0.25	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 0.25$ A)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 15$ V, $I_C = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	20	pF
Power Gain ($V_{CB} = 12.5$ V, $P_{OUT} = 4$ W, $f = 175$ MHz)	G_p	12	—	—	dB
Drain Efficiency ($V_{CB} = 12.5$ V, $P_{OUT} = 4$ W, $f = 175$ MHz)	η_C	50	—	—	%

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2N5641

SILICON BIPOLAR NPN POWER TRANSISTOR

7 W, up to 175 MHz

The silicon bipolar n-p-n transistor is designed primarily for 12.5 V AM Class C RF amplifiers functional in the aviation band 118-136 MHz and for 28 V FM Class C RF amplifiers utilized in ground station transmitters.

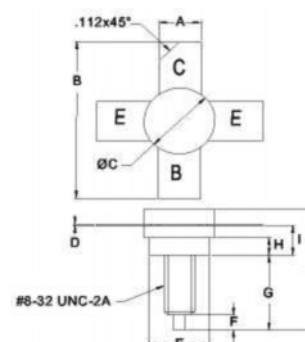
Features (At 175 MHz):

- Output Power: 7 W
- Power Gain: 8.4 dB Min
- Efficiency: 60% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	$I_{C(max)}$	1	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	11.7	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	15	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	65	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	1	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 100$ mA)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	15	pF
Power Gain ($V_{CE} = 28$ V, $P_{OUT} = 7$ W, $f = 175$ MHz)	G_p	8.4	—	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $P_{OUT} = 7$ W, $f = 175$ MHz)	η	60	—	—	%

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2N6081

SILICON BIPOLAR NPN POWER TRANSISTOR 15 W, in the 130 – 230 MHz Range

The silicon bipolar n-p-n transistor is designed primarily for VHF mobile and marine transmitters .

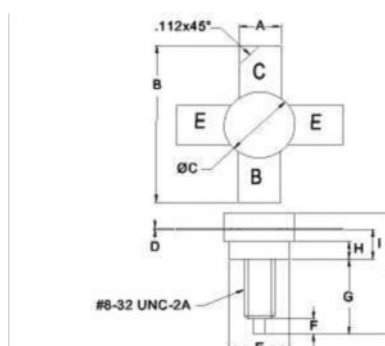
Features (At 175 MHz):

- Output Power: 15 W
- Power Gain: 6.3 dB Min
- Efficiency: 60% Min
- Common Emitter

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	18	V_{DC}
Collector–Base Voltage	V_{CBO}	36	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	$I_{C(max)}$	2.5	A_{DC}
Operation Junction Temperature	T_J	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.6	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	31	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 100 \text{ mA}$, $I_B = 0 \text{ A}$)	$V_{(BR)CEO}$	18	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 20 \text{ mA}$, $V_{BE} = 0 \text{ V}$)	$V_{(BR)CER}$	36	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10 \text{ mA}$, $I_C = 0 \text{ A}$)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 15 \text{ V}$, $I_E = 0 \text{ A}$)	I_{CBO}	—	—	0.5	mA_{DC}
DC Current Gain ($V_{CE} = 5 \text{ V}$, $I_C = 0.25 \text{ A}$)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 15 \text{ V}$, $I_C = 0 \text{ A}$, $f = 1 \text{ MHz}$)	C_{OB}	—	—	85	pF
Power Gain ($V_{CB} = 12.5 \text{ V}$, $P_{OUT} = 15 \text{ W}$, $f = 175 \text{ MHz}$)	G_p	6.3	—	—	dB
Drain Efficiency ($V_{CB} = 12.5 \text{ V}$, $P_{OUT} = 15 \text{ W}$, $f = 175 \text{ MHz}$)	η_c	60	—	—	%

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2N6082

SILICON BIPOLAR NPN POWER TRANSISTOR 25 W, in the 130 – 230 MHz Range

The silicon bipolar n-p-n transistor is designed primarily for VHF mobile and marine transmitters .

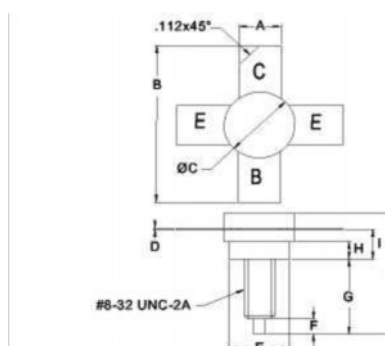
Features (At 175 MHz):

- Output Power: 25 W
- Power Gain: 6.2 dB Min
- Efficiency: 50% Min
- Common Emitter

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	18	V_{DC}
Collector–Base Voltage	V_{CBO}	36	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	$I_{C(max)}$	4	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.8	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	65	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 100 \text{ mA}$, $I_B = 0 \text{ A}$)	$V_{(BR)CEO}$	18	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 20 \text{ mA}$, $V_{BE} = 0 \text{ V}$)	$V_{(BR)CER}$	36	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10 \text{ mA}$, $I_C = 0 \text{ A}$)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 15 \text{ V}$, $I_E = 0 \text{ A}$)	I_{CBO}	—	—	1.0	mA_{DC}
DC Current Gain ($V_{CE} = 5 \text{ V}$, $I_C = 0.25 \text{ A}$)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 15 \text{ V}$, $I_C = 0 \text{ A}$, $f = 1 \text{ MHz}$)	C_{OB}	—	—	130	pF
Power Gain ($V_{CB} = 12.5 \text{ V}$, $P_{OUT} = 25 \text{ W}$, $f = 175 \text{ MHz}$)	G_p	6.2	—	—	dB
Drain Efficiency ($V_{CB} = 12.5 \text{ V}$, $P_{OUT} = 25 \text{ W}$, $f = 175 \text{ MHz}$)	η_C	50	—	—	%

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BLY89C

SILICON BIPOLAR NPN POWER TRANSISTOR 25 W, up to 175 MHz

The silicon bipolar n-p-n transistor is designed for Class C, 28 V High Band Applications up to 175 MHz.

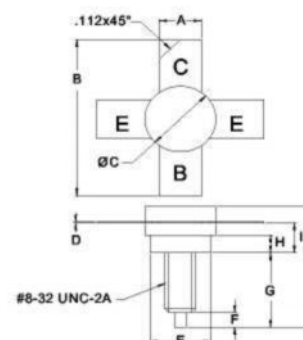
Features (At 175 MHz):

- Output Power: 25 W
- Power Gain: 6 dB Min
- Efficiency: 70% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	18	V_{DC}
Collector–Base Voltage	V_{CBO}	36	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	6	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.4	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	73	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM Inches / mm	MAXIMUM Inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 50$ mA, $V_{BE} = 0$ V)	$V_{(BR)CEO}$	18	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 25$ mA, $R_{BE} = 10$ Ω)	$V_{(BR)CER}$	36	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 18$ V)	I_{CBO}	—	—	10	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 1.25$ A)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 15$ V, $I_E = 0$, $f = 1$ MHz)	C_{OB}	—	—	130	pF
Power Gain ($V_{CE} = 12.5$ V, $P_{OUT} = 25$ W, $f = 175$ MHz)	G_p	6	—	—	dB
Drain Efficiency ($V_{CE} = 12.5$ V, $P_{OUT} = 25$ W, $f = 175$ MHz)	η_C	70	—	—	%

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2N5635

SILICON BIPOLAR NPN POWER TRANSISTOR 2.5 W, up to 400 MHz

The silicon bipolar n-p-n transistor is designed for UHF communications transmitters.

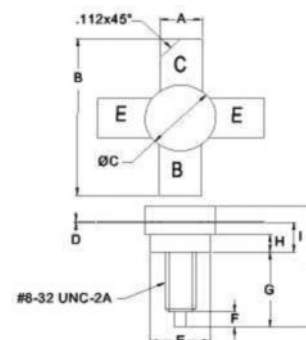
Features (At 400 MHz):

- Output Power: 2.5 W
- Power Gain: 8.5 dB Typ
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	60	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	1	A_{DC}
Operation Junction Temperature	T_J	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	23.3	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	7.5	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM Inches / mm	MAXIMUM Inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 100$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 100$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	60	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 1$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector– Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	0.10	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 100$ mA)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_C = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	10	pF
Power Gain ($V_{CE} = 28$ V, $f = 400$ MHz, $P_{OUT} = 2.5$ W)	G_p	—	8.5	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $f = 400$ MHz, $P_{OUT} = 2.5$ W)	η	50	—	—	%

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2N3375

SILICON BIPOLAR NPN POWER TRANSISTOR **3 W, in the 130 – 400 MHz Frequency Range**

The silicon bipolar n-p-n transistor is designed for Class A,B,C Amplifier,Oscillator and Driver Applications Covering the VHF-UHF Region.

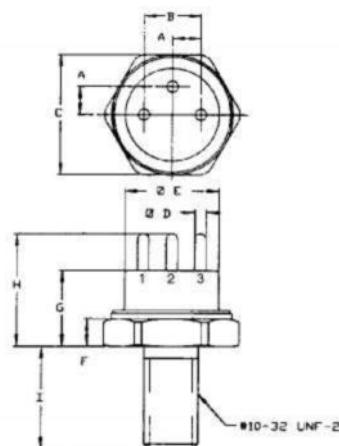
Features (At 400 MHz):

- Output Power: 3 W
- Power Gain: 4.8 dB Min
- Efficiency: 40% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	40	V_{DC}
Collector-Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	$I_{C(max)}$	1.5	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	15	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	11.6	W

PACKAGE STYLE TO-60



	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.090/2,29	.110/2,79
B	.185/4,70	.215/5,46
C	.420/10,67	.440/11,18
D	.030/0,76	.046/1,17
E	.320/8,13	.360/9,14
F	.090/2,29	.135/3,43
G	.215/5,46	.320/8,13
H		.480/12,19
I	.420/10,67	.455/11,56

1 = EMITTER
2 = BASE
3 = COLLECTOR CASE = EMITTER

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	40	—	—	V_{DC}
Collector-Base Breakdown Voltage ($I_C = 0.5$ mA, $V_{BE} = 0$ V)	$V_{(BR)CBO}$	65			V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 0.25$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector– Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	0.1	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 250$ mA)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	10	pF
Power Gain ($V_{CE} = 28$ V, $P_{OUT} = 3$ W, $f = 400$ MHz)	Gp	4.8	—	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $P_{OUT} = 3$ W, $f = 400$ MHz)	η	40	—	—	%

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2N6202

SILICON BIPOLAR NPN POWER TRANSISTOR 3 W, in the 100 – 400 MHz Range

The silicon bipolar n-p-n transistor is designed for communications transceiver equipment, auto-oscillator and frequency multiplier circuits, common emitter.

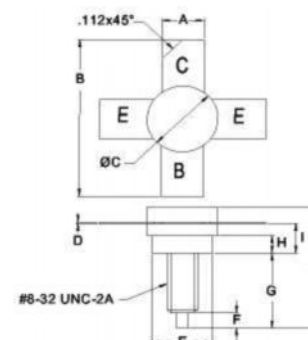
Features (At 400 MHz):

- Output Power: 3 W
- Power Gain: 8 dB Min
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	33	V_{DC}
Collector–Emitter Voltage	V_{CER}	60	V_{DC}
Collector–Base Voltage	V_{CBO}	60	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	0.5	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	17.5	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	7.5	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	33	—	—	V_{DC}
Collector–Base Breakdown Voltage ($I_C = 0.5$ mA, $V_{BE} = 0$ V)	$V_{(BR)CBO}$	60	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 2.5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 0.25$ A)	h_{FE}	5	—	100	
Power Gain ($V_{CC} = 28$ V, $P_{OUT} = 3$ W, $f = 400$ MHz)	G_p	8	—	—	dB
Drain Efficiency ($V_{CC} = 28$ V, $P_{OUT} = 3$ W, $f = 400$ MHz)	η_C	50	60	80	%

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2N5636

SILICON BIPOLAR NPN POWER TRANSISTOR 7.5 W, up to 400 MHz

The silicon bipolar n-p-n transistor is designed for UHF communications transmitters.

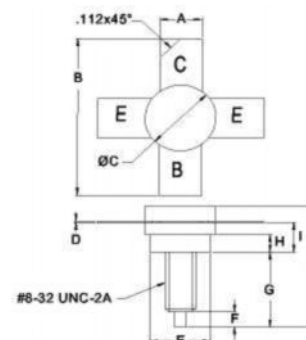
Features (At 400 MHz):

- Output Power: 7.5 W
- Power Gain: 7.9 dB Typ
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	60	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	1.5	A_{DC}
Operation Junction Temperature	T_J	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	11.7	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	15	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM Inches / mm	MAXIMUM Inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	60	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	0.1	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 200$ mA)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_C = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	20	pF
Power Gain ($V_{CE} = 28$ V, $f = 400$ MHz, $P_{OUT} = 7.5$ W)	G_p	—	7.9	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $f = 400$ MHz, $P_{OUT} = 7.5$ W)	η	50	—	—	%

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Specification is subject to change without notice

2N3733

SILICON BIPOLAR NPN POWER TRANSISTOR 10 W, in the 130 – 400 MHz Frequency Range

The silicon bipolar n-p-n transistor is designed for Class A,B,C Amplifier, Oscillator and Driver Applications Covering the VHF-UHF Region.

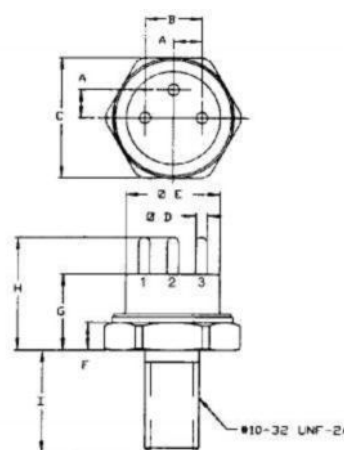
Features (At 400 MHz):

- Output Power: 10 W
- Power Gain: 4 dB Min
- Efficiency: 45% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	40	V_{DC}
Collector–Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	$I_{C(max)}$	3	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7.6	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	23	W

PACKAGE STYLE TO-60



	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.090/2,29	.110/2,79
B	.185/4,70	.215/5,46
C	.420/10,67	.440/11,18
D	.030/0,76	.046/1,17
E	.320/8,13	.360/9,14
F	.090/2,29	.135/3,43
G	.215/5,46	.320/8,13
H		.480/12,19
I	.420/10,67	.455/11,56

1 = EMITTER 2 = BASE
3 = COLLECTOR CASE = EMITTER

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200 \text{ mA}$, $I_B = 0 \text{ A}$)	$V_{(BR)CEO}$	40	—	—	V_{DC}
Collector–Base Breakdown Voltage ($I_C = 0.5 \text{ mA}$, $V_{BE} = 0 \text{ V}$)	$V_{(BR)CBO}$	65			V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 0.25 \text{ mA}$, $I_C = 0 \text{ A}$)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30 \text{ V}$, $I_E = 0 \text{ A}$)	I_{CBO}	—	—	0.25	mA_{DC}
DC Current Gain ($V_{CE} = 5 \text{ V}$, $I_C = 250 \text{ mA}$)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 30 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1 \text{ MHz}$)	C_{OB}	—	—	20	pF
Power Gain ($V_{CE} = 28 \text{ V}$, $P_{OUT} = 10 \text{ W}$, $f = 400 \text{ MHz}$)	G_p	4	—	—	dB
Drain Efficiency ($V_{CE} = 28 \text{ V}$, $P_{OUT} = 10 \text{ W}$, $f = 400 \text{ MHz}$)	η	45	—	—	%

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2N6203

SILICON BIPOLAR NPN POWER TRANSISTOR 12 W, in the 100 – 400 MHz Range

The silicon bipolar n-p-n transistor is designed for communications transceiver equipment, auto-oscillator and frequency multiplier circuits, common emitter.

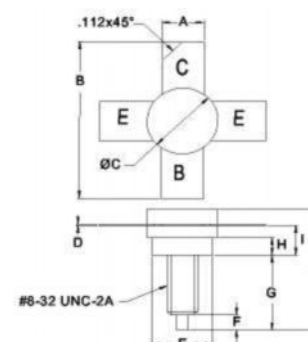
Features (At 400 MHz):

- Output Power: 12 W
- Power Gain: 6 dB Min
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	33	V_{DC}
Collector–Emitter Voltage	V_{CER}	60	V_{DC}
Collector–Base Voltage	V_{CBO}	60	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	1	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	8.8	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	15	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200 \text{ mA}$, $I_B = 0 \text{ A}$)	$V_{(BR)CEO}$	33	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 1 \text{ A}$, $V_{BE} = 0 \text{ V}$)	$V_{(BR)CER}$	60	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 2.5 \text{ mA}$, $I_C = 0 \text{ A}$)	$V_{(BR)EBO}$	4	—	—	V_{DC}
DC Current Gain ($V_{CE} = 5 \text{ V}$, $I_C = 0.25 \text{ A}$)	h_{FE}	5	—	100	
Power Gain ($V_{CC} = 28 \text{ V}$, $P_{OUT} = 12 \text{ W}$, $f = 400 \text{ MHz}$)	G_p	6	—	—	dB
Drain Efficiency ($V_{CC} = 28 \text{ V}$, $P_{OUT} = 12 \text{ W}$, $f = 400 \text{ MHz}$)	η_C	50	70	—	%

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2N5016

SILICON BIPOLAR NPN POWER TRANSISTOR 15 W, up to 400 MHz

The silicon bipolar n-p-n transistor is designed for UHF communications transmitters.

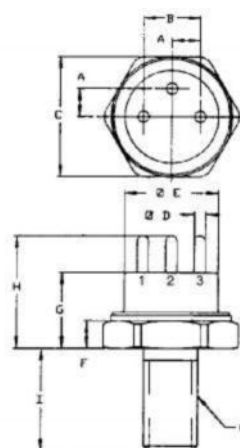
Features (At 400 MHz):

- Output Power: 15 W
- Power Gain: 4.8 dB Min
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	30	V_{DC}
Collector-Base Voltage	V_{CBO}	65	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	4.5	A_{DC}
Operation Junction Temperature	T_J	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7.5	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	30	W

PACKAGE STYLE TO-60



	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.090/2,29	.110/2,79
B	.185/4,70	.215/5,46
C	.420/10,67	.440/11,18
D	.030/0,76	.046/1,17
E	.320/8,13	.360/9,14
F	.090/2,29	.135/3,43
G	.215/5,46	.320/8,13
H		.480/12,19
I	.420/10,67	.455/11,56

1 = EMITTER
2 = BASE
3 = COLLECTOR CASE = EMITTER

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 100\text{ mA}$, $I_B = 0\text{ A}$)	$V_{(BR)CEO}$	30	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 10\text{ mA}$, $V_{BE} = 0\text{ V}$)	$V_{(BR)CER}$	65	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 1\text{ mA}$, $I_C = 0\text{ A}$)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30\text{ V}$, $I_E = 0\text{ A}$)	I_{CBO}	—	—	0.10	mA_{DC}
DC Current Gain ($V_{CE} = 5\text{ V}$, $I_C = 200\text{ mA}$)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 28\text{ V}$, $I_C = 0\text{ A}$, $f = 1\text{ MHz}$)	C_{OB}	—	—	25	pF
Power Gain ($V_{CE} = 28\text{ V}$, $f = 400\text{ MHz}$, $P_{OUT} = 15\text{ W}$)	G_p	4.8	—	—	dB
Drain Efficiency ($V_{CE} = 28\text{ V}$, $f = 400\text{ MHz}$, $P_{OUT} = 15\text{ W}$)	η	50	—	—	%

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2N5177

SILICON BIPOLAR NPN POWER TRANSISTOR 17 W, in the 100 – 500 MHz Frequency Range

The silicon bipolar n-p-n transistor is designed for power amplifier, frequency multiplier or auto-oscillator applications in industrial equipment.

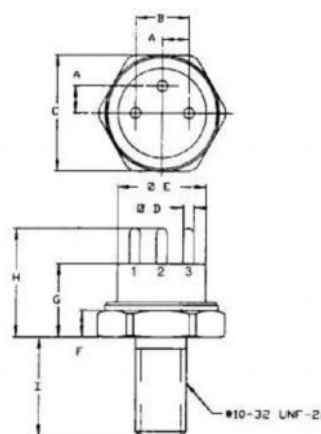
Features (At 500 MHz):

- Output Power: 17 W
- Power Gain: 3 dB Min
- Efficiency: 45% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	55	V_{DC}
Emitter–Base Voltage	V_{EBO}	3.5	V_{DC}
Collector Current	I_C	2	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	40	W

PACKAGE STYLE TO-60



	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.090/2,29	.110/2,79
B	.185/4,70	.215/5,46
C	.420/10,67	.440/11,18
D	.030/0,76	.046/1,17
E	.320/8,13	.360/9,14
F	.090/2,29	.135/3,43
G	.215/5,46	.320/8,13
H		.480/12,19
I	.420/10,67	.455/11,56

1 = EMITTER 2 = BASE
3 = COLLECTOR CASE = EMITTER

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200 \text{ mA}$, $I_B = 0 \text{ A}$)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 20 \text{ mA}$, $V_{BE} = 0 \text{ V}$)	$V_{(BR)CER}$	55	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 2.5 \text{ mA}$, $I_C = 0 \text{ A}$)	$V_{(BR)EBO}$	3.5	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 15 \text{ V}$, $I_E = 0 \text{ A}$)	I_{CBO}	—	—	1	mA_{DC}
DC Current Gain ($V_{CE} = 5 \text{ V}$, $I_C = 0.25 \text{ A}$)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 15 \text{ V}$, $I_C = 0 \text{ A}$, $f = 1 \text{ MHz}$)	C_{OB}	—	—	20	pF
Power Gain ($V_{CE} = 28 \text{ V}$, $P_{OUT} = 17 \text{ W}$, $f = 500 \text{ MHz}$)	G_p	3	—	—	dB
Drain Efficiency ($V_{CE} = 28 \text{ V}$, $P_{OUT} = 17 \text{ W}$, $f = 500 \text{ MHz}$)	η_C	45	—	—	%

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2N5637

SILICON BIPOLAR NPN POWER TRANSISTOR 20 W, up to 400 MHz

The silicon bipolar n-p-n transistor is designed for UHF communications transmitters.

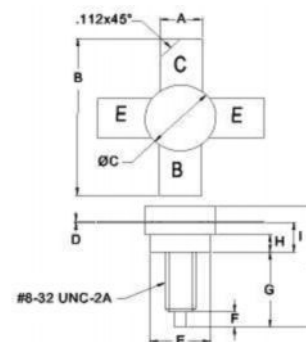
Features (At 400 MHz):

- Output Power: 20 W
- Power Gain: 6.1 dB Typ
- Efficiency: 60% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	35	V_{DC}
Collector–Base Voltage	V_{CBO}	60	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	3	A_{DC}
Operation Junction Temperature	T_J	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.8	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	30	W

PACKAGE STYLE .380 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 200$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	60	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	0.1	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 500$ mA)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30$ V, $I_C = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	30	pF
Power Gain ($V_{CE} = 28$ V, $f = 400$ MHz, $P_{OUT} = 20$ W)	G_p	—	6.1	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $f = 400$ MHz, $P_{OUT} = 20$ W)	η	60	—	—	%

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MRF393

SILICON BIPOLAR NPN POWER TRANSISTOR 100 W, in the 30 – 500 MHz Frequency Range

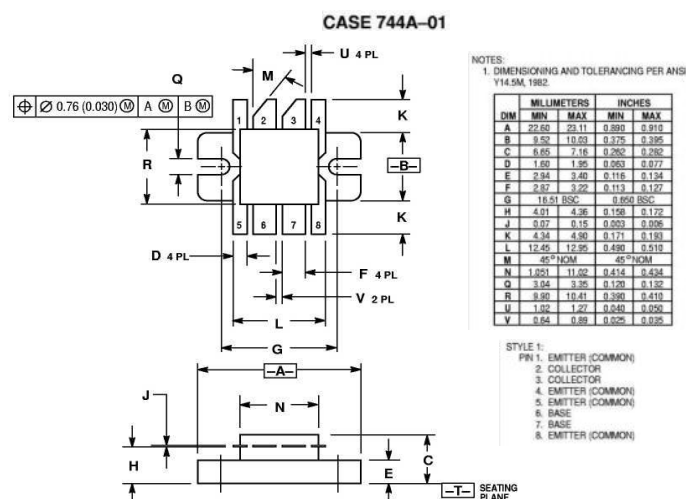
The silicon bipolar n-p-n transistor is designed for wideband large-signal output and driver amplifier stages in the 30 to 500 MHz frequency range.

Features (At 500 MHz):

- Output Power: 100 W
- Power Gain: 7.5 dB Min
- Efficiency: 50% Typ

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	30	V_{DC}
Collector–Base Voltage	V_{CBO}	60	V_{DC}
Emitter–Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	16	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.65	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	270	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 50$ mA, $I_B = 0$ A)	$V_{(BR)CEO}$	30	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 50$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	60	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	5	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 1$ A)	h_{FE}	20	—	100	
Output Capacitance ($V_{CB} = 28$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	95	pF
Power Gain ($V_{CC} = 28$ V, $f = 500$ MHz, $P_{OUT} = 100$ W)	G_p	7.5	—	—	dB
Drain Efficiency ($V_{CC} = 28$ V, $f = 500$ MHz, $P_{OUT} = 100$ W)	η	50	—	—	%

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KT9147AC

SILICON BIPOLAR NPN POWER TRANSISTOR 200 W, in the 30 – 500 MHz Frequency Range

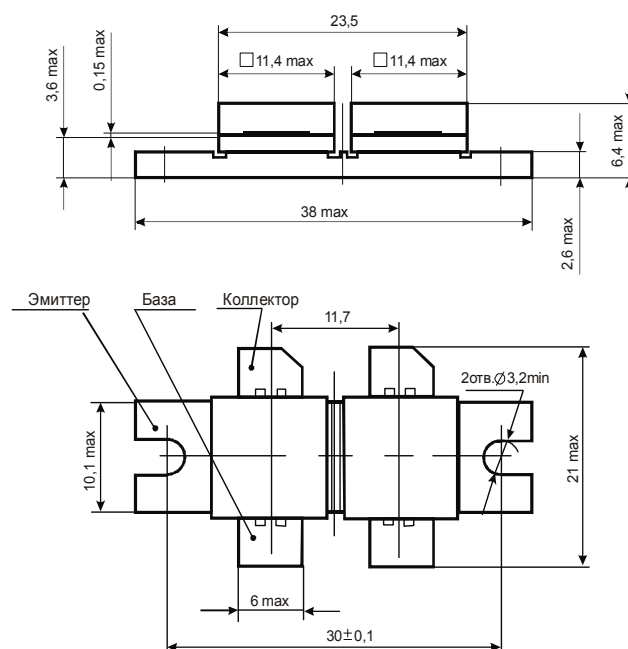
The silicon bipolar n-p-n transistor is designed for wideband large-signal output and driver amplifier stages in the 30 to 500 MHz frequency range.

Features (At 400 MHz):

- Output Power: 160 W
- Power Gain: 6 dB Min
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V_{DC}
Emitter-Base Voltage	V_{EBO}	4	V_{DC}
Collector Current	I_C	29	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.6	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	292	W



CaseKT-82

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage ($I_C = 50$ mA, $V_{BE} = 0$ V)	$V_{(BR)CER}$	50	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector-Base Leakage Current ($V_{CB} = 30$ V, $I_E = 0$ A)	I_{CBO}	—	—	20	mA_{DC}
DC Current Gain ($V_{CE} = 5$ V, $I_C = 1$ A)	h_{FE}	20	—	100	
Output Capacitance ($V_{CB} = 28$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	420	pF
Power Gain ($V_{CC} = 28$ V, $f = 400$ MHz, $P_{OUT} = 160$ W)	Gp	6	9	—	dB
Drain Efficiency ($V_{CC} = 28$ V, $f = 400$ MHz, $P_{OUT} = 160$ W)	η	50	—	—	%

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KT9188A

SILICON BIPOLAR NPN POWER TRANSISTOR 10 W, in the 100 – 470 MHz Frequency Range

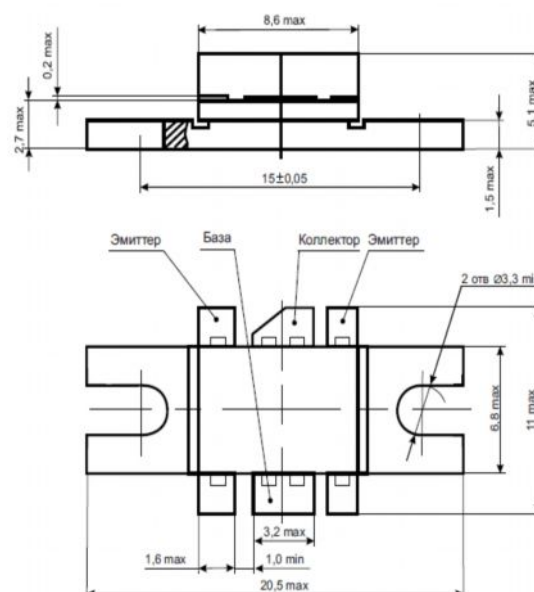
The silicon bipolar n-p-n transistor is designed for wideband large-signal output and driver amplifier stages in the 100 to 470 MHz frequency range.

Features (At 470 MHz):

- Output Power: 10 W
- Power Gain: 6 dB Min
- Efficiency: 55% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Base Voltage	V_{CBO}	36	V_{DC}
Emitter-Base Voltage	V_{EBO}	3	V_{DC}
Collector Current	I_C	2.0	A_{DC}
Operation Junction Temperature	T_J	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	44	W



Case KT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage ($I_C = 50 \text{ mA}$, $V_{BE} = 0 \text{ V}$)	$V_{(BR)CES}$	36	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 5 \text{ mA}$, $I_C = 0 \text{ A}$)	$V_{(BR)EBO}$	3	—	—	V_{DC}
Collector-Base Leakage Current ($V_{CB} = 20 \text{ V}$, $I_E = 0 \text{ A}$)	I_{CBO}	—	—	10	mA_{DC}
DC Current Gain ($V_{CE} = 10 \text{ V}$, $I_C = 0. \text{ A}$)	h_{FE}	20	—	100	
Output Capacitance ($V_{CB} = 7.5 \text{ V}$, $I_E = 0.1 \text{ A}$, $f = 1 \text{ MHz}$)	C_{OB}	—	—	34	pF
Power Gain ($V_{CC} = 7.5 \text{ V}$, $f = 470 \text{ MHz}$, $P_{OUT} = 10W$)	G_p	6	—	—	dB
Drain Efficiency ($V_{CC} = 7.5 \text{ V}$, $f = 470 \text{ MHz}$, $P_{OUT} = 10 \text{ W}$)	η	55	—	—	%

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Specification is subject to change without notice

KT9175A

SILICON BIPOLAR NPN POWER TRANSISTOR 0.5 W, in the 140 – 512 MHz Frequency Range

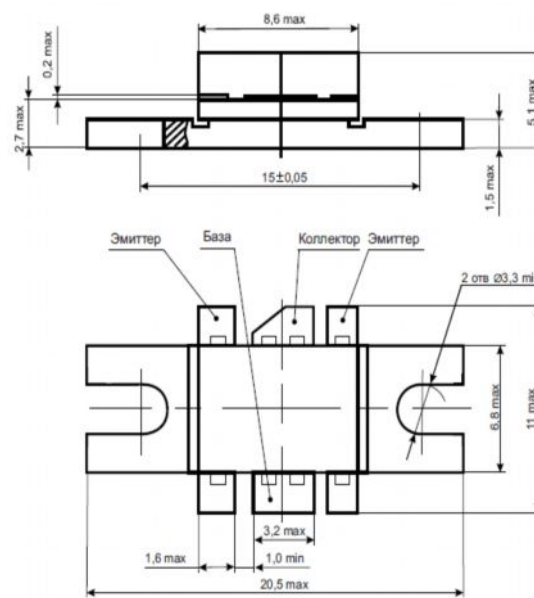
The silicon bipolar n-p-n transistor is designed for wideband large-signal output and driver amplifier stages in the 140 to 512 MHz frequency range.

Features (At 470 MHz):

- Output Power: 0.5 W
- Power Gain: 10 dB Min
- Efficiency: 55% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Base Voltage	V_{CBO}	20	V_{DC}
Emitter-Base Voltage	V_{EBO}	3	V_{DC}
Collector Current	I_C	0.5	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	12	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	15	W



CaseKT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage ($I_C = 50 \text{ mA}$, $V_{BE} = 0 \text{ V}$)	$V_{(BR)CES}$	20	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 5 \text{ mA}$, $I_C = 0 \text{ A}$)	$V_{(BR)EBO}$	3	—	—	V_{DC}
Collector-Base Leakage Current ($V_{CB} = 20 \text{ V}$, $I_E = 0 \text{ A}$)	I_{CBO}	—	—	2	mA_{DC}
DC Current Gain ($V_{CE} = 10 \text{ V}$, $I_C = 0.1 \text{ A}$)	h_{FE}	20	—	100	
Output Capacitance ($V_{CB} = 7.5 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1 \text{ MHz}$)	C_{OB}	—	—	12	pF
Power Gain ($V_{CC} = 7.5 \text{ V}$, $f = 470 \text{ MHz}$, $P_{OUT} = 0.5 \text{ W}$)	G_p	10	—	—	dB
Drain Efficiency ($V_{CC} = 7.5 \text{ V}$, $f = 470 \text{ MHz}$, $P_{OUT} = 0.5 \text{ W}$)	η	55	—	—	%

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KT9175B

SILICON BIPOLAR NPN POWER TRANSISTOR 2 W, in the 140 – 512 MHz Frequency Range

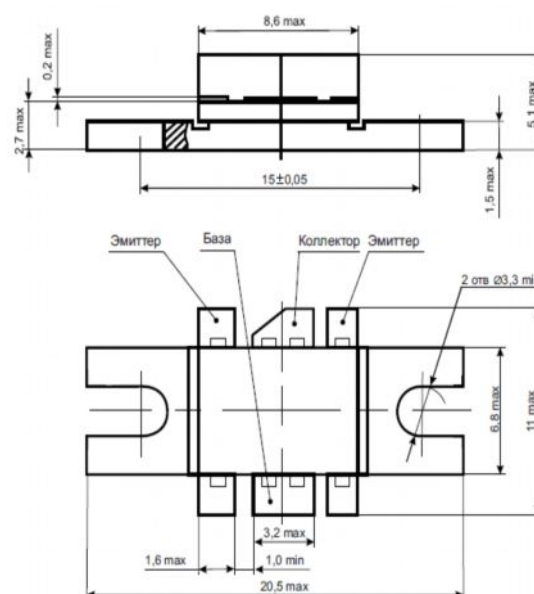
The silicon bipolar n-p-n transistor is designed for wideband large-signal output and driver amplifier stages in the 140 to 512 MHz frequency range.

Features (At 470 MHz):

- Output Power: 2 W
- Power Gain: 8 dB Min
- Efficiency: 55% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Base Voltage	V_{CBO}	20	V_{DC}
Emitter-Base Voltage	V_{EBO}	3	V_{DC}
Collector Current	I_C	1.0	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	6	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	29	W



Case KT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage ($I_C = 50$ mA, $V_{BE} = 0$ V)	$V_{(BR)CES}$	20	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	3	—	—	V_{DC}
Collector-Base Leakage Current ($V_{CB} = 20$ V, $I_E = 0$ A)	I_{CBO}	—	—	6	mA_{DC}
DC Current Gain ($V_{CE} = 10$ V, $I_C = 0.1$ A)	h_{FE}	20	—	100	
Output Capacitance ($V_{CB} = 7.5$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	24	pF
Power Gain ($V_{CC} = 7.5$ V, $f = 470$ MHz, $P_{OUT} = 2$ W)	G_p	8	—	—	dB
Drain Efficiency ($V_{CC} = 7.5$ V, $f = 470$ MHz, $P_{OUT} = 2$ W)	η	55	—	—	%

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KT9175V

SILICON BIPOLAR NPN POWER TRANSISTOR 5 W, in the 140 – 512 MHz Frequency Range

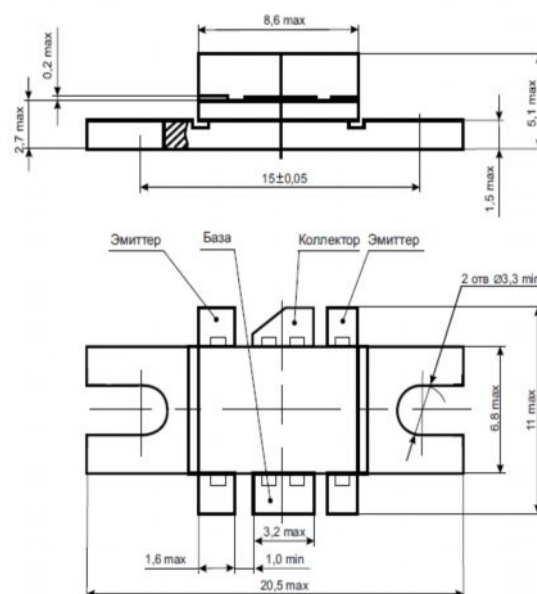
The silicon bipolar n-p-n transistor is designed for wideband large-signal output and driver amplifier stages in the 140 to 512 MHz frequency range.

Features (At 470 MHz):

- Output Power: 5 W
- Power Gain: 6 dB Min
- Efficiency: 55% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Base Voltage	V_{CBO}	20	V_{DC}
Emitter-Base Voltage	V_{EBO}	3	V_{DC}
Collector Current	I_C	2.0	A_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3	$^{\circ}C/W$
Total Power Dissipation, $T_C=25^{\circ}C$	P_D	58	W



Case KT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage ($I_C = 50$ mA, $V_{BE} = 0$ V)	$V_{(BR)CES}$	20	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	3	—	—	V_{DC}
Collector-Base Leakage Current ($V_{CB} = 20$ V, $I_E = 0$ A)	I_{CBO}	—	—	10	mA_{DC}
DC Current Gain ($V_{CE} = 10$ V, $I_C = 0.1$ A)	h_{FE}	20	—	100	
Output Capacitance ($V_{CB} = 7.5$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	34	pF
Power Gain ($V_{CC} = 7.5$ V, $f = 470$ MHz, $P_{OUT} = 5$ W)	Gp	6	—	—	dB
Drain Efficiency ($V_{CC} = 7.5$ V, $f = 470$ MHz, $P_{OUT} = 5$ W)	η	55	—	—	%

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NPN SILICON RF POWER TRANSISTOR

2SC3812

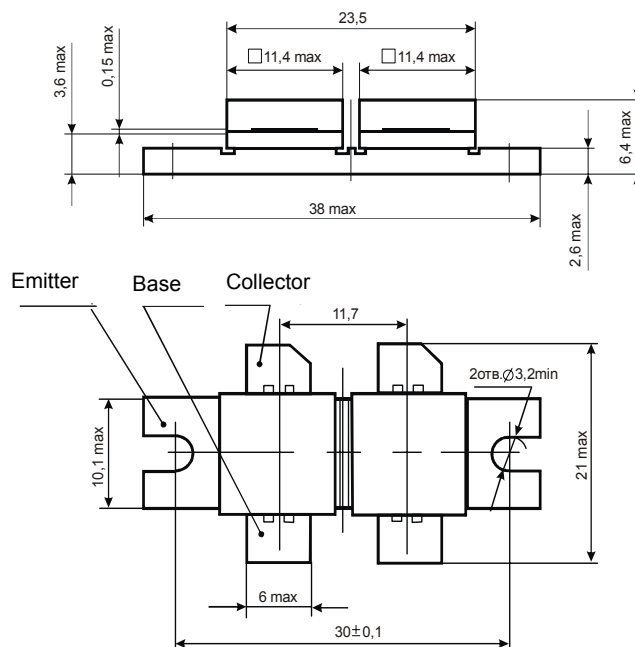
The silicon n-p-n transistor is designed for Class AB Linearity Amplifier Applications in TV Band II-III Transmitters.

Features:

- Power Gain: 7 dB
- Output Power: 200 W
- Efficiency 50% (min)

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Emitter Voltage	V_{CEO}	32	V_{DC}
Collector-Base Voltage	V_{CBO}	55	V_{DC}
Collector Current	I_C	48	A_{DC}
Operation Junction Temperature	T_j	+200	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 ÷ +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.3	$^{\circ}C/W$
Total Power Dissipation, $T_C = 25^{\circ}C$	P_D	580	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage ($I_C = 200$ mA, $V_{BE} = 0$ V)	$V_{(BR)CEO}$	32	—	—	V_{DC}
Collector-Base Breakdown Voltage ($I_C = 50$ mA)	$V_{(BR)CBO}$	55	—	—	V_{DC}
Emitter-Base Breakdown Voltage ($I_E = 10$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector-Base Leakage Current ($V_{CB} = 55$ V)	I_{CBO}	—	—	10	mA
DC Current Gain ($V_{CE} = 5$ V, $I_C = 3$ A)	h_{FE}	30	—	100	
Output Capacitance ($V_{CB} = 28$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	300	500	pF
Output Power ($V_{CE} = 28$ V, $I_C = 2 \times 0.5$ A, $f = 230$ MHz, $P_{IN} = 45$ W)	P_{OUT}	158	200	—	W
Power Gain ($V_{CE} = 28$ V, $I_C = 2 \times 0.5$ A, $f = 230$ MHz)	G_p	7	8	—	dB
Collector Efficiency ($V_{CE} = 28$ V, $I_C = 2 \times 0.5$ A, $f = 230$ MHz, $P_{OUT} = 200$ W)	η	50	60	—	%

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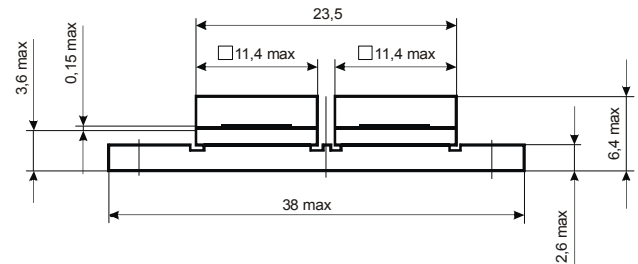
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NPN SILICON RF POWER TRANSISTOR

KT9151A

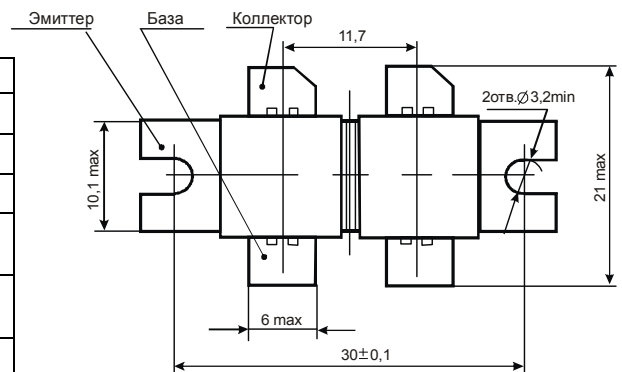
Designed for operation in linear
Class AB push-pull power amplifiers
of TV and aircraft radio transmitters

- Output power = 200 W , $f = 225$ MHz, $V_{CC} = 28$ V
- Power gain = 7 dB (min)



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	55	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	33	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	0.5	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	350	W



Case KT-82

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 200$ W @ 1 dB Comp., $f = 225$ MHz)	G_P	7			dB
Collector Efficiency ($V_{CC} = 28$ V, $P_{out} = 200$ W, $f = 225$ MHz)	η_c	55			%

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NPN SILICON RF POWER TRANSISTOR

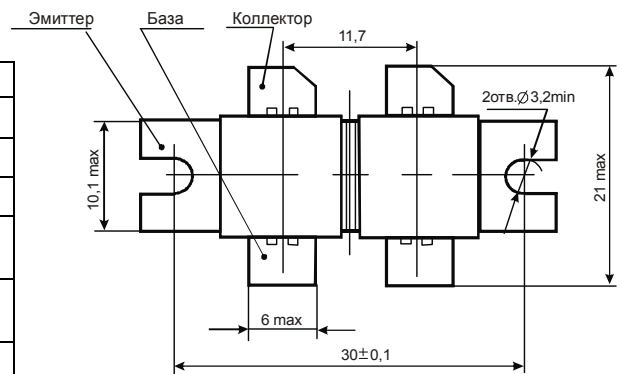
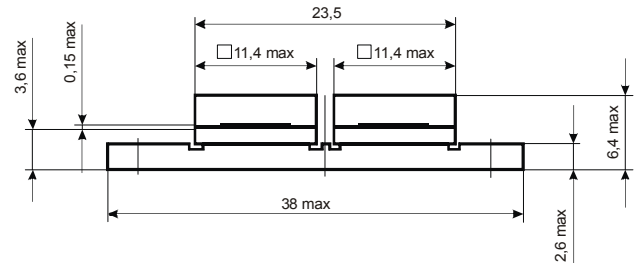
KT9174A

Designed for operation in linear
Class AB push-pull power amplifiers
of TV and aircraft radio transmitters

- Output power = 300 W
- Power gain = 12 dB (min), f = 100 MHz

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	55	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	28	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	0.5	°C/W
Total Power Dissipation, $T_C=25\text{ °C}$	P_D	350	W



Case KT-82

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28\text{ V}$, $P_{out} = 300\text{ W}$ @ 1 dB Comp., f = 100 MHz)	G_P	12			dB
Collector Efficiency ($V_{CC} = 28\text{ V}$, $P_{out} = 300\text{ W}$, f = 100 MHz)	η_C	55			%

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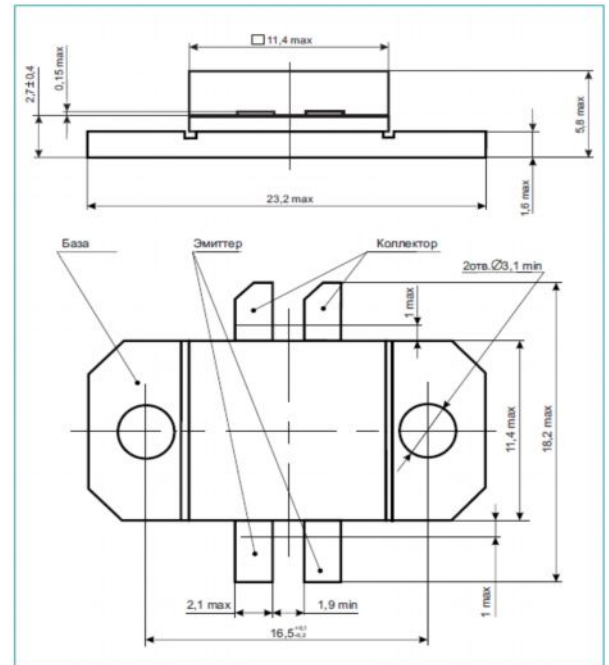
KT9156AC

Designed for wideband large-signal
Class AB linear amplifier applications
in power FM equipment operating to 1GHz

- Output power = 15 W, $f = 1000$ MHz, $V_{CC} = 28$ V
- Power gain = 7 dB (min)
- Efficiency = 40% (min)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	50	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	4	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	3.2	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	55	W



Case KT-44

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 15$ W @ 1 dB Comp., $f = 1000$ MHz)	G_P	7			dB
Collector Efficiency ($V_{CC} = 28$ V, $P_{out} = 15$ W, $f = 1000$ MHz)	η_c	40			%

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NPN SILICON RF POWER TRANSISTOR

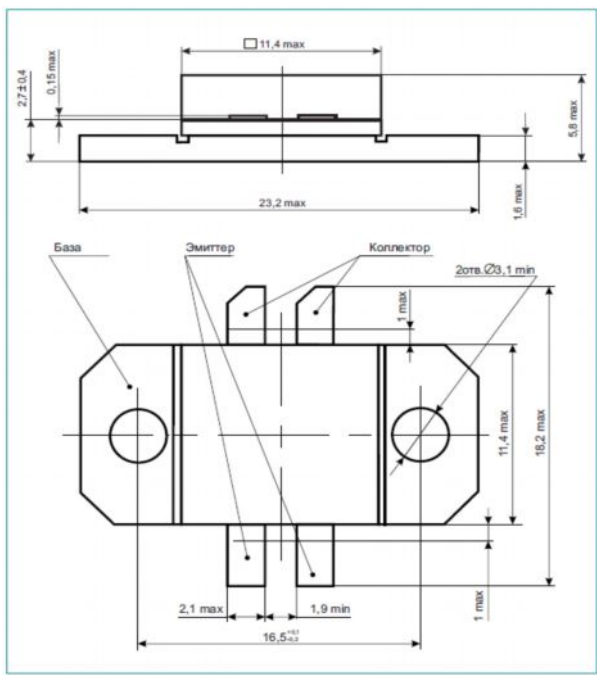
KT9156BC

Designed for wideband large-signal
Class AB linear amplifier applications
in power FM equipment operating to 1GHz

- Output power = 50 W, $f = 1000$ MHz, $V_{CC} = 28$ V
- Power gain = 6 dB (min)
- Efficiency = 50% (min)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	50	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	10	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	1.7	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	103	W



Case KT-44

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 50$ W @ 1 dB Comp., $f = 1000$ MHz)	G_P	6			dB
Collector Efficiency ($V_{CC} = 28$ V, $P_{out} = 50$ W, $f = 1000$ MHz)	η_c	50			%

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NPN SILICON RF POWER TRANSISTOR

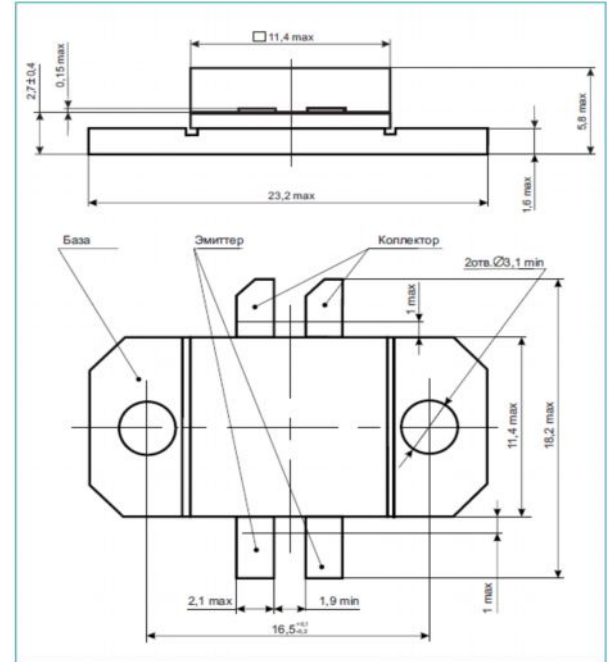
KT9155A

Designed for operation in Class AB
linear push-pull power amplifiers of
TV and radio transmitters

- Output power = 15 W, $f = 860$ MHz, $V_{CC} = 28$ V
- Power gain = 6.5 dB (min)
- Efficiency = 35% (min)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	50	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	4	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	3.2	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	55	W



Case KT-44

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 15$ W @ 1 dB Comp., $f = 860$ MHz)	G_P	6.5			dB
Collector Efficiency ($V_{CC} = 28$ V, $P_{out} = 15$ W, $f = 860$ MHz)	η_c	45			%

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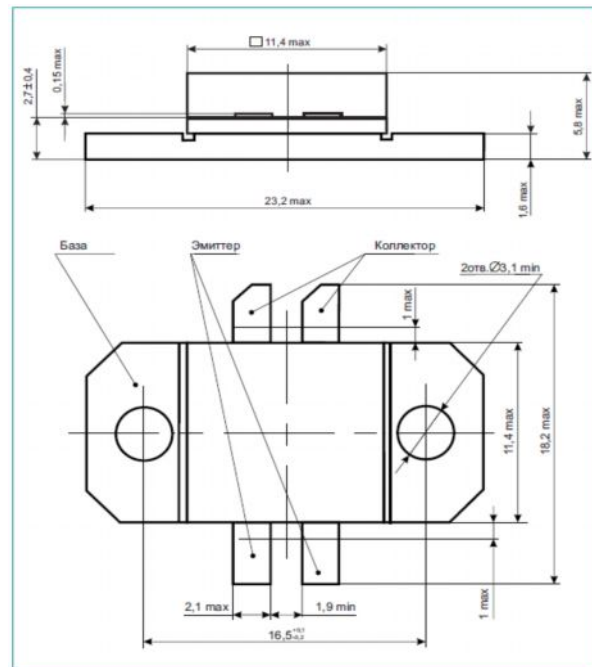
KT9155B

Designed for operation in Class AB
linear push-pull power amplifiers of
TV and radio transmitters

- Output power = 50 W, $f = 860$ MHz, $V_{CC} = 28$ V
- Power gain = 6 dB (min)
- Efficiency = 40% (min)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	50	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	15	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	1.4	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	125	W



Case KT-44

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 50$ W @ 1 dB Comp., $f = 860$ MHz)	G_P	6			dB
Collector Efficiency ($V_{CC} = 28$ V, $P_{out} = 50$ W, $f = 860$ MHz)	η_c	45			%

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TPV5051

SILICON NPN MICROWAVE POWER TRANSISTOR 50 W, in the 470 – 860 MHz Range

The silicon n-p-n transistor is designed for AB Push Pull, Common Emitter from 470 to 860 MHz Applications.

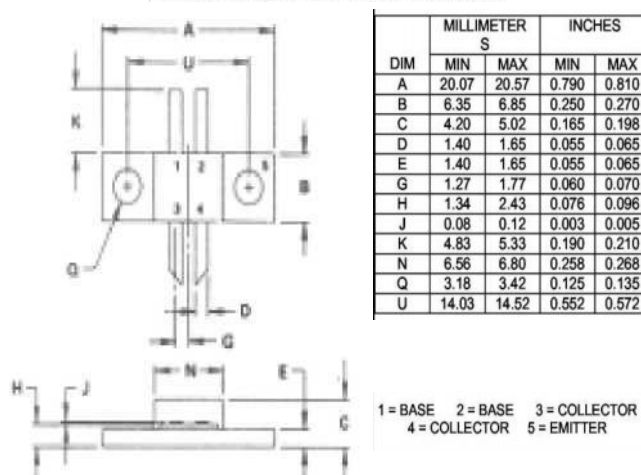
Features:

- Power Gain: 6.5 dB Min
- Output Power: 50 W
- Efficiency: 45 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	30	V_{DC}
Collector–Base Voltage	V_{CBO}	45	V_{DC}
Collector Current	I_C	9	A_{DC}
Operation Junction Temperature	T_J	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.8	$^{\circ}C/W$
Total Power Dissipation, $T_C = 25^{\circ}C$	P_D	97	W

PACKAGE STYLE BMA-2



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 60$ mA, $V_{BE} = 0$ V)	$V_{(BR)CEO}$	30	—	—	V_{DC}
Collector–Base Breakdown Voltage ($I_C = 20$ mA)	$V_{(BR)CBO}$	45	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 6$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector– Emitter Leakage Current ($V_{CE} = 28$ V)	I_{CEO}	—	—	10	mA
DC Current Gain ($V_{CE} = 20$ V, $I_C = 800$ mA)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 28$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	—	40	pF
Power Gain ($V_{CE} = 28$ V, $I_C = 2 \times 50$ mA, $f = 860$ MHz, $P_{OUT} = 50$ W)	G_p	6.5	—	—	dB
Drain Efficiency ($V_{CE} = 28$ V, $I_C = 2 \times 50$ mA, $f = 860$ MHz, $P_{OUT} = 50$ W)	η_C	45	—	—	%

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NPN SILICON RF POWER TRANSISTOR

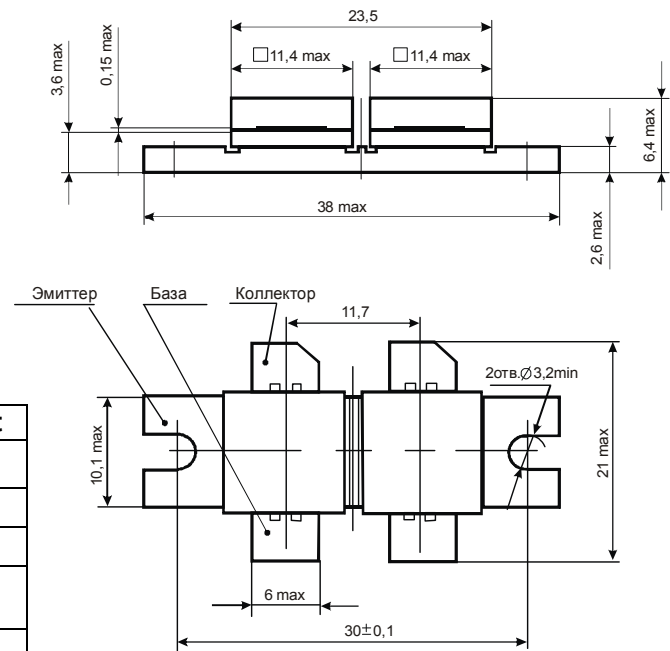
KT9155V

Designed for operation in Class AB
linear push-pull power amplifiers of
TV and radio transmitters

- Output power = 100 W, $f = 860$ MHz, $V_{CC} = 28$ V
- Power gain = 5 dB (min)
- Efficiency = 45% (min)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	50	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	24	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	0.75	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	233	W



Case KT-82

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 100$ W @ 1 dB Comp., $f = 860$ MHz)	G_P	5			dB
Collector Efficiency ($V_{CC} = 28$ V, $P_{out} = 100$ W, $f = 860$ MHz)	η_c	45			%

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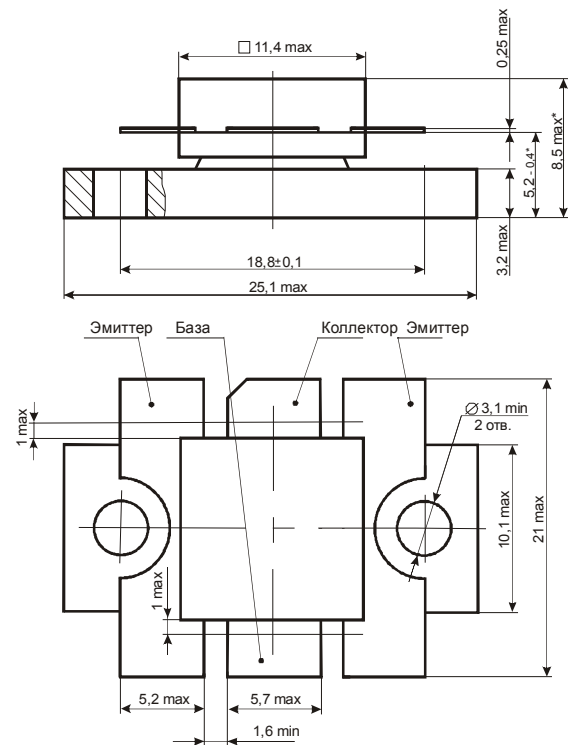
NPN SILICON RF POWER TRANSISTOR

Designed for operation in ultra - linear
Class A low and medium-power amplifiers
of TV transmitters (Band I – III)

- Output power = 5 W (PEP), $f = 225$ MHz, $V_{CC} = 28$ V
- Power gain = 14 dB (min)
- 3 Tone IMD = -58 dB (max)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	55	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	4	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	2.5	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	70	W



Case KT-56

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 5$ W PEP, $f = 225$ MHz)	G_P	14			dB
Intermodulation Distortion ⁽²⁾ ($V_{CC} = 28$ V, $P_{out} = 5$ W PEP, $f = 225$ MHz)	3 Tone IMD			-58	dB

NOTE: Three-tone test method (vision carrier: -8dB, sound carrier: -7dB, sideband carrier: -16dB)

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Specification is subject to change without notice

TPV394

SILICON NPN MICROWAVE POWER TRANSISTOR 5 W, up to 225 MHz

The silicon n-p-n transistor is designed for Class A High Linearity Amplifier Applications in TV Band II-III Transmitters.

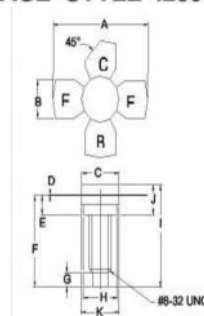
Features:

- Power Gain: 14 dB Min
- Output Power: 5 W
- IMD₃: -60 dBc Max

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	28	V_{DC}
Collector–Emitter Voltage	V_{CER}	45	V_{DC}
Collector Current	I_C	4	A_{DC}
Operation Junction Temperature	T_j	$-55 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-55 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.5	$^{\circ}C/W$
Total Power Dissipation, $T_C = 25^{\circ}C$	P_D	50	W

PACKAGE STYLE .280 4L STUD



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	1.010 / 25.65	1.055 / 26.80
B	.220 / 5.59	.230 / 5.84
C	.270 / 6.86	.285 / 7.24
D	.003 / 0.08	.007 / 0.18
E	.117 / 2.97	.137 / 3.48
F	.572 / 14.53	
G	.130 / 3.30	
H	.245 / 6.22	.265 / 6.48
I	.040 / 10.26	
J	.175 / 4.45	.217 / 5.51
K	.275 / 6.99	.285 / 7.24

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 40$ mA, $V_{BE} = 0$ V)	$V_{(BR)CEO}$	28	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 10$ mA, $R_{BE} = 10$ Ω)	$V_{(BR)CER}$	45	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 5$ mA, $I_C = 0$ A)	$V_{(BR)EBO}$	4	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 20$ V)	I_{CBO}	—	—	3	mA
DC Current Gain ($V_{CE} = 5$ V, $I_C = 1000$ mA)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 28$ V, $I_E = 0$ A, $f = 1$ MHz)	C_{OB}	—	34	—	pF
Power Gain ($V_{CE} = 28$ V, $I_C = 1000$ mA, $f = 225$ MHz, $P_{OUT} = 5$ W)	G_p	14	—	—	dB
Two-Tone Third-Order Intermodulation Distortion ($V_{CE} = 28$ V, $I_C = 1000$ mA, $f = 225$ MHz, $P_{OUT} = 5$ W)	IMD ₃	—	—	-60	dBc

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KT9116B

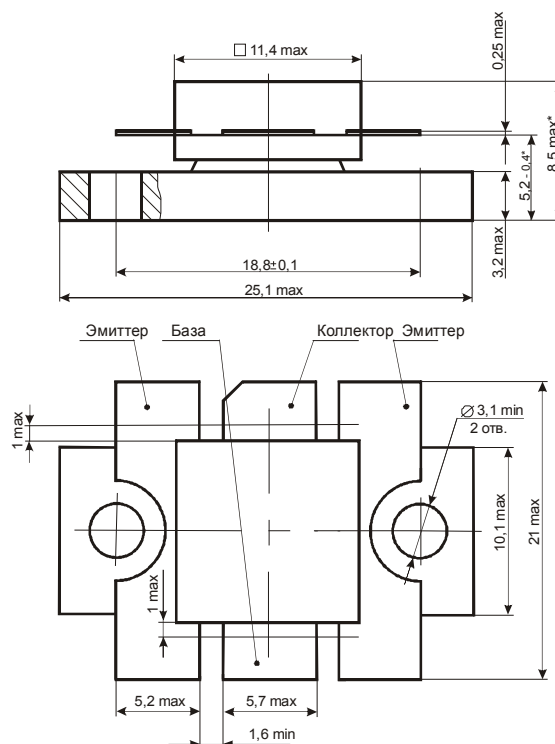
NPN SILICON RF POWER TRANSISTOR

Designed for operation in ultra - linear
Class A low and medium-power amplifiers
of TV transmitters (Band I – III)

- Output power = 15 W (PEP), $f = 225$ MHz, $V_{CC} = 28$ V
- Power gain = 10 dB (min)
- 3 Tone IMD = -55 dB (max)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	55	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	10	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	1.5	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	117	W



Case KT-56

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 15$ W PEP, $f = 225$ MHz)	G_P	10			dB
Intermodulation Distortion ⁽²⁾ ($V_{CC} = 28$ V, $P_{out} = 15$ W PEP, $f = 225$ MHz)	3 Tone IMD			-55	dB

NOTE: Three-tone test method (vision carrier: -8dB, sound carrier: -7dB, sideband carrier: -16dB)

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KT9133A

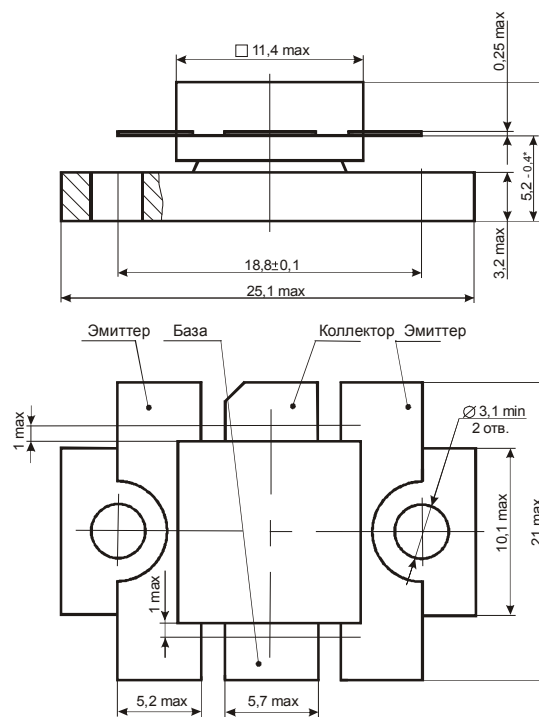
NPN SILICON RF POWER TRANSISTOR

Designed for operation in ultra - linear
Class A low and medium-power amplifiers
of TV transmitters (Band I – III)

- Output power = 30 W (PEP), $f = 225$ MHz, $V_{CC} = 28$ V
- Power gain = 7.5 dB (min)
- 3 Tone IMD = -53 dB (max)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	55	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	16	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	1.0	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	175	W



Case KT-56

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 30$ W PEP, $f = 225$ MHz)	G_P	7.5			dB
Intermodulation Distortion ⁽²⁾ ($V_{CC} = 28$ V, $P_{out} = 30$ W PEP, $f = 225$ MHz)	3 Tone IMD			-53	dB

NOTE: Three-tone test method (vision carrier: -8dB, sound carrier: -7dB, sideband carrier: -16dB)

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BLX96

SILICON NPN MICROWAVE POWER TRANSISTOR 0.5 W, in the 470 – 860 MHz Range

The silicon n-p-n transistor is designed for Class A Television Band IV- V Amplifier Applications Requiring High Linearity.

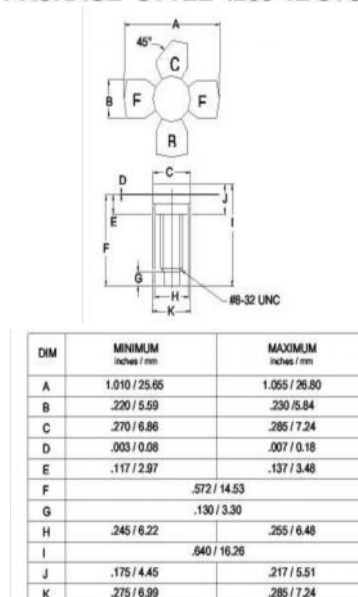
Features:

- Power Gain: 6 dB Min at 860 MHz
- Output Power: 0.5 W
- IMD₃: -60 dB Max at P_{REF} = 0.5 W

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Collector-Emitter Voltage	V _{CEO}	24	V _{DC}
Collector-Base Voltage	V _{CBO}	45	V _{DC}
Collector Current	I _C	1	A _{DC}
Operation Junction Temperature	T _j	-65 ÷ +200	°C
Storage Temperature Range	T _{STG}	-65 ÷ +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	11	°C/W
Total Power Dissipation, T _C = 25°C	P _D	16	W

PACKAGE STYLE .280 4L STUD



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (I _C = 40 mA, V _{BE} = 0 V)	V _{(BR)CEO}	24	—	—	V _{DC}
Collector–Base Breakdown Voltage (I _C = 2 mA)	V _{(BR)CBO}	45	—	—	V _{DC}
Emitter–Base Breakdown Voltage (I _E = 0.5 mA, I _C = 0 A)	V _{(BR)EBO}	3.5	—	—	V _{DC}
DC Current Gain (V _{CE} = 20 V, I _C = 250 mA)	h _{FE}	20	—	100	
Output Capacitance (V _{CB} = 20 V, I _E = 0 A, f = 1 MHz)	C _{OB}	—	—	10	pF
Power Gain (V _{CE} = 25 V, I _C = 250 mA, f = 860 MHz, P _{OUT} = 0.5 W, Vision = -8 dB, Sound = -7 dB, Chroma = -16 dB)	G _p	6	—	—	dB
Two-Tone Third-Order Intermodulation Distortion (V _{CE} = 25 V, I _C = 250 mA, f = 860 MHz, P _{OUT} = 0.5 W, Vision = -8 dB, Sound = -7 dB, Chroma = -16 dB)	IMD ₃	—	—	-60	dB

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KT9150A

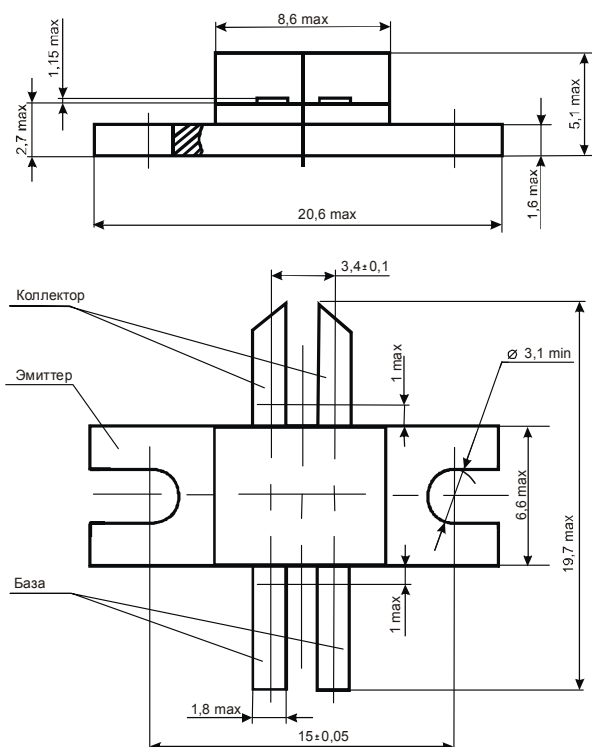
NPN SILICON RF POWER TRANSISTOR

Designed for operation in ultra - linear
Class A low and medium-power amplifiers
of TV transmitters (Band IV – V)

- Output power = 8 W (PEP), $f = 860$ MHz, $V_{CC} = 25$ V
- Power gain = 8 dB (min)
- 3 Tone IMD = -58 dB (max)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	40	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	5	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	2.5	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	70	W



Case KT-81

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 25$ V, $P_{out} = 8$ W PEP, $f = 860$ MHz)	G_P	8			dB
Intermodulation Distortion ⁽²⁾ ($V_{CC} = 25$ V, $P_{out} = 8$ W PEP, $f = 860$ MHz)	3 Tone IMD			-58	dB

NOTE: Three-tone test method (vision carrier: -8dB, sound carrier: -7dB, sideband carrier: -16dB)

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SILICON NPN MICROWAVE POWER TRANSISTOR

14 W, in the 470 – 860 MHz Range

- Power Gain: 8.5 dB Min
- Output Power: 14 W
- IMD_3 : -47 dB Max

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	V_{CEO}	25	V_{DC}
Collector–Base Voltage	V_{CBO}	45	V_{DC}
Collector Current	I_C	2x2.6	A_{DC}
Operation Junction Temperature	T_j	-50 ÷ +200	°C
Storage Temperature Range	T_{STG}	-50 ÷ +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	°C/W
Total Power Dissipation, $T_C = 25^\circ C$	P_D	65	W

Technical drawing of a collector-emitter assembly. The drawing includes a side view and a top view. The side view shows a central component with two circular features. Dimensions include 0.020 x 45°, 0.130 NOM, and 0.050 x 45°. Labels A, B, C, D, E, F, G, H, I, J, K, L, M are used to identify specific points and dimensions. The top view shows a rectangular base with dimensions J, K, L, M. Labels include 'Collector - 2 places', 'Emitter connected to flange', and 'Base - 2 places'.

DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A		.060 / 1.52
B	.055 / 1.40	.065 / 1.65
C		.125 / 3.18
D	.243 / 6.17	.255 / 6.48
E	.630 / 16.00	.670 / 17.01
F		.092 / 2.34
G	.555 / 14.10	.565 / 14.35
H	.739 / 18.77	.750 / 19.05
I	.315 / 8.00	.327 / 8.31
J	.062 / 0.05	.006 / 0.15
K	.055 / 1.40	.065 / 1.65
L	.075 / 1.91	.095 / 2.41
M		.190 / 4.83
N	.245 / 6.22	.257 / 6.53

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 40\text{ mA}$, $V_{BE} = 0\text{ V}$)	$V_{(BR)CEO}$	25	—	—	V_{DC}
Collector –Base Breakdown Voltage ($I_C = 20\text{ mA}$, $I_E = 0\text{ A}$)	$V_{(BR)CBO}$	45	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 5\text{ mA}$, $I_C = 0$)	$V_{(BR)EBO}$	3	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 20\text{ V}$)	I_{CBO}	—	—	5	mA
DC Current Gain ($V_{CE} = 20\text{ V}$, $I_C = 500\text{ mA}$)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 25\text{ V}$, $I_E = 0\text{ A}$, $f = 1\text{ MHz}$)	C_{OB}	—	—	20	pF
Power Gain ($V_{CE} = 25\text{ V}$, $I_C = 2 \times 900\text{ mA}$, $f = 860\text{ MHz}$, $P_{OUT} = 14\text{ W}$)	Gp	8.5	—	—	dB
Two-Tone Third-Order Intermodulation Distortion ($V_{CE} = 25\text{ V}$, $I_C = 2 \times 900\text{ mA}$, $f = 860\text{ MHz}$, $P_{OUT} = 14\text{ W}$, Vision = -8 dB. Sound = -7 dB. SB = -16 dB)	IMD ₃	—	—	-47	dB

Specification is subject to change without notice

KT9194A

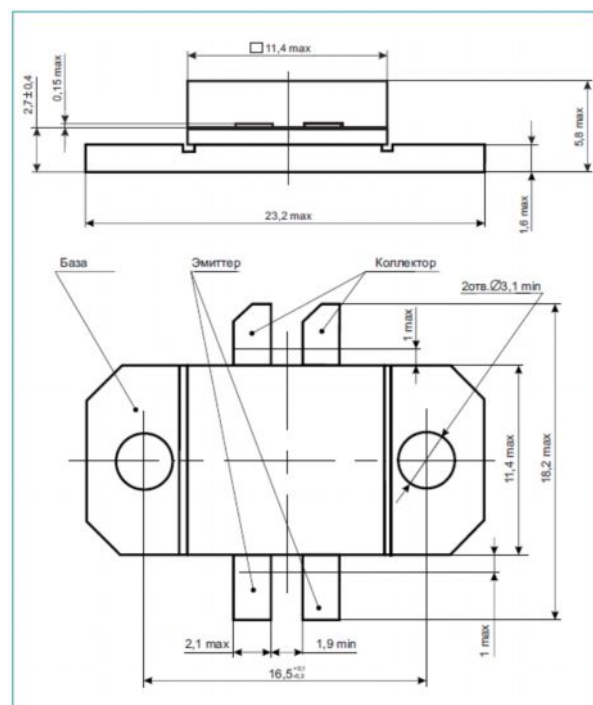
NPN SILICON RF POWER TRANSISTOR

Designed for operation in ultra - linear
Class A low and medium-power amplifiers
of TV transmitters (Band IV – V)

- Output power = 25 W (PEP), $f = 860$ MHz, $V_{CC} = 28$ V
- Power gain = 8 dB (min)
- 3 Tone IMD = -45 dB (max)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	50	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	15	A
Operating Junction Temperature	T_j	+200	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C
Thermal Resistance (junction to case)	$R_{\theta JC}$	1.7	°C/W
Total Power Dissipation, $T_C = 25$ °C	P_D	103	W



Case KT-44

FUNCTIONAL TESTS

Characteristics	Symbol	Value			Unit
		min	typ	max	
Common-Emitter Amplifier Power Gain ($V_{CC} = 28$ V, $P_{out} = 25$ W PEP, $f = 860$ MHz)	G_P	8			dB
Intermodulation Distortion ⁽²⁾ ($V_{CC} = 28$ V, $P_{out} = 25$ W PEP, $f = 860$ MHz)	3 Tone IMD			-45	dB

NOTE: Three-tone test method (vision carrier: -8dB, sound carrier: -7dB, sideband carrier: -16dB)

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SILICON NPN MICROWAVE POWER TRANSISTOR

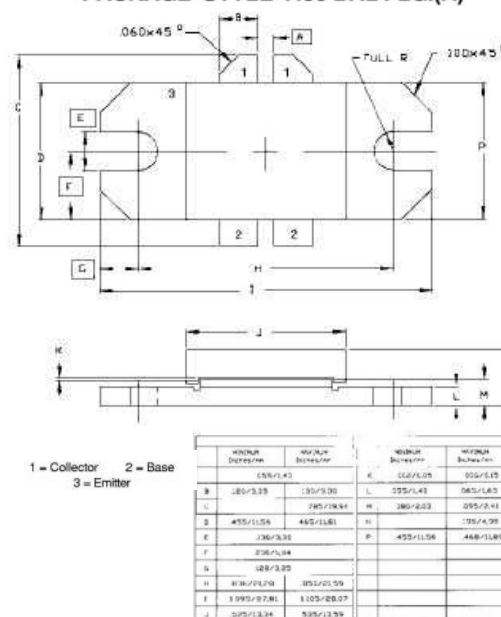
25 W, in the 470 – 860 MHz Range

Features:

- Power Gain: 8 dB Min
- Output Power: 25 W
- IMD₃: -45 dBc Max

Parameters	Sym	Value	Unit
Collector-Emitter Voltage	V_{CEO}	30	V_{DC}
Collector-Base Voltage	V_{CBO}	45	V_{DC}
Collector Current	I_C	8	A_{DC}
Operation Junction Temperature	T_J	$-55 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-55 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.15	$^{\circ}C/W$
Total Power Dissipation, $T_C = 25^{\circ}C$	P_D	155	W

PACKAGE STYLE .450 BAL FLG.(A)



Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ($I_C = 200\text{ mA}$, $V_{BE} = 0\text{ V}$)	$V_{(BR)CEO}$	30	—	—	V_{DC}
Collector–Base Breakdown Voltage ($I_C = 50\text{ mA}$)	$V_{(BR)CBO}$	45	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10\text{ mA}$, $I_C = 0\text{ A}$)	$V_{(BR)EBO}$	3	—	—	V_{DC}
Collector–Base Leakage Current ($V_{CB} = 20\text{ V}$)	I_{CBO}	—	—	10	mA
DC Current Gain ($V_{CE} = 5\text{ V}$, $I_C = 3\text{ A}$)	h_{FE}	10	—	100	
Output Capacitance ($V_{CB} = 28\text{ V}$, $I_E = 0\text{ A}$, $f = 1\text{ MHz}$)	C_{OB}	—	72	—	pF
Power Gain ($V_{CE} = 26.5\text{ V}$, $I_C = 2 \times 1.6\text{ A}$, $f = 860\text{ MHz}$, $P_{OUT} = 25\text{ W}$)	Gp	8	—	—	dB
Two-Tone Third-Order Intermodulation Distortion ($V_{CE} = 26.5\text{ V}$, $P_{OUT} = 25\text{ W}$, $f = 860\text{ MHz}$, Vision = -8 dB, Sound = -10 dB, Chroma = -16 dB)	IMD ₃	—	—	-45	dBc

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SILICON MOS N-CHANNEL MICROWAVE POWER TRANSISTOR

5 W, up to 175 MHz, Enhancement Mode

BLF242

The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

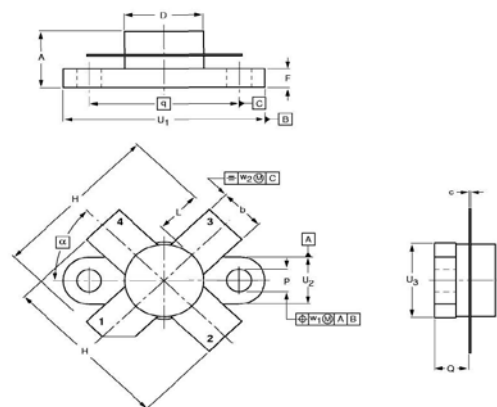
Features:

- Power Gain: 13 dB Min
- Output Power: 5 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	1	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	11	$^{\circ}C/W$
Total Power Dissipation	P_D	16	W

SOT123A



PINNING - SOT123

PIN	DESCRIPTION
1	drain
2	source
3	gate
4	source

DIMENSIONS (millimetre dimensions are derived from the original inch dimensions)

UNIT	A	b	c	D	D ₁	F	H	L	p	Q	q	U ₁	U ₂	U ₃	w ₁	w ₂	α
mm	7.47	5.82	0.18	9.73	9.63	2.72	20.71	5.61	3.33	4.63	18.42	25.15	6.61	9.78	0.51	1.02	45°
	6.37	5.56	0.10	9.47	9.42	2.31	19.93	5.16	3.04	4.11		24.38	6.09	9.39			
inches	0.294	0.229	0.007	0.383	0.397	0.107	0.815	0.221	0.131	0.182	0.725	0.99	0.26	0.385	0.02	0.04	
	0.251	0.219	0.004	0.373	0.371	0.091	0.785	0.203	0.120	0.162		0.96	0.24	0.370			

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=0.1$ mA, $V_{GS}=0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	10	μA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 3$ mA)	$V_{GS(TH)}$	2	—	4.5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.3$ A)	G_{FS}	0.16	0.24	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{ISS}	—	13	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{OSS}	—	9.4	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{RSS}	—	1.7	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 10$ mA, $f = 175$ MHz)	G_p	13	16	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 10$ mA, $f = 175$ MHz)	η_D	50	60	—	%

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Specification are subject to change without notice

BLF244

SILICON MOS N-CHANNEL POWER TRANSISTOR 15 W, up to 175 MHz, Enhancement Mode

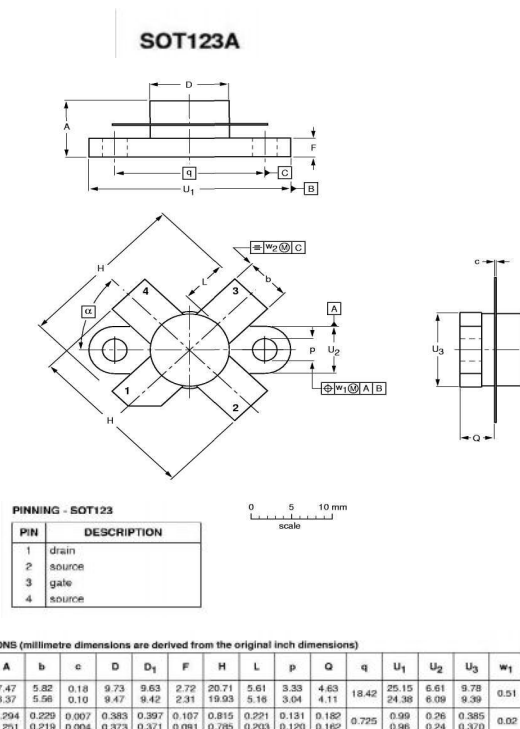
The silicon MOS transistor designed for large signal amplifier applications in the VHF frequency range.

Features:

- Power Gain: 13 dB Min
- Output Power: 15 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	3	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4.6	$^{\circ}C/W$
Total Power Dissipation	P_D	38	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=5\text{ mA}$, $V_{GS}=0\text{ V}$)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20\text{ V}$, $V_{DS}=0\text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$)	I_{DSS}	—	—	1	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10\text{ V}$, $I_D = 5\text{ mA}$)	$V_{GS(TH)}$	2	—	4.5	mV_{DC}
Forward Transconductance ($V_{DS} = 10\text{ V}$, $I_D = 0.75\text{ A}$)	G_{FS}	0.6	—	—	mhos
Input Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{ISS}	—	60	—	pF
Output Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{OSS}	—	40	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{RSS}	—	4.5	—	pF
Power Gain ($V_{DS} = 28\text{ V}$, $P_{OUT} = 15\text{ W}$, $I_{DQ} = 25\text{ mA}$, $f = 175\text{ MHz}$)	G_p	13	17	—	dB
Drain Efficiency ($V_{DS} = 28\text{ V}$, $P_{OUT} = 15\text{ W}$, $I_{DQ} = 25\text{ mA}$, $f = 175\text{ MHz}$)	η_D	50	65	—	%

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Specification is subject to change without notice

BLF245

SILICON MOS N-CHANNEL POWER TRANSISTOR 30 W, up to 175 MHz, Enhancement Mode

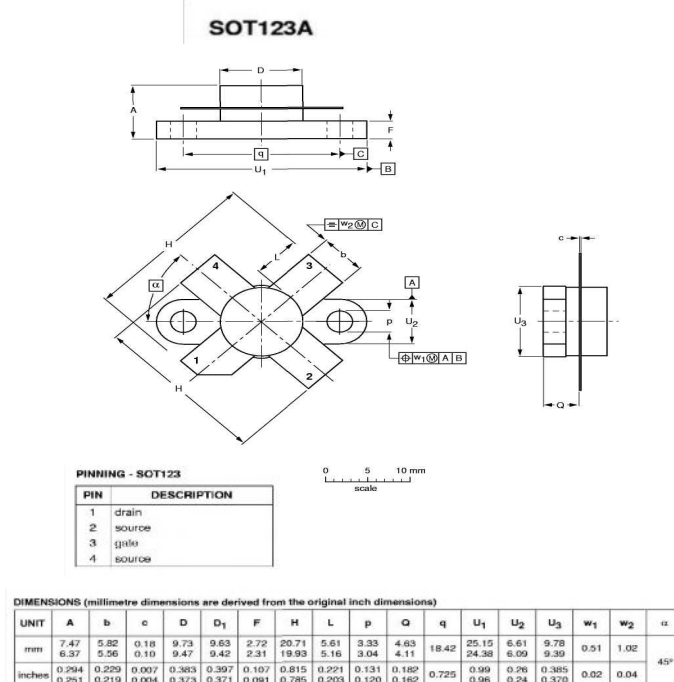
The silicon MOS transistor designed for large signal amplifier applications in the VHF frequency range.

Features:

- Power Gain: 13 dB Min
- Output Power: 30 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	6	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.6	$^{\circ}C/W$
Total Power Dissipation	P_D	68	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=10\text{ mA}$, $V_{GS}=0\text{ V}$)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20\text{ V}$, $V_{DS}=0\text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$)	I_{DSS}	—	—	2	mA_{DC}
Gate Threshold Voltage ($V_{DS}=10\text{ V}$, $I_D=10\text{ mA}$)	$V_{GS(TH)}$	2	—	4.5	V_{DC}
Forward Transconductance ($V_{DS}=10\text{ V}$, $I_D=1.5\text{ A}$)	G_{FS}	1.2	1.9	—	mhos
Input Capacitance ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{ISS}	—	125	—	pF
Output Capacitance ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{OSS}	—	75	—	pF
Reverse Transfer Capacitance ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{RSS}	—	7	—	pF
Power Gain ($V_{DS}=28\text{ V}$, $P_{OUT}=30\text{ W}$, $I_{DQ}=50\text{ mA}$, $f=175\text{ MHz}$)	G_p	13	15.5	—	dB
Drain Efficiency ($V_{DS}=28\text{ V}$, $P_{OUT}=30\text{ W}$, $I_{DQ}=50\text{ mA}$, $f=175\text{ MHz}$)	η_D	50	67	—	%

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SILICON MOS N-CHANNEL POWER TRANSISTOR 300 W, up to 225 MHz, Enhancement Mode

BLF248

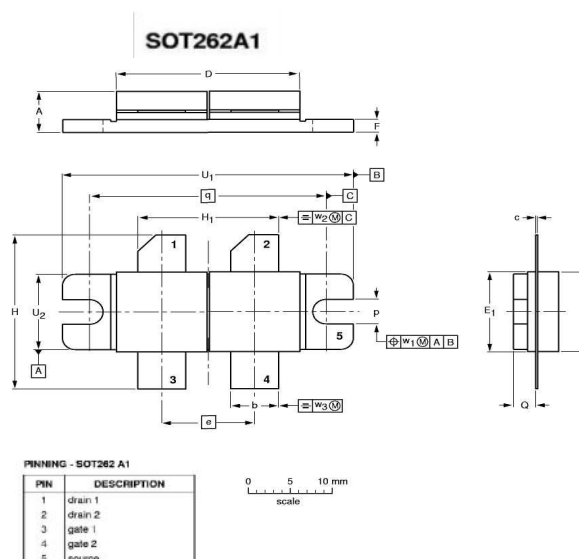
The silicon MOS push pull transistor designed for large signal amplifier applications in the VHF frequency range.

Features:

- Power Gain: 10 dB Min
- Output Power: 300 W
- Efficiency: 55 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	25	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.35	$^{\circ}C/W$
Total Power Dissipation	P_D	500	W



PINNING - SOT262 A1

PIN	DESCRIPTION
1	drain 1
2	drain 2
3	gate 1
4	gate 2
5	source

DIMENSIONS (millimetre dimensions are derived from the original inch dimensions)

DIMENSIONS (millimetre dimensions are derived from the original inch dimensions)																			
UNIT	A	b	c	D	e	E	E ₁	F	H	H ₁	p	Q	q	U ₁	U ₂	w ₁	w ₂	w ₃	
mm	5.77	5.85	0.16	21.98	11.05	10.27	10.29	1.78	20.58	17.02	3.28	2.85	2.59	27.94	34.17	9.91	0.51	1.02	0.25
	5.00	5.58	0.10	21.71		10.05	10.03	1.52	20.00	16.51	3.02	2.59							
inches	0.227	0.230	0.006	0.865	0.435	0.404	0.403	0.070	0.81	0.67	0.129	0.112	0.102	1.100	1.345	0.390	0.02	0.04	0.01

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=100$ mA, $V_{GS}=0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	5	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	2	—	4.5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 8$ A)	G_{FS}	5	7.5	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{ISS}	—	500	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{OSS}	—	360	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{RSS}	—	46	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 300$ W, $I_{DQ} = 2 \times 250$ mA, $f = 225$ MHz)	G_p	10	11.5	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 300$ W, $I_{DQ} = 2 \times 250$ mA, $f = 225$ MHz)	η_D	55	65	—	%

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR

5 W, up to 150 MHz, Enhancement Mode

MRF134

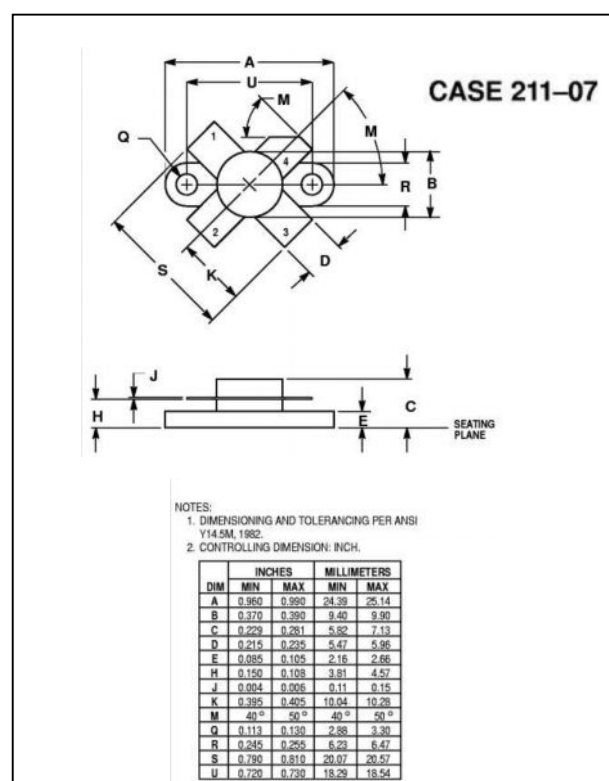
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Power Gain: 13 dB Min
- Output Power: 5 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	1	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	11	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	17.5	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	1.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 3$ mA)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.3$ A)	G_{FS}	0.08	0.11	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	7.0	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	9.7	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	2.3	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 50$ mA, $f = 150$ MHz)	G_p	11	14	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 50$ mA, $f = 150$ MHz)	η_D	50	55	—	%

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SILICON MOS N-CHANNEL POWER TRANSISTOR **15 W, up to 400 MHz, Enhancement Mode**

MRF136

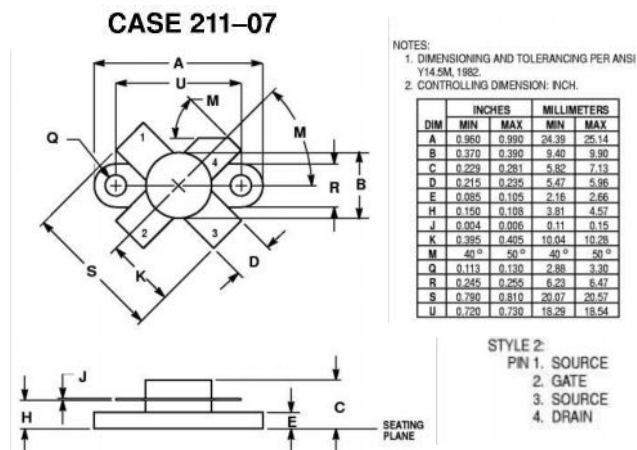
The silicon MOS transistor is designed for Wideband Large Signal Amplifier Applications up to 400 MHz.

Features:

- Power Gain: 12 dB Min
- Output Power: 15 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	2.5	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.6	$^{\circ}C/W$
Total Power Dissipation	P_D	50	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS} = 5 \text{ mA}$, $V_{GS} = 0 \text{ V}$)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 40 \text{ V}$, $V_{DS} = 0 \text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$)	I_{DSS}	—	—	2	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10 \text{ V}$, $I_D = 25 \text{ mA}$)	$V_{GS(TH)}$	1	3	6	V_{DC}
Forward Transconductance ($V_{DS} = 10 \text{ V}$, $I_D = 250 \text{ mA}$)	G_{FS}	250	400	—	mmhos
Input Capacitance ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{ISS}	—	24	—	pF
Output Capacitance ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{OSS}	—	—	25	pF
Reverse Transfer Capacitance ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{RSS}	—	5.5	—	pF
Power Gain ($V_{DS} = 28 \text{ V}$, $P_{OUT} = 15 \text{ W}$, $I_{DQ} = 25 \text{ mA}$, $f = 150 \text{ MHz}$)	G_p	12	16	—	dB
Drain Efficiency ($V_{DS} = 28 \text{ V}$, $P_{OUT} = 15 \text{ W}$, $I_{DQ} = 25 \text{ mA}$, $f = 150 \text{ MHz}$)	η_D	50	60	—	%

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Specification is subject to change without notice

MRF137

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 30 W, up to 150 MHz, Enhancement Mode

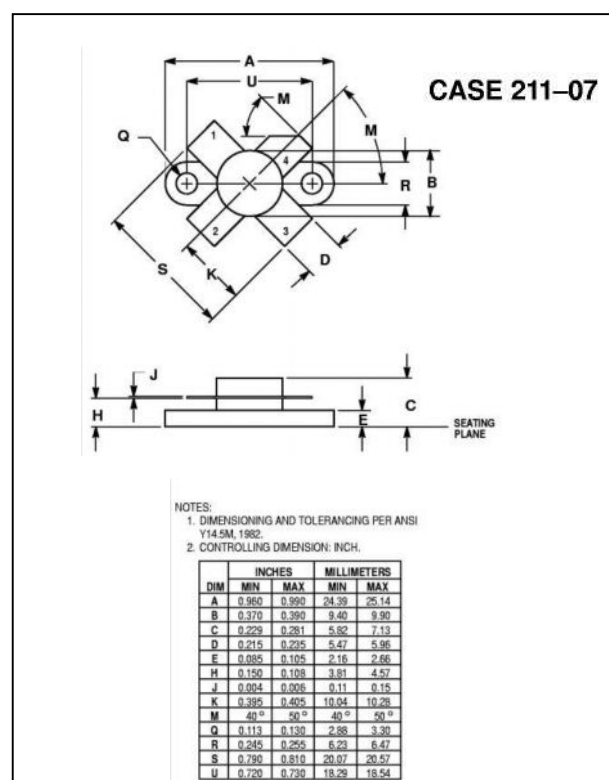
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Power Gain: 16 dB typ
- Output Power: 30 W
- Efficiency: 60 % typ

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	5	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.75	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	100	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 10.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	4.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 25$ mA)	$V_{GS(TH)}$	1	—	6	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.5$ A)	G_{FS}	0.5	0.75	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	48	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	54	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	11	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 25$ mA, $f = 150$ MHz)	G_p	13	16	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 25$ mA, $f = 150$ MHz)	η_D	50	60	—	%

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Specification is subject to change without notice

MRF173

SILICON MOS N-CHANNEL POWER TRANSISTOR 80 W, up to 200 MHz, Enhancement Mode

The silicon MOS transistor designed for broadband commercial and military applications at frequencies up to 200 MHz. The high power, high gain and broadband performance of this device makes possible solid state transmitters for FM broadcast or TV channel frequency bands.

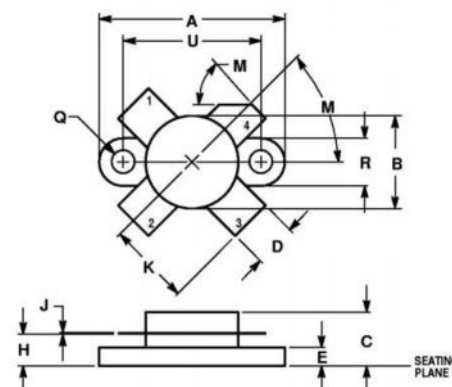
Features (at 150 MHz):

- Power Gain: 11 dB Min
- Output Power: 80 W
- Efficiency: 55% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	9	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.8	$^{\circ}C/W$
Total Power Dissipation	P_D	220	W

CASE 211-11



STYLE 2:
PIN 1. SOURCE
2. GATE
3. SOURCE
4. DRAIN

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.960	0.990	24.39	25.14
B	0.465	0.510	11.82	12.95
C	0.229	0.275	5.82	6.98
D	0.216	0.235	5.49	5.96
E	0.084	0.110	2.14	2.79
H	0.144	0.178	3.66	4.52
J	0.003	0.007	0.08	0.17
K	0.435	—	11.05	—
M	45°NOM	—	45°NOM	—
Q	0.115	0.130	2.93	3.30
R	0.246	0.255	6.25	6.47
U	0.720	0.730	18.29	18.54

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=50$ mA, $V_{GS}=0$ V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=40$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	2	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 50$ mA)	$V_{GS(TH)}$	1	3	6	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 2$ A)	G_{FS}	1.8	2.2	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{ISS}	—	110	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{OSS}	—	105	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{RSS}	—	10	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 80$ W, $I_{DQ} = 50$ mA, $f = 150$ MHz)	G_p	11	13	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 80$ W, $I_{DQ} = 50$ mA, $f = 150$ MHz)	η_D	55	60	—	%

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Specification is subject to change without notice

SILICON MOS N-CHANNEL RF POWER TRANSISTOR **150 W, up to 30 MHz, Enhancement Mode**

MRF141

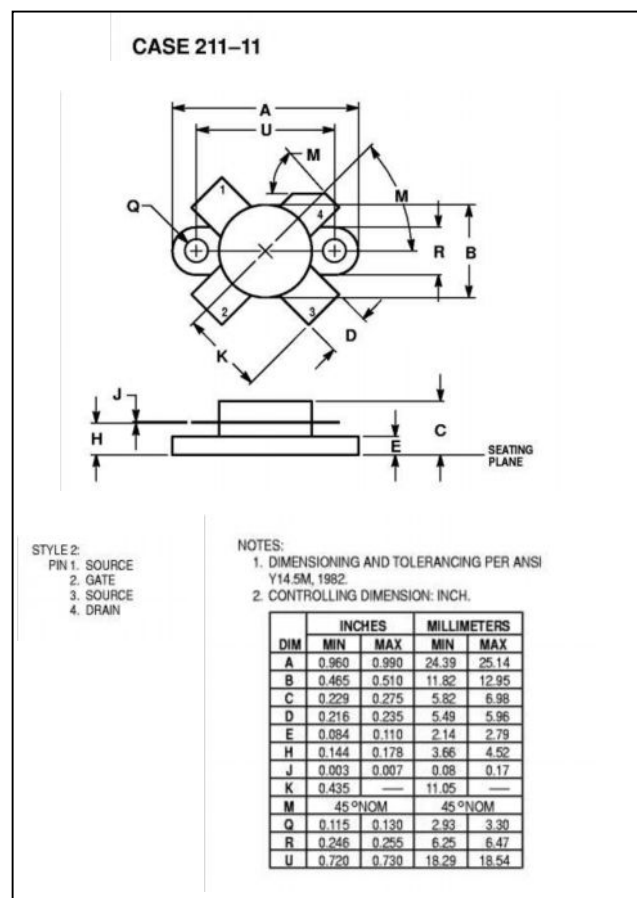
The silicon MOS transistor is designed for professional transmitter applications in the HF frequency range.

- Guaranteed Performance at 30 MHz, 28 V:
- Power Gain 20 dB typ
- Output Power: 150 W
- Efficiency: 45 % typ

Typical Performance at 175 MHz, 28 V:
Output Power — 150 W
Gain — 13 dB

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	16	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 tu +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.6	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	300	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 100.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	5.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	1.0	—	5.0	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 5.0$ A)	G_{FS}	5.0	7.0	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	450	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	320	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	35	—	pF
Power Gain ($f = 30$; 30.001 MHz, $V_{DD} = 28$ V, $P_{OUT} = 150$ W (PEP), $I_{DQ} = 250$ mA)	G_p	13	16	—	dB
Drain Efficiency ($f = 30$; 30.001 MHz, $V_{DD} = 28$ V, $P_{OUT} = 150$ W (PEP), $I_{DQ} = 250$ mA, $I_{DQ} = 250$ mA)	η_D	50	60	—	%
Intermodulation Distortion ($V_{DD} = 28$ V, $P_{out} = 150$ W (PEP), $f_1 = 30$ MHz, $f_2 = 30.001$ MHz, $I_{DQ} = 250$ mA)	IMD	—	-30	—	dB

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR **150 W, up to 30 MHz, Enhancement Mode**

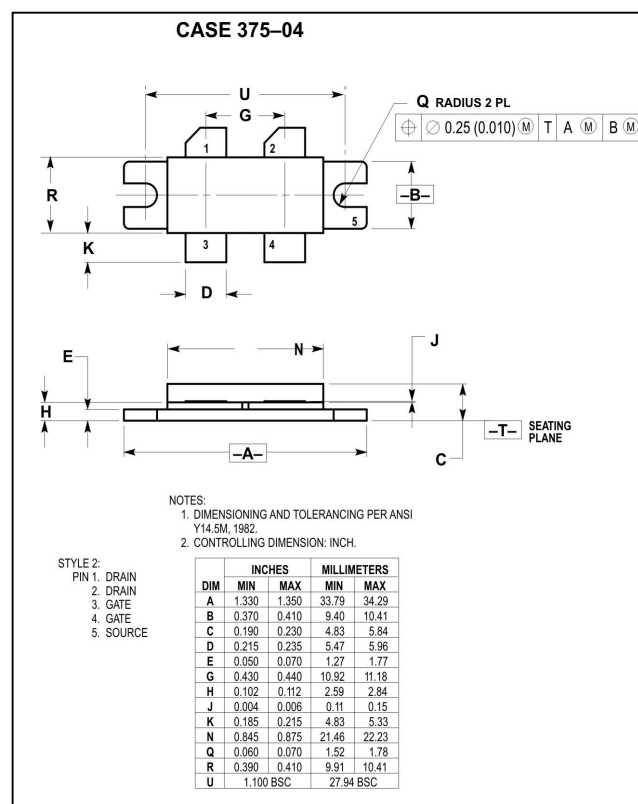
MRF141G

The silicon MOS transistor is designed for professional transmitter applications in the HF frequency range.

- Guaranteed Performance at 175 MHz, 28 V:
- Output Power: 150 W
- Power Gain 12 dB
- Efficiency: 45 %

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	16	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.35	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	500	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 100.0 \text{ mA}$, $V_{GS} = 0 \text{ V}$)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20 \text{ V}$, $V_{DS} = 0 \text{ V}$)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$)	I_{DSS}	—	—	5.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10 \text{ V}$, $I_D = 100 \text{ mA}$)	$V_{GS(TH)}$	1.0	—	5.0	V_{DC}
Forward Transconductance ($V_{DS} = 10 \text{ V}$, $I_D = 5.0 \text{ A}$)	G_{FS}	5.0	7.0	—	mhos
Input Capacitance ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{ISS}	—	450	—	pF
Output Capacitance ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{OSS}	—	320	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{RSS}	—	35	—	pF
Power Gain ($f = 175 \text{ MHz}$, $V_{DD} = 28 \text{ V}$, $P_{OUT} = 300 \text{ W}$, $I_{DQ} = 500 \text{ mA}$)	G_p	12	14	—	dB
Drain Efficiency ($f = 175 \text{ MHz}$, $V_{DD} = 28 \text{ V}$, $P_{OUT} = 300 \text{ W}$, $I_{DQ} = 500 \text{ mA}$)	η_D	45	55	—	%

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KP821A

SILICON MOS N-CHANNEL POWER TRANSISTOR 5 W, up to 175 MHz, Enhancement Mode

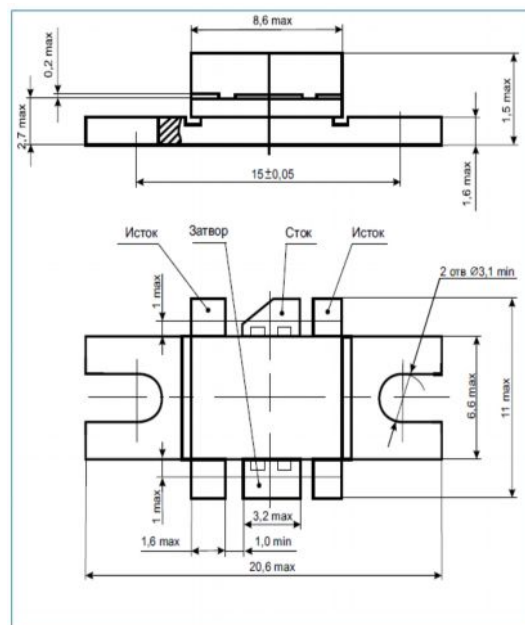
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Power Gain: 19 dB Min
- Output Power: 5 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	1.5	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7	$^{\circ}C/W$
Total Power Dissipation	P_D	25	W



Case KT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=10\text{ mA}$, $V_{GS}=0\text{ V}$)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20\text{ V}$, $V_{DS}=0\text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$)	I_{DSS}	—	—	2	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10\text{ V}$, $I_D = 50\text{ mA}$)	$V_{GS(TH)}$	2	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10\text{ V}$, $I_D = 0.3\text{ A}$)	G_{FS}	0.16	0.26	—	mhos
Input Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{ISS}	—	16	—	pF
Output Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{OSS}	—	14	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{RSS}	—	1.8	—	pF
Power Gain ($V_{DS} = 28\text{ V}$, $P_{OUT} = 5\text{ W}$, $I_{DQ} = 50\text{ mA}$, $f = 175\text{ MHz}$)	G_p	19	20	—	dB
Drain Efficiency ($V_{DS} = 28\text{ V}$, $P_{OUT} = 5\text{ W}$, $I_{DQ} = 50\text{ mA}$, $f = 175\text{ MHz}$)	η_D	50	60	—	%

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KP821B

SILICON MOS N-CHANNEL POWER TRANSISTOR 30 W, up to 175 MHz, Enhancement Mode

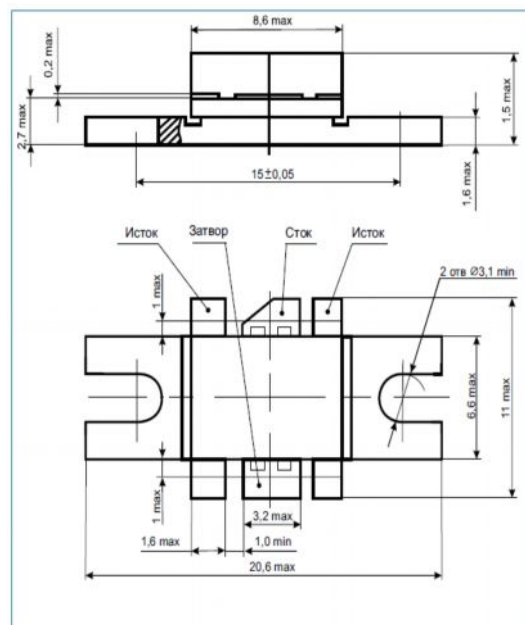
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Power Gain: 16 dB Min
- Output Power: 30 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	6	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.6	$^{\circ}C/W$
Total Power Dissipation	P_D	67	W



Case KT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=20\text{ mA}$, $V_{GS}=0\text{ V}$)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20\text{ V}$, $V_{DS}=0\text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$)	I_{DSS}	—	—	6	mA_{DC}
Gate Threshold Voltage ($V_{DS}=10\text{ V}$, $I_D=50\text{ mA}$)	$V_{GS(TH)}$	2	—	5	V_{DC}
Forward Transconductance ($V_{DS}=10\text{ V}$, $I_D=1.5\text{ A}$)	G_{FS}	1.2	1.7	—	mhos
Input Capacitance ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{ISS}	—	83	—	pF
Output Capacitance ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{OSS}	—	62	—	pF
Reverse Transfer Capacitance ($V_{DS}=28\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{RSS}	—	8	—	pF
Power Gain ($V_{DS}=28\text{ V}$, $P_{OUT}=30\text{ W}$, $I_{DQ}=50\text{ mA}$, $f=175\text{ MHz}$)	G_p	16	18	—	dB
Drain Efficiency ($V_{DS}=28\text{ V}$, $P_{OUT}=30\text{ W}$, $I_{DQ}=50\text{ mA}$, $f=175\text{ MHz}$)	η_D	50	60	—	%

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KP979A

SILICON MOS N-CHANNEL POWER TRANSISTOR

60 W, up to 230 MHz, Enhancement Mode

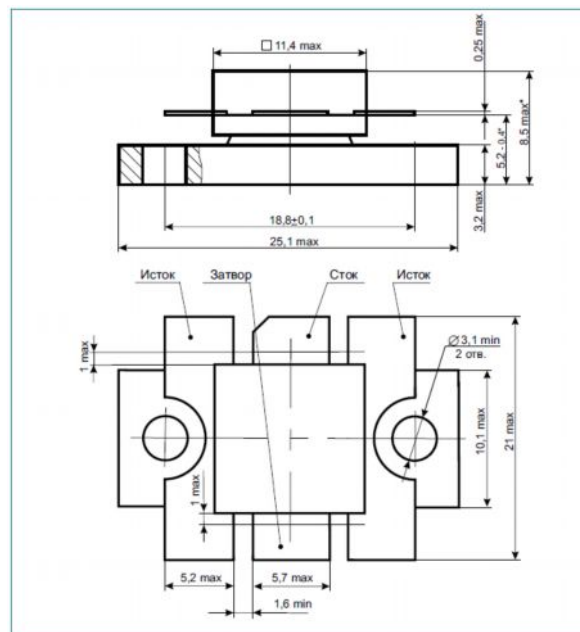
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Performance at 230 MHz, 28 Vdc
- Power Gain: 14 dB Min
- Output Power: 60 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V _{DSS}	65	V _{DC}
Drain Current-Continuous	I _D	6	A _{DC}
Gate-Source Voltage	V _{GS}	±20	V _{DC}
Operation Junction Temperature	T _J	-65 ÷ +200	°C
Storage Temperature Range	T _{STG}	-65 ÷ +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	1.45	°C/W
Total Power Dissipation	P _D	120	W



Case KT-56

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=20\text{ mA}$, $V_{GS}=0\text{ V}$)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20\text{ V}$, $V_{DS}=0\text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$)	I_{DSS}	—	—	6	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10\text{ V}$, $I_D = 50mA$)	$V_{GS(TH)}$	2	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10\text{ V}$, $I_D = 3\text{ A}$)	G_{FS}	2	2.2	—	mhos
Input Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{ISS}	—	100	—	pF
Output Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{OSS}	—	90	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{RSS}	—	9	—	pF
Power Gain ($V_{DS} = 28\text{ V}$, $P_{OUT} = 60\text{ W}$, $I_{DQ.} = 100\text{ mA}$, $f = 230\text{ MHz}$)	G_p	14	15	—	dB
Drain Efficiency ($V_{DS} = 28\text{ V}$, $P_{OUT} = 60\text{ W}$, $I_{DQ.} = 100\text{ mA}$, $f = 230\text{ MHz}$)	η_D	50	60	—	%

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KP979B

SILICON MOS N-CHANNEL POWER TRANSISTOR 150 W, up to 230 MHz, Enhancement Mode

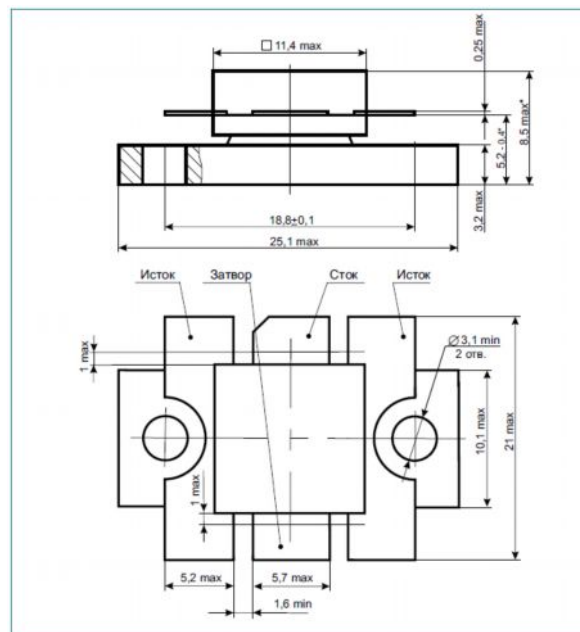
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Performance at 230 MHz, 28 Vdc
- Power Gain: 13 dB Min
- Output Power: 150 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	17	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.85	$^{\circ}C/W$
Total Power Dissipation	P_D	206	W



Case KT-56

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=20\text{ mA}$, $V_{GS}=0\text{ V}$)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20\text{ V}$, $V_{DS}=0\text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$)	I_{DSS}	—	—	10	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10\text{ V}$, $I_D = 50\text{ mA}$)	$V_{GS(TH)}$	2	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10\text{ V}$, $I_D = 5\text{ A}$)	G_{FS}	2.9	3.2	—	mhos
Input Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{ISS}	—	220	—	pF
Output Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{OSS}	—	190	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28\text{ V}$, $V_{GS}=0\text{ V}$, $f = 1\text{ MHz}$)	C_{RSS}	—	20	—	pF
Power Gain ($V_{DS} = 28\text{ V}$, $P_{OUT} = 150\text{ W}$, $I_{DQ.} = 100\text{ mA}$, $f = 230\text{ MHz}$)	G_p	13	15	—	dB
Drain Efficiency ($V_{DS} = 28\text{ V}$, $P_{OUT} = 150\text{ W}$, $I_{DQ.} = 100\text{ mA}$, $f = 230\text{ MHz}$)	η_D	50	60	—	%

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SILICON MOS N-CHANNEL POWER TRANSISTOR 300 W, up to 230 MHz, Enhancement Mode

KP819AC

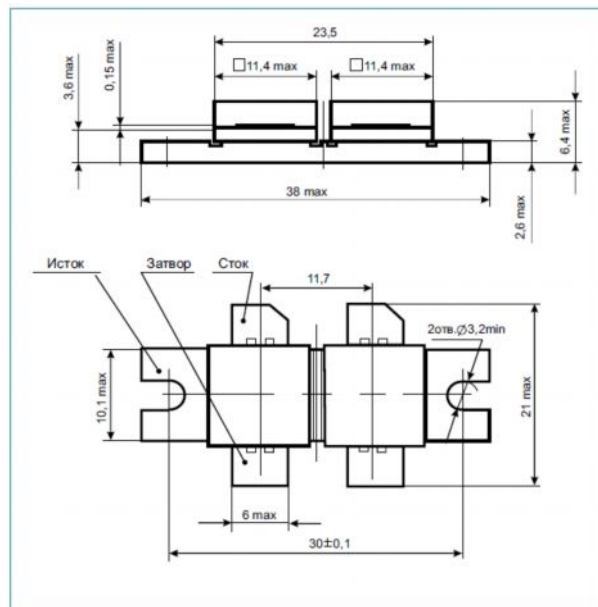
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Performance at 230 MHz, 28 Vdc
- Power Gain: 10 dB Min
- Output Power: 300 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V _{DC}
Drain Current-Continuous	I_D	40	A _{DC}
Gate-Source Voltage	V_{GS}	±20	V _{DC}
Operation Junction Temperature	T_j	-65 ÷ +200	°C
Storage Temperature Range	T_{STG}	-65 ÷ +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.4	°C/W
Total Power Dissipation	P_D	438	W



Case KT-82

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=50$ mA, $V_{GS}=0$ V)	$V_{(BR)DSS}$	65	—	—	V _{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1	μA _{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	20	mA _{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	2	—	5	V _{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 5$ A) (1)	G_{FS}	4	5	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	530	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	310	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	35	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 300$ W, $I_{DQ.} = 100$ mA, $f = 230$ MHz)	G_p	10	11.5	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 300$ W, $I_{DQ.} = 100$ mA, $f = 230$ MHz)	η_D	50	60	—	%

(1) Each transistor chip measured separately.

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BLF278

SILICON MOS N-CHANNEL POWER TRANSISTOR 250 W, up to 225 MHz, Enhancement Mode

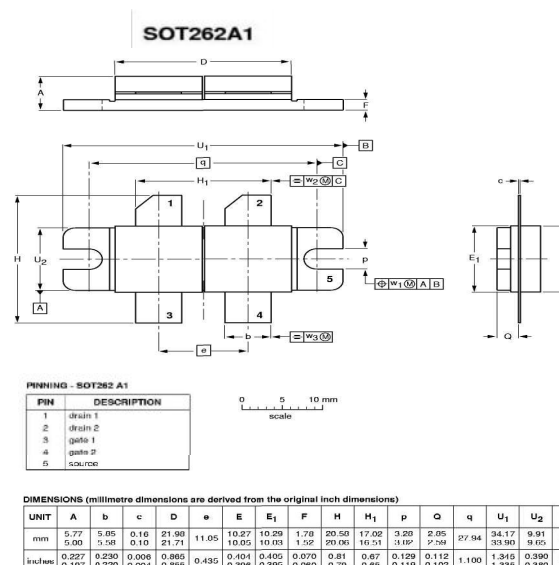
The silicon MOS push pull transistor designed for 225 MHz, 250 W Transmitter and Amplifier Applications.

Features:

- Power Gain: 14 dB Min
- Output Power: 250 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	125	V_{DC}
Drain Current-Continuous	I_D	40	A_{DC}
Gate-source Voltage	V_{GS}	± 40	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.35	$^{\circ}C/W$
Total Power Dissipation	P_D	500	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=100$ mA, $V_{GS}=0$ V)	$V_{(BR)DS}$	125	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	5	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 5$ A)	G_{FS}	5	—	—	mhos
Input Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{ISS}	—	350	—	pF
Output Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{OSS}	—	250	—	pF
Reverse Transfer Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{RSS}	—	15	—	pF
Power Gain ($V_{DS} = 50$ V, $P_{OUT} = 250$ W, $I_{DQ} = 2 \times 0.5$ A, $f = 225$ MHz)	G_p	14	16	—	dB
Drain Efficiency ($V_{DS} = 50$ V, $P_{OUT} = 250$ W, $I_{DQ} = 2 \times 0.5$ A, $f = 225$ MHz)	η_D	50	55	—	%

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MRF148A

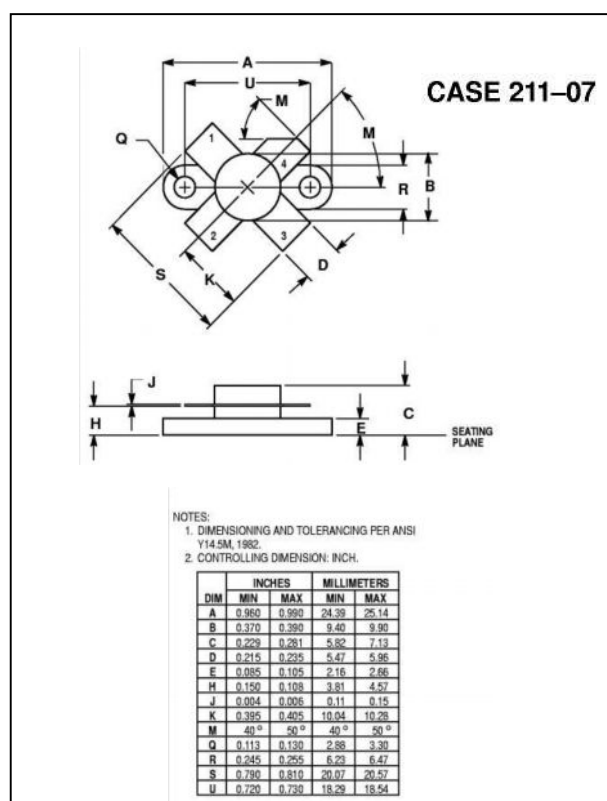
SILICON MOS N-CHANNEL RF POWER TRANSISTOR 30 W, up to 30 MHz, Enhancement Mode

The silicon MOS transistor is designed for professional transmitter applications in the VHF frequency range.

- Guaranteed Performance at 30 MHz, 50 V:
- Power Gain 18 dB typ
- Output Power: 30 W PEP
- Efficiency: 40 % typ

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	125	V_{DC}
Drain Current-Continuous	I_D	6	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.52	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	115	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 10$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	125	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	1.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 10$ mA)	$V_{GS(TH)}$	1.0	—	5.0	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 2.5$ A)	G_{FS}	0.8	1.2	—	mhos
Input Capacitance ($V_{DS} = 50$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	62	—	pF
Output Capacitance ($V_{DS} = 50$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	35	—	pF
Reverse Transfer Capacitance ($V_{DS} = 50$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	3.0	—	pF
Power Gain ($V_{DD} = 50$ V, $P_{out} = 30$ W (PEP), $IDQ = 100$ mA)	G_p	—	18 15	—	dB
Drain Efficiency ($V_{DD} = 50$ V, $f = 30$ MHz, $IDQ = 100$ mA)	η_D	—	40 50	—	%
Intermodulation Distortion ($V_{DD} = 50$ V, $P_{out} = 30$ W (PEP), $f_1 = 30$ MHz, $f_2 = 30.001$ MHz, $IDQ = 100$ mA)	IMD	—	-35	—	dB

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR

150 W, up to 30 MHz, Enhancement Mode

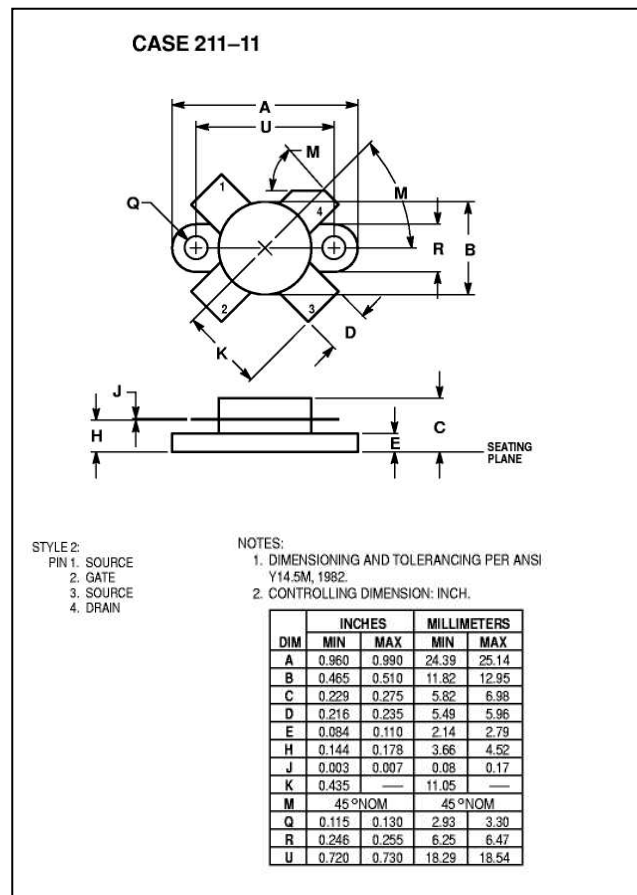
MRF150

The silicon MOS transistor is designed for professional transmitter applications in the HF frequency range.

- Guaranteed Performance at 30 MHz, 50 V:
- Power Gain 17 dB typ
- Output Power: 150 W
- Efficiency: 45 % typ

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	125	V_{DC}
Drain Current-Continuous	I_D	16	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 tu +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.6	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	300	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 100.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	125	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	5.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	1.0	—	5.0	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 5.0$ A)	G_{FS}	4.0	7.0	—	mhos
Input Capacitance ($V_{DS} = 50$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	400	—	pF
Output Capacitance ($V_{DS} = 50$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	240	—	pF
Reverse Transfer Capacitance ($V_{DS} = 50$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	40	—	pF
Power Gain ($f = 30$ MHz, $V_{DD} = 50$ V, $P_{OUT} = 150$ W(PEP), $I_{DQ} = 250$ mA)	G_p	—	17	—	dB
Drain Efficiency ($f = 30$; 30.001 MHz, $V_{DD} = 50$ V, $P_{OUT} = 150$ W(PEP), $I_{DQ} = 250$ mA)	η_D	—	45	—	%
Intermodulation Distortion ($V_{DD} = 50$ V, $P_{out} = 150$ W (PEP), $f_1 = 30$ MHz, $f_2 = 30.001$ MHz, $I_{DQ} = 250$ mA)	IMD	—	-32	—	dB

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MRF151

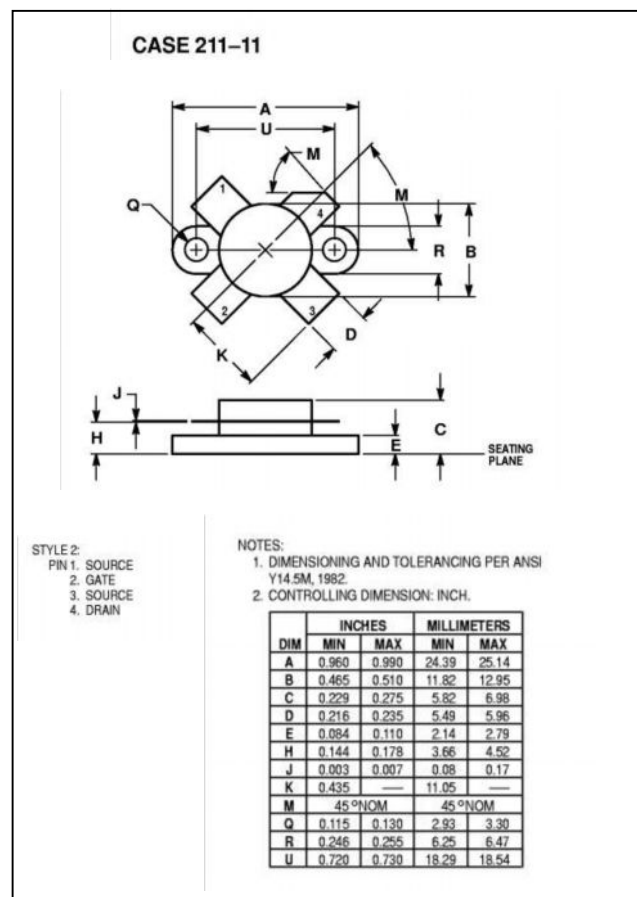
SILICON MOS N-CHANNEL RF POWER TRANSISTOR 150 W, up to 175 MHz, Enhancement Mode

The silicon MOS transistor is designed for professional transmitter applications in the HF frequency range.

- Guaranteed Performance at 30 MHz, 50 V:
- Power Gain 22 dB typ
- Output Power: 150 W
- Efficiency: 40 % typ
- Guaranteed Performance at 175 MHz, 50 V:
- Power Gain 13 dB typ
- Output Power: 150 W

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	125	V_{DC}
Drain Current-Continuous	I_D	16	A _{DC}
Gate-Source Voltage	V_{GS}	±40	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.6	°C/W
Total Power Dissipation @ $T_C=25^\circ\text{C}$	P_D	300	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D=100.0\text{ mA}$, $V_{GS}=0\text{ V}$)	$V_{(BR)DSS}$	125	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20\text{ V}$, $V_{DS}=0\text{ V}$)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS}=50\text{ V}$, $V_{GS}=0\text{ V}$)	I_{DSS}	—	—	5.0	mA_{DC}
Gate Threshold Voltage ($V_{DS}=10\text{ V}$, $I_D=100\text{ mA}$)	$V_{GS(TH)}$	1.0	—	5.0	V_{DC}
Forward Transconductance ($V_{DS}=10\text{ V}$, $I_D=5.0\text{ A}$)	G_{FS}	5.0	7.0	—	mhos
Input Capacitance ($V_{DS}=50\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{ISS}	—	350	—	pF
Output Capacitance ($V_{DS}=50\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{OSS}	—	220	—	pF
Reverse Transfer Capacitance ($V_{DS}=50\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$)	C_{RSS}	—	15	—	pF
Power Gain ($f_1=30\text{ MHz}$, $f_2=30.001\text{ MHz}$, $V_{DD}=50\text{ V}$, $P_{OUT}=150\text{ W}$ (PEP), $I_{DQ}=250\text{ mA}$) $f=175\text{ MHz}$	G_p	18	22 13	—	dB
Drain Efficiency ($f_1=30\text{ MHz}$, $f_2=30.001\text{ MHz}$, $V_{DD}=50\text{ V}$, $P_{OUT}=150\text{ W}$ (PEP), $I_{DQ}=250\text{ mA}$)	η_D	—	45	—	%
Intermodulation Distortion ($V_{DD}=50\text{ V}$, $P_{out}=150\text{ W}$ (PEP), $f_1=30\text{ MHz}$, $f_2=30.001\text{ MHz}$, $I_{DQ}=250\text{ mA}$)	IMD	—	-32	—	dB

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MRF151G

SILICON MOS N-CHANNEL POWER TRANSISTOR 300 W, up to 175 MHz, Enhancement Mode

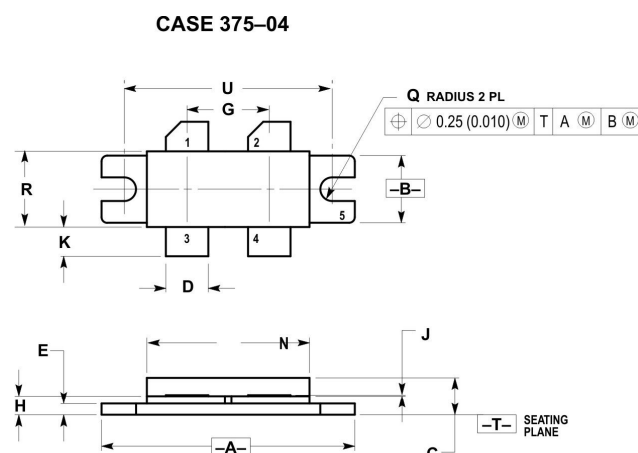
The silicon MOS transistor is designed for broadband commercial and military applications at frequencies to 175 MHz. The high power, high gain and broadband performance of this device makes possible solid state transmitters for FM broadcast or TV channel frequency bands.

Features:

- Power Gain: 14 dB Min
- Output Power: 300 W
- Efficiency: 50% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	125	V_{DC}
Drain Current-Continuous	I_D	40	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.35	$^{\circ}C/W$
Total Power Dissipation	P_D	500	W



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

STYLE 2:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. GATE
5. SOURCE

DIM	MIN	MAX	MIN	MAX
A	1.330	1.350	33.79	34.29
B	0.370	0.410	9.40	10.41
C	0.190	0.230	4.83	5.84
D	0.215	0.235	5.47	5.96
E	0.050	0.070	1.27	1.77
G	0.430	0.440	10.92	11.18
H	0.102	0.112	2.59	2.84
J	0.004	0.006	0.11	0.15
K	0.185	0.215	4.83	5.33
N	0.845	0.875	21.46	22.23
Q	0.060	0.070	1.52	1.78
R	0.390	0.410	9.91	10.41
U	1.100 BSC		27.94 BSC	

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=100$ mA, $V_{GS}=0$ V)	$V_{(BR)DS}$	125	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	5	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	1	3	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 5$ A)	G_{FS}	5	7	—	mhos
Input Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{ISS}	—	350	—	pF
Output Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{OSS}	—	220	—	pF
Reverse Transfer Capacitance ($V_{DS} = 50$ V, $V_{GS}=0$ V, $f = 1$ MHz)	C_{RSS}	—	15	—	pF
Power Gain ($V_{DS} = 50$ V, $P_{OUT} = 300$ W, $I_{DQ} = 500$ mA, $f = 175$ MHz)	G_p	14	16	—	dB
Drain Efficiency ($V_{DS} = 50$ V, $P_{OUT} = 300$ W, $I_{DQ} = 500$ mA, $f = 175$ MHz)	η_D	50	55	—	%

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MRF157

SILICON MOS N-CHANNEL POWER TRANSISTOR 600 W, up to 80 MHz, Enhancement Mode

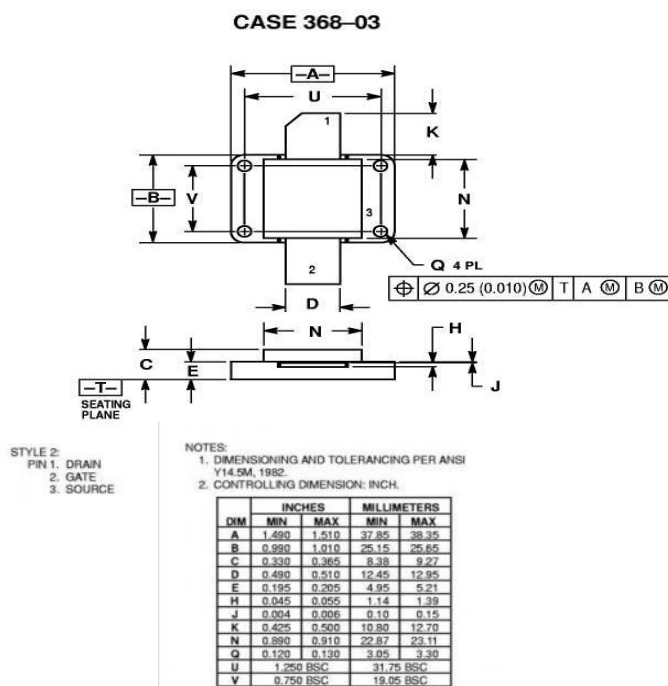
The silicon MOS transistor is designed for large-signal output stages to 80 MHz.

Features (at 30 MHz):

- Power Gain: 15 dB Min
- Output Power: 600 W
- Efficiency: 40% Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	125	V_{DC}
Drain Current-Continuous	I_D	60	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.13	$^{\circ}C/W$
Total Power Dissipation	P_D	1350	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS} = 100 \text{ mA}$, $V_{GS} = 0 \text{ V}$)	$V_{(BR)DS}$	125	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20 \text{ V}$, $V_{DS}=0 \text{ V}$)	I_{GSS}	—	—	5	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$)	I_{DSS}	—	—	20	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10 \text{ V}$, $I_D = 100 \text{ mA}$)	$V_{GS(TH)}$	1	3	5	V_{DC}
Forward Transconductance ($V_{DS} = 10 \text{ V}$, $I_D = 20 \text{ A}$)	G_{FS}	16	24	—	mhos
Input Capacitance ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{ISS}	—	1800	—	pF
Output Capacitance ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{OSS}	—	750	—	pF
Reverse Transfer Capacitance ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$, $f = 1 \text{ MHz}$)	C_{RSS}	—	75	—	pF
Power Gain ($V_{DS} = 50 \text{ V}$, $P_{OUT} = 600 \text{ W}$, $I_{DQ} = 800 \text{ mA}$, $f = 30 \text{ MHz}$)	G_p	15	20	—	dB
Drain Efficiency ($V_{DS} = 50 \text{ V}$, $P_{OUT} = 600 \text{ W}$, $I_{DQ} = 800 \text{ mA}$, $f = 30 \text{ MHz}$)	η_D	40	45	—	%

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KP979VC

SILICON MOS N-CHANNEL POWER TRANSISTOR
300 W, up to 230 MHz, Enhancement Mode

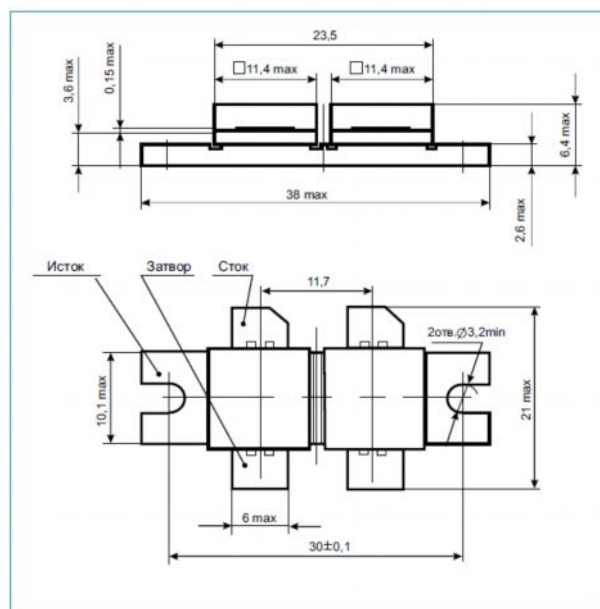
The silicon MOS transistor is designed for professional transmitter applications in the HF/VHF frequency range.

Features:

- Performance at 230 MHz, 50 Vdc
- Power Gain: 14 dB Min
- Output Power: 300 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	120	V_{DC}
Drain Current-Continuous	I_D	40	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Operation Junction Temperature	T_j	$-65 \div +200$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-65 \div +150$	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.38	$^{\circ}C/W$
Total Power Dissipation	P_D	460	W



Case KT-82

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_{DS}=50 \text{ mA}$, $V_{GS}=0 \text{ V}$)	$V_{(BR)DSS}$	120	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=40 \text{ V}$, $V_{DS}=0 \text{ V}$)	I_{GSS}	—	—	1	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$)	I_{DSS}	—	—	20	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10 \text{ V}$, $I_D = 100 \text{ mA}$)	$V_{GS(TH)}$	2	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10 \text{ V}$, $I_D = 5 \text{ A}$) (1)	G_{FS}	4	5	—	mhos
Input Capacitance ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$, $f = 1 \text{ MHz}$) (1)	C_{ISS}	—	350	—	pF
Output Capacitance ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$, $f = 1 \text{ MHz}$) (1)	C_{OSS}	—	180	—	pF
Reverse Transfer Capacitance ($V_{DS} = 50 \text{ V}$, $V_{GS}=0 \text{ V}$, $f = 1 \text{ MHz}$) (1)	C_{RSS}	—	18	—	pF
Power Gain ($V_{DS} = 50 \text{ V}$, $P_{OUT} = 300 \text{ W}$, $I_{DQ} = 100 \text{ mA}$, $f = 230 \text{ MHz}$)	G_p	14	15	—	dB
Drain Efficiency ($V_{DS} = 50 \text{ V}$, $P_{OUT} = 300 \text{ W}$, $I_{DQ} = 100 \text{ mA}$, $f = 230 \text{ MHz}$)	η_D	50	60	—	%

(1) Each transistor chip measured separately.

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR

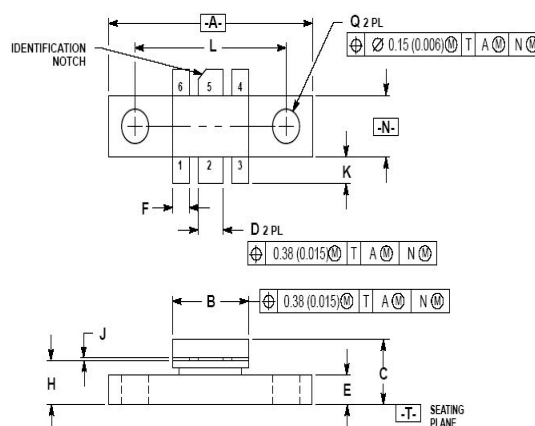
20 W, up to 500 MHz, Enhancement Mode

MRF166C

Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 400 MHz, 28 Vdc
- Power Gain: 14 dB Min
- Output Power: 20 W
- Efficiency: 50 % Min



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MIN	MAX	MIN	MAX
A	0.965	0.985	24.52	25.01
B	0.355	0.375	9.02	9.52
C	0.230	0.260	5.85	6.60
D	0.115	0.125	2.93	3.17
E	0.102	0.114	2.59	2.90
F	0.075	0.085	1.91	2.15
H	0.190	0.170	4.07	4.31
J	0.004	0.006	0.11	0.15
K	0.090	0.110	2.29	2.79
L	0.725 BSC		18.42 BSC	
N	0.225	0.241	5.72	6.12
Q	0.125	0.135	3.18	3.42

STYLE 3:
PIN 1: SOURCE (COMMON)
2: GATE (INPUT)
3: SOURCE (COMMON)
4: SOURCE (COMMON)
5: DRAIN (OUTPUT)
6: SOURCE (COMMON)

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	4.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 tu +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	70	W

CASE 319-07
ISSUE M

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	1.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 25$ mA)	$V_{GS(TH)}$	1	—	6	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 1.5$ A)	G_{FS}	0.6	0.8	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	30	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	35	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	4.5	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 20$ W, $I_{DQ} = 100$ mA, $f = 400$ MHz)	G_p	14	16	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 20$ W, $I_{DQ} = 100$ mA, $f = 400$ MHz)	η_D	50	55	—	%

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR 40 W, up to 500 MHz, Enhancement Mode

MRF166W

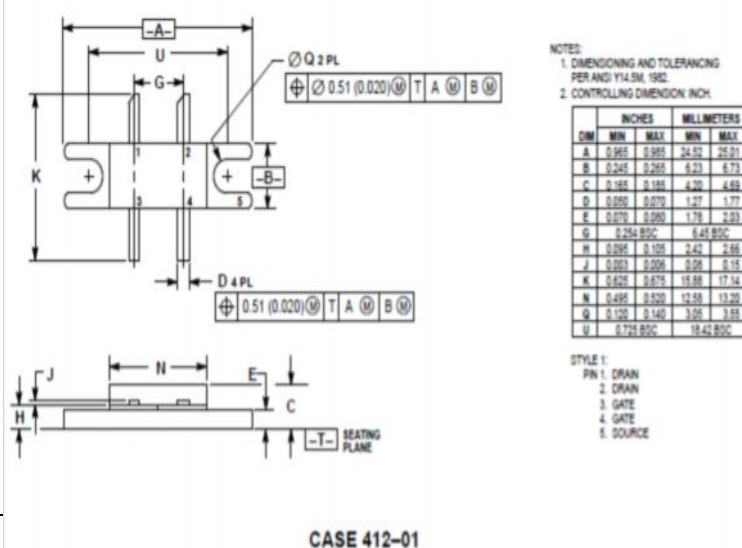
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 400 MHz, 28 V_{dc}
- Power Gain: 11 dB Min
- Output Power: 40 W
- Efficiency: 45 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V _{DSS}	65	V _{DC}
Drain Current-Continuous	I _D	8.0	A _{DC}
Gate-Source Voltage	V _{GS}	±40	V _{DC}
Storage Temperature Range	T _{STG}	-65 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	1.0	°C/W
Total Power Dissipation @T _C =25 °C	P _D	175	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage (I _D =5.0 mA, V _{GS} =0 V)	V _{(BR)DSS}	65	—	—	V _{DC}
Gate-Source Leakage Current (V _{GS} =20 V, V _{DS} =0 V) (1)	I _{GSS}	—	—	1.0	μA _{DC}
Zero Gate Voltage Drain Leakage Current (V _{DS} = 28 V, V _{GS} =0 V) (1)	I _{DSS}	—	—	1.0	mA _{DC}
Gate Threshold Voltage (V _{DS} = 10 V, I _D = 25 mA) (1)	V _{GS(TH)}	1	—	6	V _{DC}
Forward Transconductance (V _{DS} = 10 V, I _D = 1.5 A) (1)	G _{FS}	0.6	0.8	—	mhos
Input Capacitance (V _{DS} = 28 V, V _{GS} =0 V, f = 1 MHz) (1)	C _{ISS}	—	30	—	pF
Output Capacitance (V _{DS} = 28 V, V _{GS} =0 V, f = 1 MHz) (1)	C _{OSS}	—	35	—	pF
Reverse Transfer Capacitance (V _{DS} = 28 V, V _{GS} =0 V, f = 1 MHz) (1)	C _{RSS}	—	4.5	—	pF
Power Gain (V _{DS} = 28 V, P _{OUT} = 40W, I _{DQ} = 100 mA, f = 400 MHz)	G _p	11	13	—	dB
Drain Efficiency (V _{DS} = 28 V, P _{OUT} = 40 W, I _{DQ} = 100 mA, f = 400 MHz)	η _D	45	50	—	%

(1) Each transistor chip measured separately.

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR

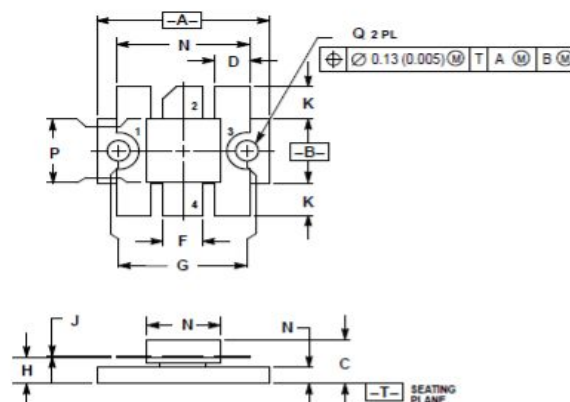
100 W, up to 400 MHz, Enhancement Mode

MRF175LU

Designed primarily for wideband large-signal output and driver from 30–400 MHz.

Features:

- Performance at 400 MHz, 28 Vdc
- Power Gain: 8 dB Min
- Output Power: 100 W
- Efficiency: 55 % Min



Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	8.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.65	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	270	W

CASE 333-04

NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	MIN	MAX	MIN	MAX
A	0.965	0.965	24.51	25.02
B	0.390	0.410	9.91	10.41
C	0.250	0.290	6.33	7.36
D	0.190	0.210	4.83	5.33
E	0.095	0.115	2.42	2.92
F	0.215	0.235	5.47	5.96
G	0.725 BSC		18.42 BSC	
H	0.155	0.175	3.94	4.44
J	0.004	0.006	0.10	0.15
K	0.195	0.205	4.95	5.21
L	0.740	0.770	18.80	19.55
N	0.415	0.425	10.54	10.80
P	0.390	0.400	9.91	10.16
Q	0.120	0.135	3.05	3.42

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V) (1)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	2.5	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 100$ mA)	$V_{GS(TH)}$	1	—	6	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 2.5$ A)	G_{FS}	2	3	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	180	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	200	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	20	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 100$ W, $I_{DQ} = 100$ mA, $f = 400$ MHz)	G_p	8	10	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 100$ W, $I_{DQ} = 100$ mA, $f = 400$ MHz)	η_D	55	60	—	%

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Specification is subject to change without notice

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 100 W, up to 500 MHz, Enhancement Mode

MRF177

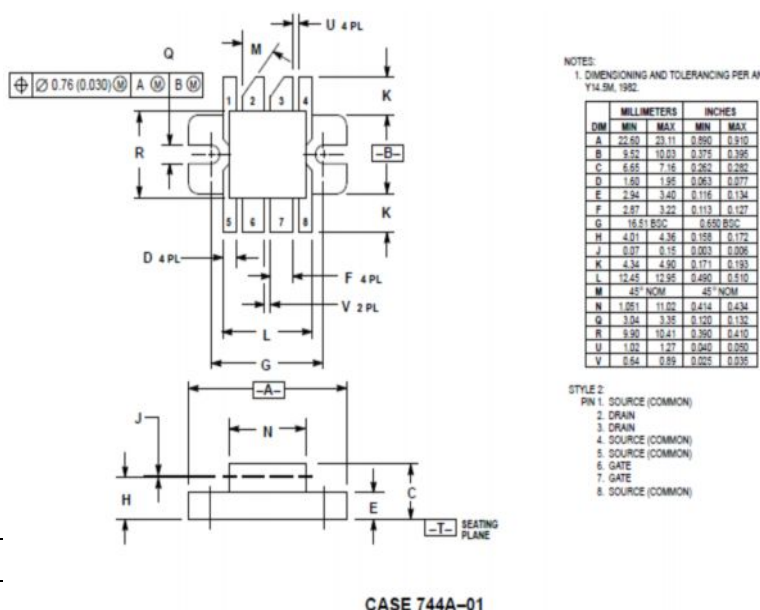
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 400 MHz, 28 Vdc
- Power Gain: 10 dB Min
- Output Power: 100 W
- Efficiency: 55 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	8.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 tu +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.65	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	270	W



Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V) (1)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V) (1)	I_{DSS}	—	—	2.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 25$ mA) (1)	$V_{GS(TH)}$	1	—	6	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 2$ A) (1)	G_{FS}	1.8	2.2	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	100	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	105	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	10	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 100$ W, $I_{DQ} = 200$ mA, $f = 400$ MHz)	G_p	10	12	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 100$ W, $I_{DQ} = 200$ mA, $f = 400$ MHz)	η_D	55	60	—	%

(1) Each transistor chip measured separately.

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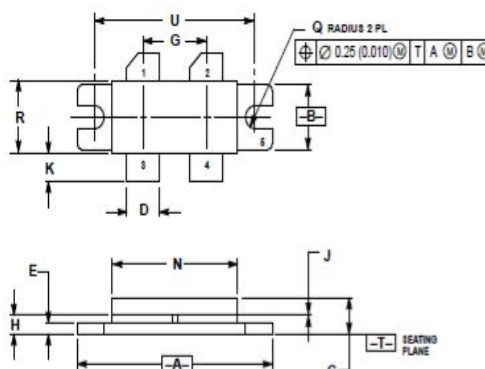
SILICON MOS N-CHANNEL RF POWER TRANSISTOR 150 W, up to 500 MHz, Enhancement Mode

MRF175GU

Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 400 MHz, 28 Vdc
- Power Gain: 10 dB Min
- Output Power: 150 W
- Efficiency: 55 % Min



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MIN	MAX	MIN	MAX
A	1.310	1.560	33.75	39.25
B	0.370	0.410	9.40	10.41
C	0.180	0.230	4.63	5.84
D	0.215	0.235	5.47	5.96
E	0.050	0.070	1.27	1.77
F	0.430	0.460	10.92	11.68
G	0.100	0.110	2.59	2.84
H	0.034	0.036	0.86	0.91
J	0.185	0.215	4.69	5.47
K	0.045	0.075	1.14	1.91
N	0.040	0.070	1.02	1.78
R	0.380	0.410	9.65	10.41
U	1.100 BSC		27.94 BSC	

STYLE 2:
PIN 1: DRAIN
2: DRAIN
3: GATE
4: GATE
5: SOURCE

CASE 375-04

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	8.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 40	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.44	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	400	W

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V) (1)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V) (1)	I_{DSS}	—	—	2.5	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 25$ mA) (1)	$V_{GS(TH)}$	1	—	6	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 2.5$ A) (1)	G_{FS}	2	3	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	180	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	200	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	20	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 150$ W, $I_{DQ} = 200$ mA, $f = 400$ MHz)	G_p	10	12	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 150$ W, $I_{DQ} = 200$ mA, $f = 400$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR 5 W, up to 500 MHz, Enhancement Mode

KP978A

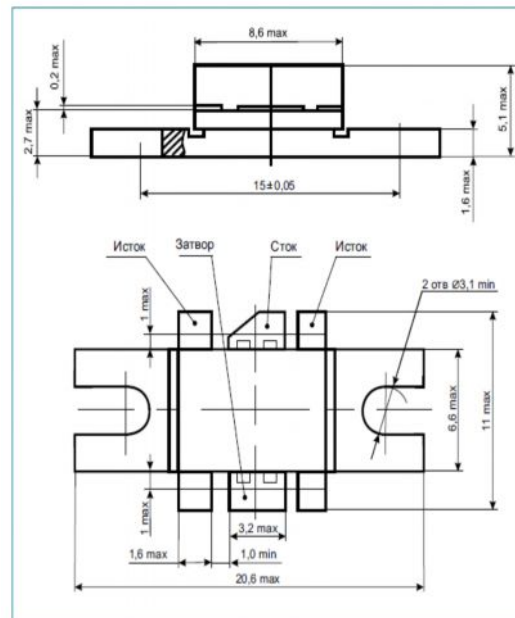
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 28 Vdc
- Power Gain: 13 dB Min
- Output Power: 5 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	1.5	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7	$^{\circ}C/W$
Total Power Dissipation @ $T_C=25^{\circ}C$	P_D	25	W



Case KT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D=5.0$ mA, $V_{GS}=0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS}=28$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	2.0	mA_{DC}
Gate Threshold Voltage ($V_{DS}=10$ V, $I_D=20$ mA)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS}=10$ V, $I_D=0.3$ A)	G_{FS}	0.19	0.3	—	mhos
Input Capacitance ($V_{DS}=28$ V, $V_{GS}=0$ V, $f=1$ MHz)	C_{ISS}	—	16	—	pF
Output Capacitance ($V_{DS}=28$ V, $V_{GS}=0$ V, $f=1$ MHz)	C_{OSS}	—	14	—	pF
Reverse Transfer Capacitance ($V_{DS}=28$ V, $V_{GS}=0$ V, $f=1$ MHz)	C_{RSS}	—	1.5	—	pF
Power Gain ($V_{DS}=28$ V, $P_{OUT}=5$ W, $I_{DQ}=50$ mA, $f=500$ MHz)	G_p	13	15	—	dB
Drain Efficiency ($V_{DS}=28$ V, $P_{OUT}=5$ W, $I_{DQ}=50$ mA, $f=500$ MHz)	η_D	50	55	—	%

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Specification is subject to change without notice

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 10 W, up to 500 MHz, Enhancement Mode

KP978BC

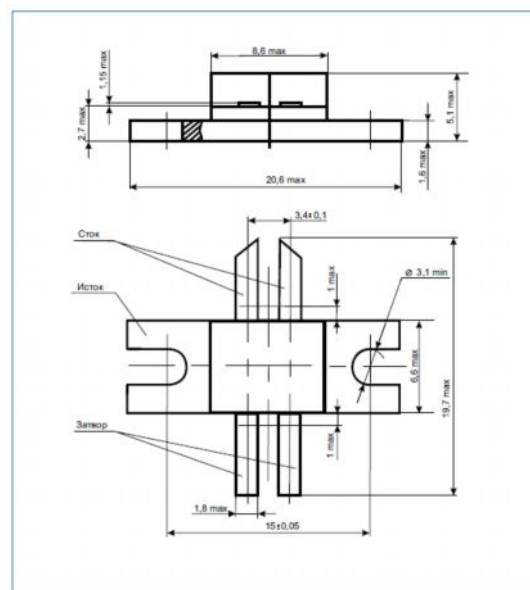
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 28 Vdc
- Power Gain: 13 dB Min
- Output Power: 10 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V_{DC}
Drain Current-Continuous	I_D	3.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.2	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	73	W



Case KT-81

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	2.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 20$ mA) (1)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.7$ A) (1)	G_{FS}	0.19	0.3	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	16	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	14	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	1.5	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 10$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	G_p	13	15	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 10$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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Specification is subject to change without notice

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 20 W, up to 500 MHz, Enhancement Mode

KP978VC

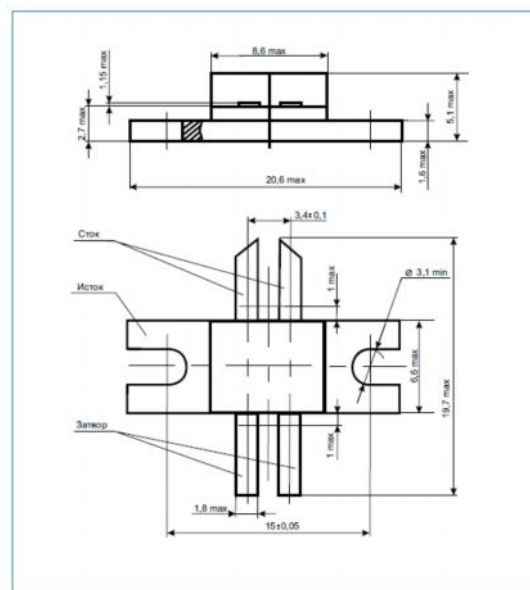
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 28 Vdc
- Power Gain: 12 dB Min
- Output Power: 20 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	6.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.0	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	87.5	W



Case KT-81

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	3.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 20$ mA) (1)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.6$ A) (1)	G_{FS}	0.32	0.4	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	26	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	28	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	4	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 20$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	G_p	12	13	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 20$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR 40 W, up to 500 MHz, Enhancement Mode

KP978GC

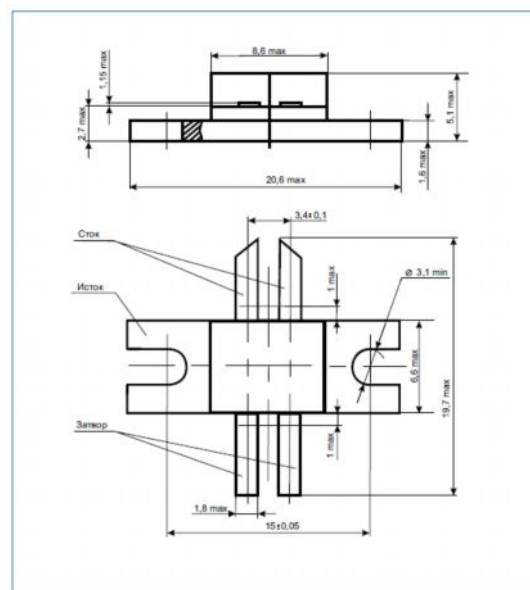
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 28 Vdc
- Power Gain: 12 dB Min
- Output Power: 40 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	12.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.2	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	146	W



Case KT-81

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 10.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	5.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 50$ mA) (1)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 1.0$ A) (1)	G_{FS}	0.35	0.5	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	55	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	50	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	6	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 40$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	G_p	12	13	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 40$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR 80 W, up to 500 MHz, Enhancement Mode

KP978DC

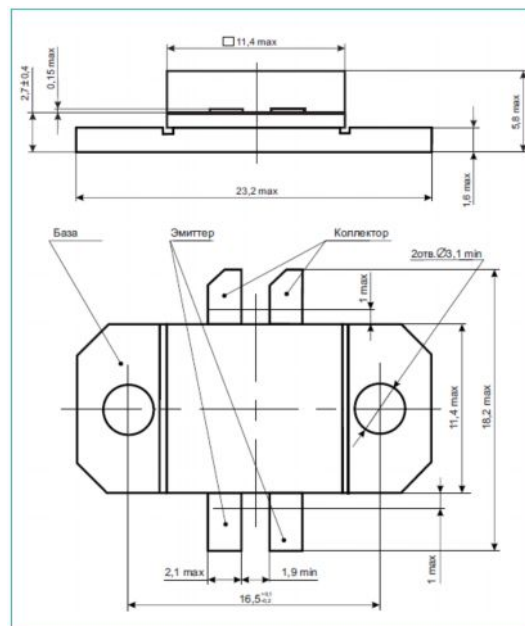
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 28 Vdc
- Power Gain: 11 dB Min
- Output Power: 80 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	18.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.0	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	175	W



Case KT-44

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 10.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	10.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 50$ mA) (1)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 2.0$ A) (1)	G_{FS}	1.5	2	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	90	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	70	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	10	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 80$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	G_p	11	13	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 80$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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Specification is subject to change without notice

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 150 W, up to 500 MHz, Enhancement Mode

KP977AC

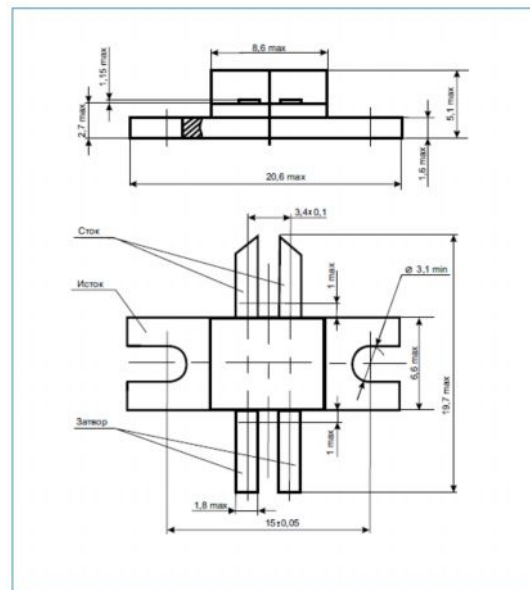
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 28 Vdc
- Power Gain: 9 dB Min
- Output Power: 150 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	65	V_{DC}
Drain Current-Continuous	I_D	30.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.55	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	320	W



Case KT-81

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 50.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	65	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	20.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 50$ mA) (1)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 3.0$ A) (1)	G_{FS}	2.0	2.5	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	180	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	160	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	15	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 150$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	G_p	9	10	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 150$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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Specification is subject to change without notice

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 5 W, up to 500 MHz, Enhancement Mode

KP981A

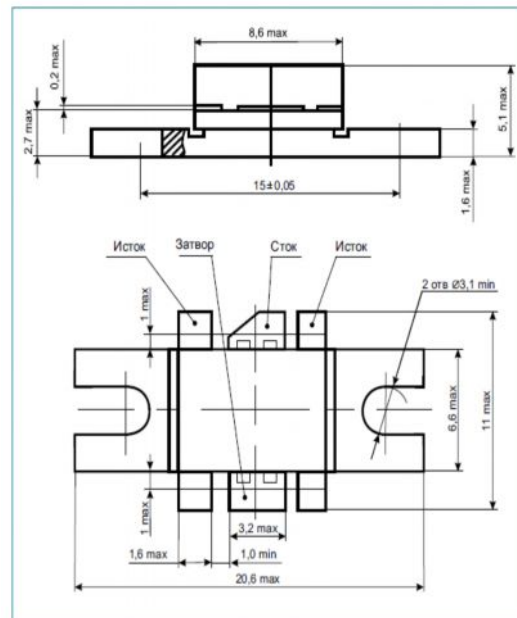
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 12.5 Vdc
- Power Gain: 10 dB Min
- Output Power: 5 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	40	V_{DC}
Drain Current-Continuous	I_D	1.5	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	25	W



Case KT-83

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	40	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	2.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 20$ mA)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.7$ A)	G_{FS}	0.33	0.4	—	mhos
Input Capacitance ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	18	—	pF
Output Capacitance ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	24	—	pF
Reverse Transfer Capacitance ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	3.2	—	pF
Power Gain ($V_{DS} = 12.5$ V, $P_{OUT} = 5$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	G_p	10	12	—	dB
Drain Efficiency ($V_{DS} = 12.5$ V, $P_{OUT} = 5$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	η_D	50	55	—	%

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SILICON MOS N-CHANNEL RF POWER TRANSISTOR 10 W, up to 500 MHz, Enhancement Mode

KP981BC

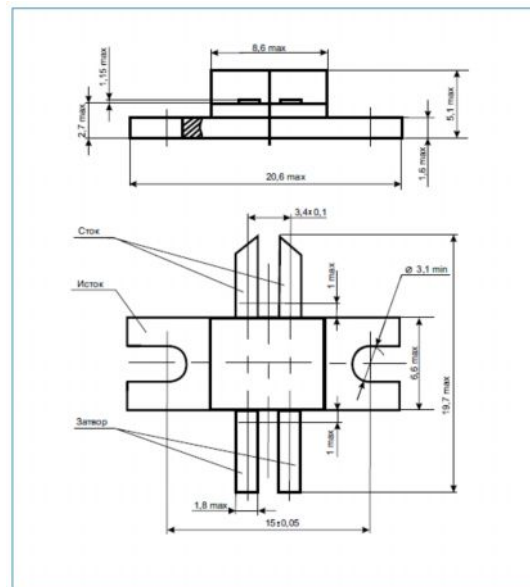
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 12.5 Vdc
- Power Gain: 10 dB Min
- Output Power: 10 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	40	V_{DC}
Drain Current-Continuous	I_D	3.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.4	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	73	W



Case KT-81

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 5.0$ mA, $V_{GS} = 0$ V)	$V_{(BR)DSS}$	40	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	2.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 20$ mA) (1)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.7$ A) (1)	G_{FS}	0.33	0.4	—	mhos
Input Capacitance ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	23	—	pF
Output Capacitance ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	33	—	pF
Reverse Transfer Capacitance ($V_{DS} = 12.5$ V, $V_{GS} = 0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	3.5	—	pF
Power Gain ($V_{DS} = 12.5$ V, $P_{OUT} = 10$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	G_p	10	12	—	dB
Drain Efficiency ($V_{DS} = 12.5$ V, $P_{OUT} = 10$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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Specification is subject to change without notice

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 20 W, up to 500 MHz, Enhancement Mode

KP981VC

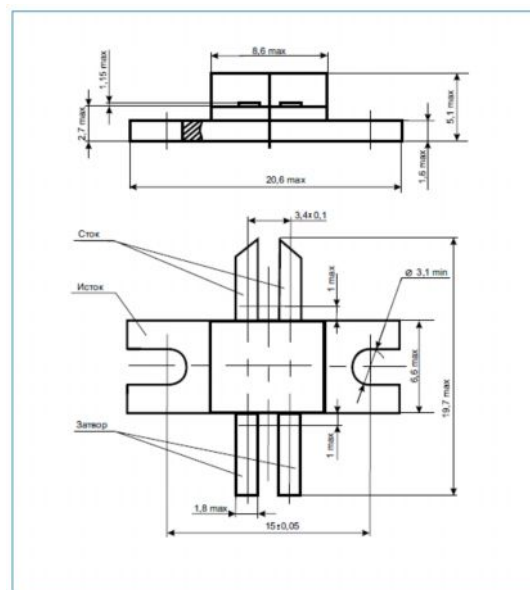
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 12.5 V_{dc}
- Power Gain: 10 dB Min
- Output Power: 20 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V _{DSS}	40	V _{DC}
Drain Current-Continuous	I _D	6.0	A _{DC}
Gate-Source Voltage	V _{GS}	±20	V _{DC}
Storage Temperature Range	T _{STG}	-65 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	2.0	°C/W
Total Power Dissipation @T _C =25 °C	P _D	87.5	W



Case KT-81

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage (I _D =5.0 mA, V _{GS} =0 V)	V _{(BR)DSS}	40	—	—	V _{DC}
Gate-Source Leakage Current (V _{GS} =20 V, V _{DS} =0 V)	I _{GSS}	—	—	1.0	μA _{DC}
Zero Gate Voltage Drain Leakage Current (V _{DS} = 12.5 V, V _{GS} =0 V)	I _{DSS}	—	—	3.0	mA _{DC}
Gate Threshold Voltage (V _{DS} = 10 V, I _D = 20 mA) (1)	V _{GS(TH)}	1	—	5	V _{DC}
Forward Transconductance (V _{DS} = 10 V, I _D = 0.3 A) (1)	G _{FS}	0.45	0.5	—	mhos
Input Capacitance (V _{DS} = 12.5 V, V _{GS} =0 V, f = 1 MHz) (1)	C _{ISS}	—	38	—	pF
Output Capacitance (V _{DS} = 12.5 V, V _{GS} =0 V, f = 1 MHz) (1)	C _{OSS}	—	50	—	pF
Reverse Transfer Capacitance (V _{DS} = 12.5 V, V _{GS} =0 V, f = 1 MHz) (1)	C _{RSS}	—	6.3	—	pF
Power Gain (V _{DS} = 12.5 V, P _{OUT} = 20 W, I _{DQ} = 50 mA, f = 500 MHz)	G _p	10	12	—	dB
Drain Efficiency (V _{DS} = 12.5 V, P _{OUT} = 20 W, I _{DQ} = 50 mA, f = 500MHz)	η _D	50	55	—	%

(1) Each transistor chip measured separately.

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SILICON LDMOS POWER TRANSISTOR

7 W, up to 1000 MHz, Enhancement Mode

KP980A

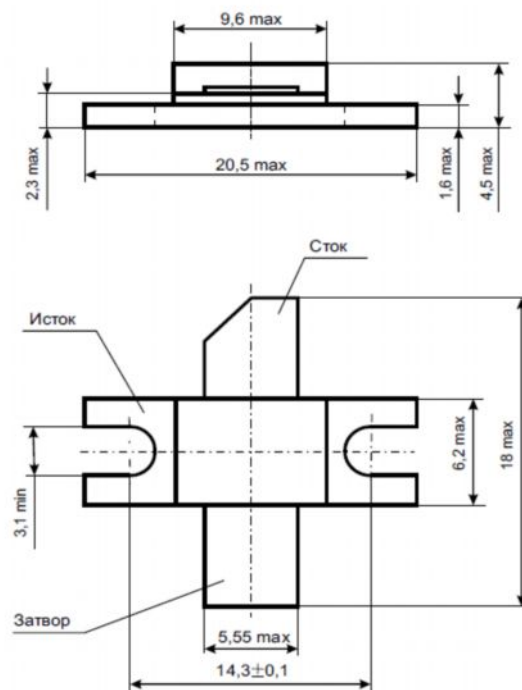
The silicon LDMOS transistor die is designed for large-signal output and driver stages up to 860 MHz frequency range. This transistor is typically used for construction of terminal cascades of power amplifiers or transmitter applications.

Features:

- Performance at 860 MHz, 28 Vdc
- Power Gain: 11 dB Min
- Output Power: 7 W
- Efficiency: 40 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DS}	60	V_{DC}
Drain Current-Continuous	I_D	1.5	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	10	$^{\circ}C/W$
Total Power Dissipation @ $T_C = 25^{\circ}C$	P_D	17.5	W



Case KT-55C-1

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D = 10$ mA, $V_{GS} = 0$ V)	$V_{(BR)DS}$	60	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS} = 20$ V, $V_{DS} = 0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28$ V, $V_{GS} = 0$ V)	I_{DSS}	—	—	2.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 20$ mA)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.3$ A)	G_{FS}	0.3	—	—	mhos
Input Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{ISS}	—	22	—	pF
Output Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{OSS}	—	11	—	pF
Reverse Transfer Capacitance ($V_{DS} = 28$ V, $V_{GS} = 0$ V, $f = 1$ MHz)	C_{RSS}	—	2.2	—	pF
Power Gain ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	G_p	11	14	—	dB
Drain Efficiency ($V_{DS} = 28$ V, $P_{OUT} = 5$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	η_D	40	50	—	%

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Specification is subject to change without notice

Power RF Amplifier

Power = 16 Watts

Bandwidth = 300 to 308 MHz

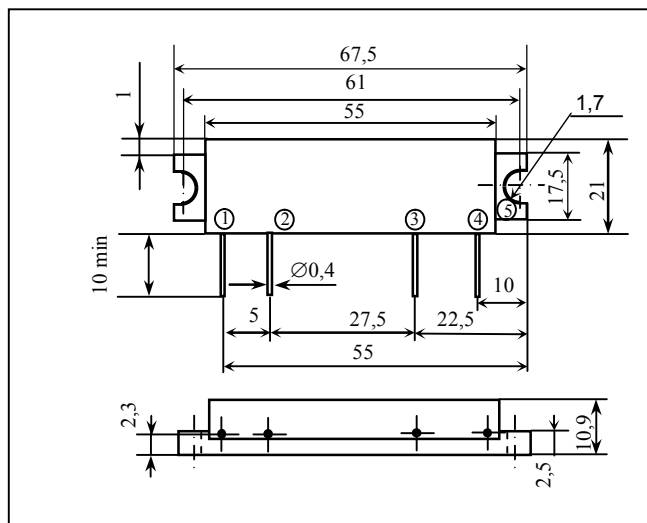
Gain = 29dB Vdd=12.5 Volts

50 Ohms Input/Output Impedances

Copper Flange

Description

The UM117-3 is 16 Watt FM amplifier module covering a bandwidth of 300-308 MHz. This dual stage amplifier is specifically designed for Land Mobile UHF band portable radio applications.



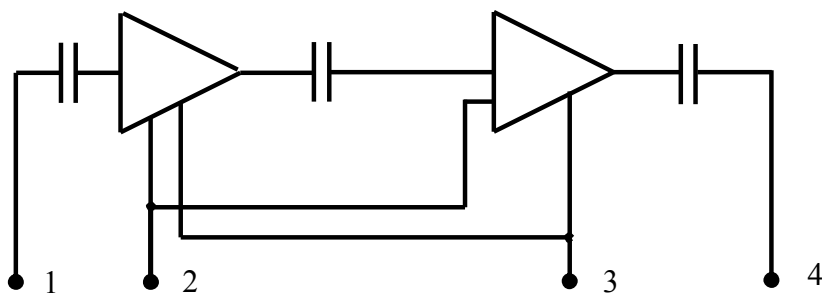
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	VDD	16.5	V
DC gate Voltage, Power control	VGG	5.0	V
Input Power	Pin	30	mW
Output Power	Pout	25	W
Operating Case Temp.	Tc	-40 to +85	°C
Storage Temperature	Tstg	-60 to +100	°C

Electrical Characteristics: (Tc = 25°C, Zs = Zl = 50 Ohms. Vdd = 12.5 Volts. Vgg = 5 Volts.)

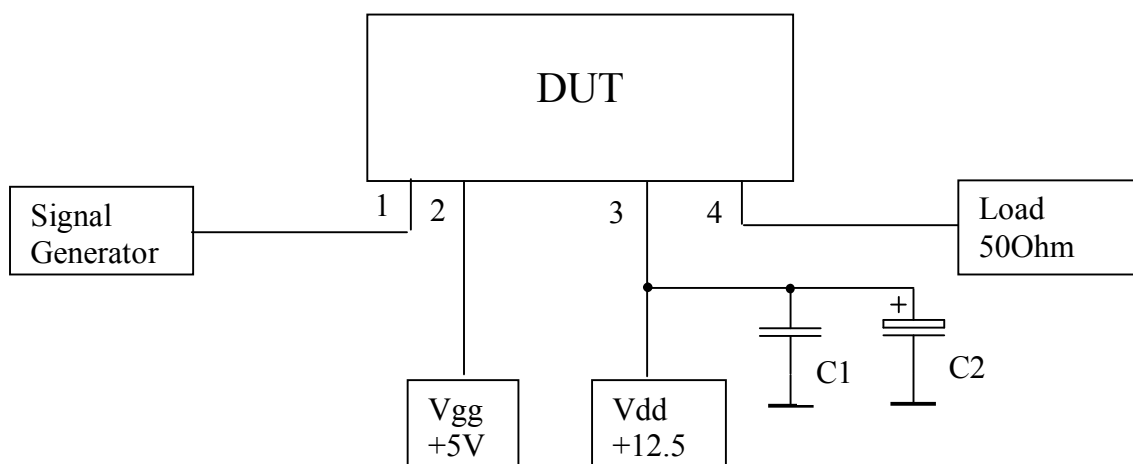
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	300		308	MHz	50 Ohm load
Output Power	Pout	16	20		Watts	
Power Gain	PG	29	30		dB	
Total Efficiency	η	40	50		%	Po=16W, CW
2 nd Harmonic	F ₂		-40	-30	dBc	
3 rd Harmonic	F ₃		-40	-30	dBc	
Load Mismatch	Ψ	No degradation or destroy				Pin=20mW, Po=16W, VSWR =20

Block diagram



- 1- RF input
- 2- Gate Voltage (V_{gg}), Power Control
- 3- Drain Voltage (V_{dd})
- 4- RF Output (P_{out})
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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Specification is subject to change without notice

Power RF Amplifier

Power = 16 Watts

Bandwidth = 146 to 174 MHz

Gain = 29dB Vdd=12.5 Volts

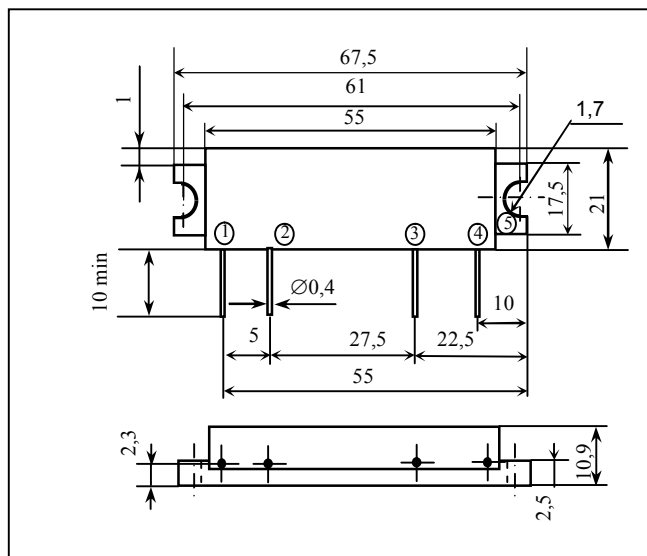
50 Ohms Input/Output Impedances

Copper Flange

Description

The UM118-2 is 16 Watt FM amplifier module covering a bandwidth of 146-174 MHz.

This dual stage amplifier is specifically designed for Land Mobile VHF band portable radio applications.



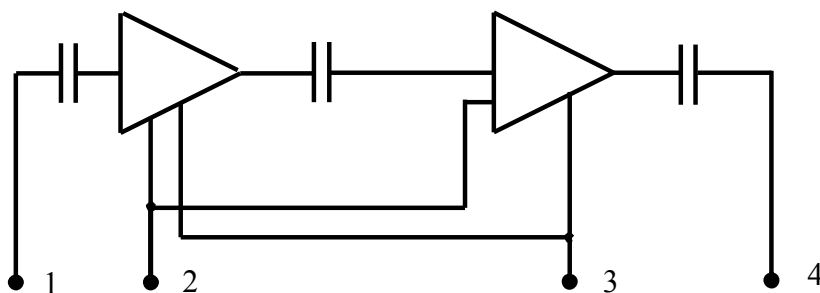
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	VDD	16.5	V
DC gate Voltage, Power control	VGG	5.0	V
Input Power	Pin	30	mW
Output Power	Pout	25	W
Operating Case Temp.	Tc	-40 to +85	°C
Storage Temperature	Tstg	-60 to +100	°C

Electrical Characteristics: (Tc = 25°C, Zs = Zl = 50 Ohms. Vdd = 12.5 Volts. Vgg = 5 Volts.)

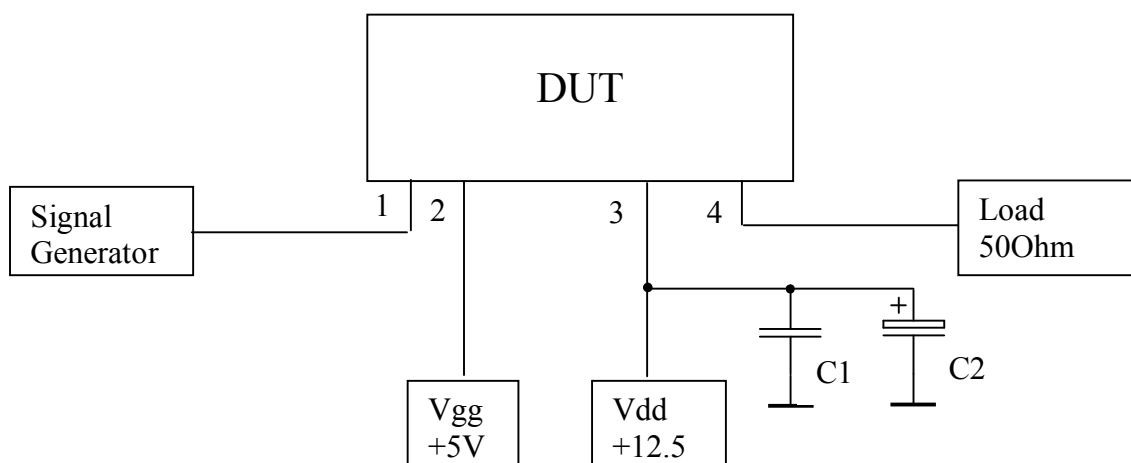
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	300		308	MHz	50 Ohm load
Output Power	Pout	16	20		Watts	
Power Gain	PG	29	30		dB	
Total Efficiency	η	40	50		%	Po=16W, CW
2 nd Harmonic	F ₂		-40	-30	dBc	
3 rd Harmonic	F ₃		-40	-30	dBc	
Load Mismatch	Ψ	No degradation or destroy				Pin=20mW, Po=16W, VSWR =20

Block diagram



- 1- RF input
- 2- Gate Voltage (Vgg), Power Control
- 3- Drain Voltage (Vdd)
- 4- RF Output (Pout)
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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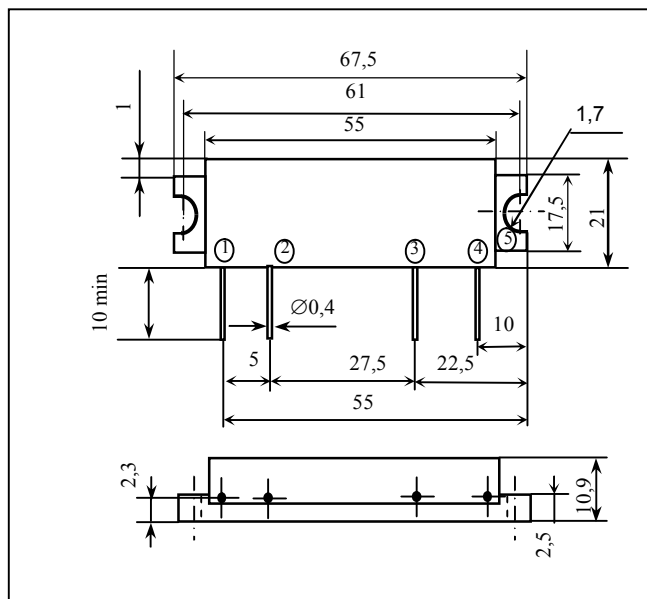
Specification is subject to change without notice

Power RF Amplifier

Power = 16 Watts
 Bandwidth = 2.0 to 2.5 MHz
 Gain = 32dB Vdd=12.5 Volts
 50 Ohms Input/Output Impedance
 Copper Flange

Description

The UM126-1 is 16 Watt FM amplifier module covering a bandwidth of 2.0-2.5 MHz. This dual stage amplifier is specifically designed for Land Mobile HF band portable radio applications.



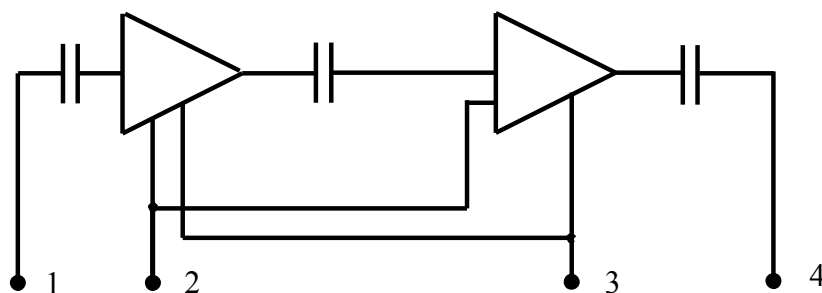
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	VDD	16.5	V
DC gate Voltage, Power control	VGG	5.0	V
Input Power	Pin	30	mW
Output Power	Pout	25	W
Operating Case Temp.	Tc	-40 to +85	°C
Storage Temperature	Tstg	-60 to +100	°C

Electrical Characteristics: (Tc = 25°C, Zs = Zl = 50 Ohms. Vdd = 12.5 Volts. Vgg = 5 Volts.)

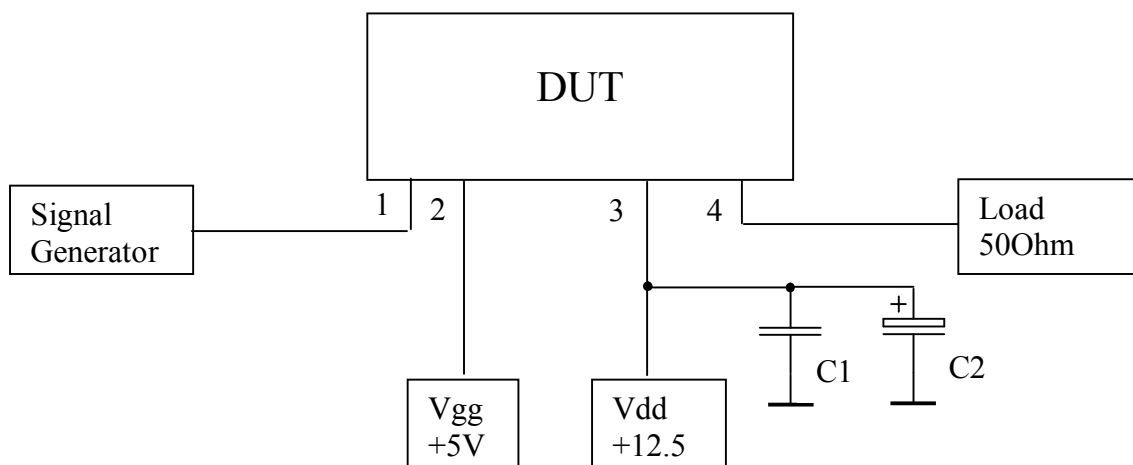
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	300		308	MHz	50 Ohm load
Output Power	Pout	16	20		Watts	
Power Gain	PG	32	34		dB	
Total Efficiency	η	40	50		%	Po=16W, CW
2 nd Harmonic	F ₂			-55	dBc	
3 rd Harmonic	F ₃			-60	dBc	
Load Mismatch	Ψ	No degradation or destroy				Pin=10mW, Po=16W, VSWR =20

Block diagram



- 1- RF input
- 2- Gate Voltage (V_{gg}), Power Control
- 3- Drain Voltage (V_{dd})
- 4- RF Output (P_{out})
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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Specification is subject to change without notice

Power RF Amplifier

Power = 20 Watts

Bandwidth = 1.5 to 30 MHz

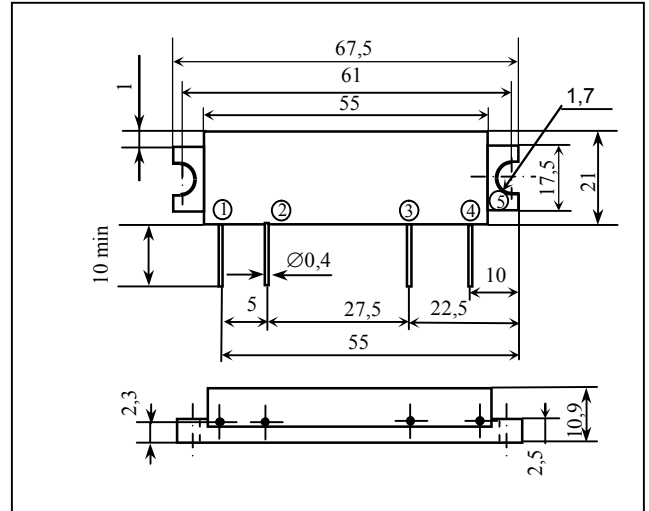
Gain = 30dB Vdd=28.0 Volts

50 Ohms Input/Output Impedances

Copper Flange

Description

The UM131-1 is 20 Watt SSB amplifier module covering a bandwidth of 1.5-30 MHz. This dual stage amplifier is specifically designed for Land Mobile HF band portable radio applications.



Absolute Maximum Ratings (T=25°C)

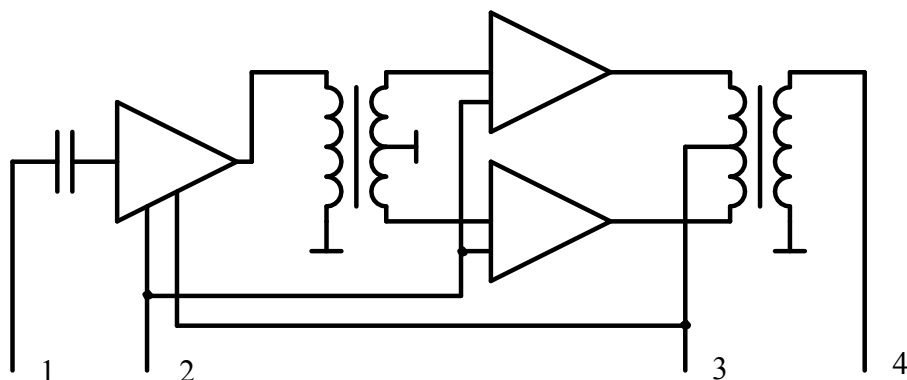
Parameter	Symbol	Value	Unit
DC supply Voltage	VDD	32.0	V
DC gate Voltage, Power control	VGG	5.0	V
Input Power	Pin	30	mW
Output Power	Pout	25	W
Operating Case Temp.	Tc	-40 to +85	°C
Storage Temperature	Tstg	-60 to +100	°C

Electrical Characteristics: (Tc = 25°C, Zs = Zl = 50 Ohms. Vdd = 28 Volts. Vgg = 5 Volts.)

Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	1.5		30	MHz	50 Ohm load
Output Power	Pout	20			Watts	
Power Gain	PG	30	33		dB	
Total Efficiency	η	45			%	Po=20W, CW
Intermod - 2tone ¹	IMD ₃		-33	-30	dBc	
2 nd Harmonic	F ₂			-25	dBc	
3 rd Harmonic	F ₃			-10	dBc	
Load Mismatch	Ψ	No degradation or destroy				Pin=20mW, Po=20W(PEP), VSWR =20

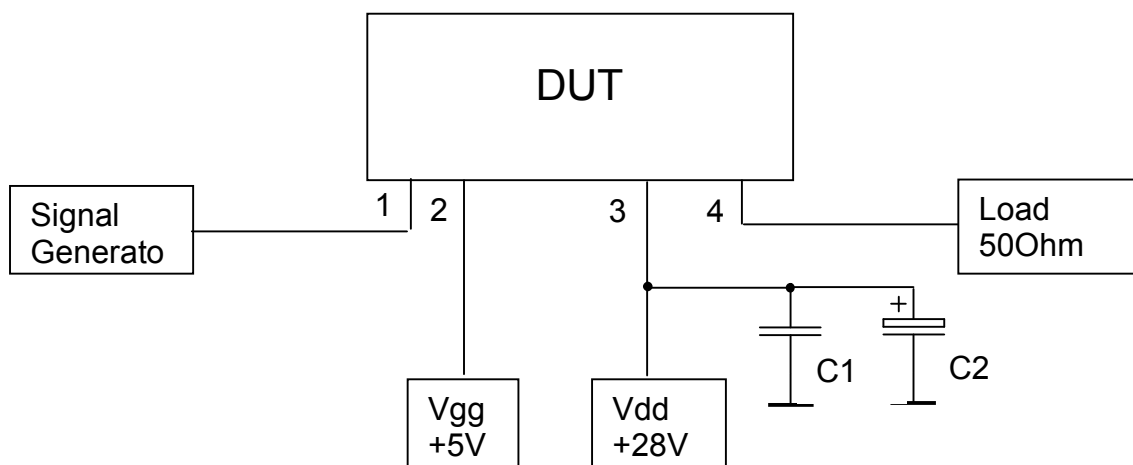
¹ Two Tone, Reference Each Tone

Block diagram



- 1- RF input
- 2- Gate Voltage (Vgg), Power Control
- 3- Drain Voltage (Vdd)
- 4- RF Output (Pout)
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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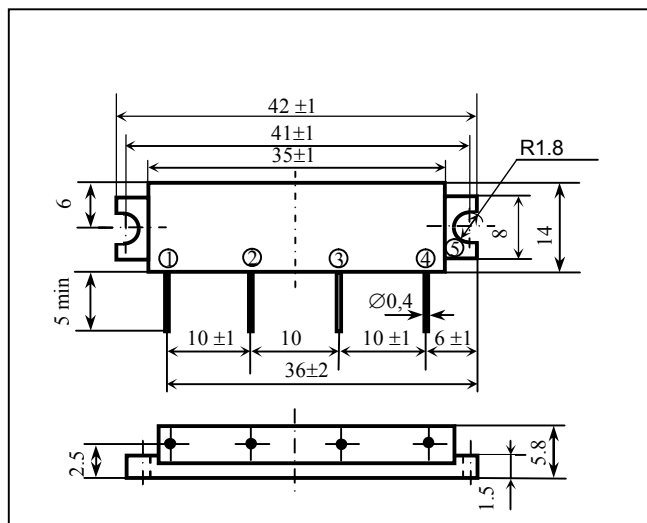
Specification is subject to change without notice

Power RF Amplifier

Power = 16 Watts
 Bandwidth = 146 to 174 MHz
 Gain = 29dB Vdd=12.5 Volts
 50 Ohms Input/Output Impedances
 Copper Flange

Description

The UM132-2 is 16 Watt FM amplifier module covering a bandwidth of 146-174 MHz. This dual stage amplifier is specifically designed for Land Mobile VHF band portable radio applications.



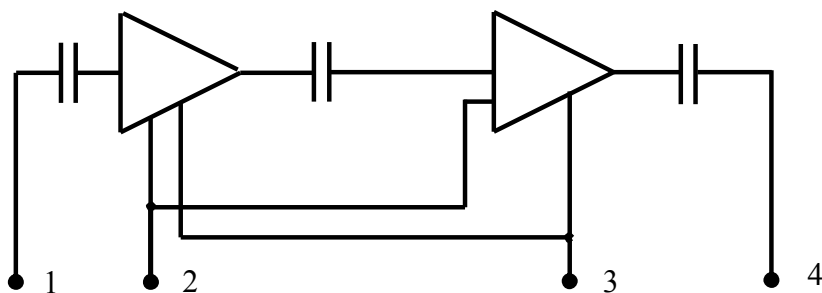
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	VDD	16.5	V
DC gate Voltage, Power control	VGG	5.0	V
Input Power	Pin	30	mW
Output Power	Pout	25	W
Operating Case Temp.	Tc	-40 to +85	°C
Storage Temperature	Tstg	-60 to +100	°C

Electrical Characteristics: (Tc = 25°C, Zs = Zl = 50 Ohms. Vdd = 12.5 Volts. Vgg = 5 Volts.)

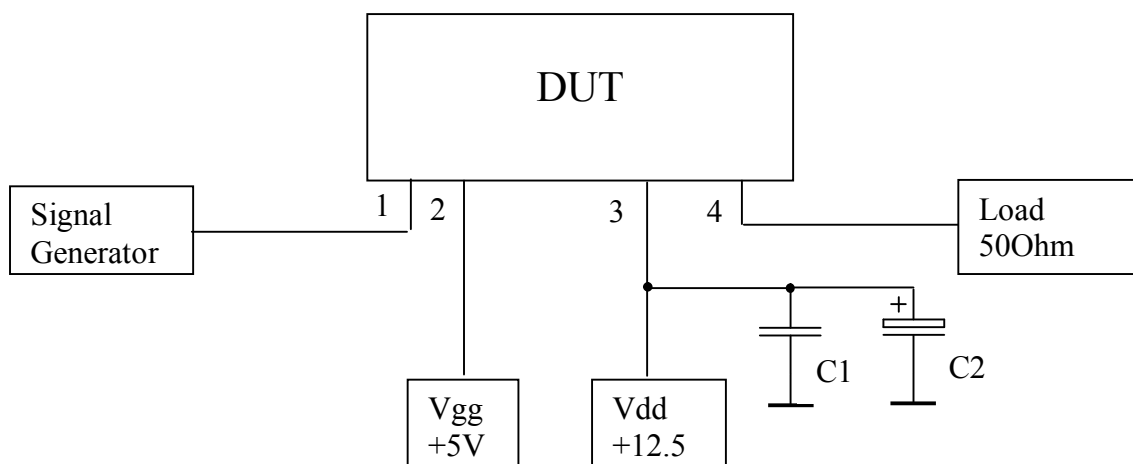
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	300		308	MHz	50 Ohm load
Output Power	Pout	16	20		Watts	
Power Gain	PG	29	30		dB	
Total Efficiency	η	40	50		%	Po=16W, CW
2 nd Harmonic	F ₂		-40	-30	dBc	
3 rd Harmonic	F ₃		-40	-30	dBc	
Load Mismatch	Ψ	No degradation or destroy				Pin=20mW, Po=16W, VSWR =20

Block diagram



- 1- RF input
- 2- Gate Voltage (V_{gg}), Power Control
- 3- Drain Voltage (V_{dd})
- 4- RF Output (P_{out})
- 5- RF Ground (Case)

Test block diagram



- C1- 0.1uF
- C2- 100uF

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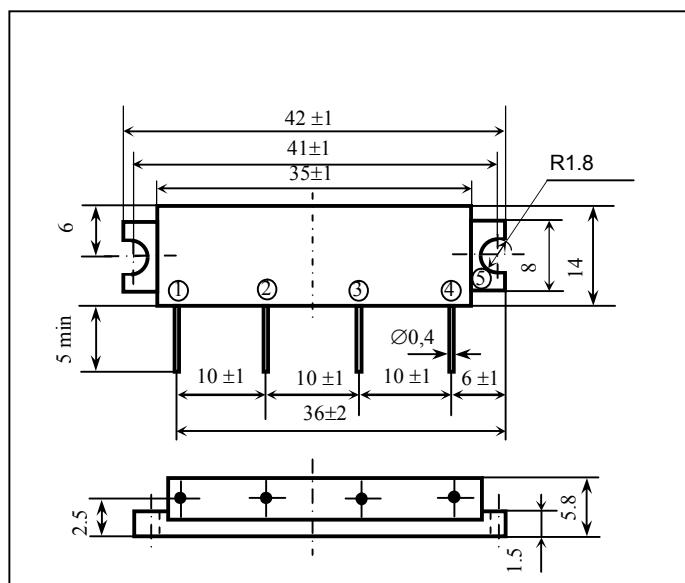
Specification is subject to change without notice

Power RF Amplifier

Power = 5 Watts
 Bandwidth = 33 to 39 MHz
 Gain = 30dB $V_{cc}=9.6$ Volts
 50 Ohms Input/Output Impedances
 Copper Flange

Description

The UM109-1A is 5 Watt FM amplifier module covering a bandwidth of 33-39 MHz. This dual stage amplifier is specifically designed for Land Mobile VHF band portable radio applications.



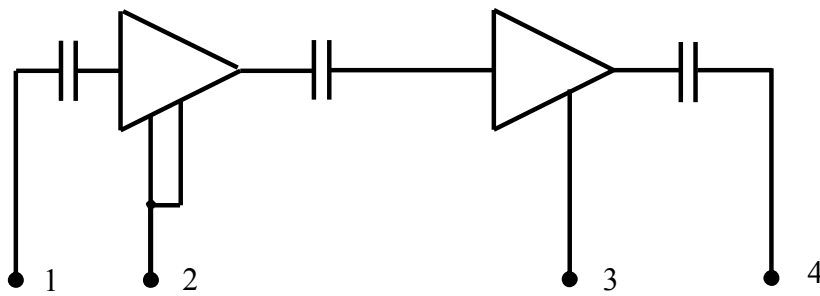
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	V_{cc}	12	V
DC bias Voltage, Power control	V_{bb}	9.6	V
Input Power	P_{in}	30	mW
Output Power	P_{out}	10	W
Operating Case Temp.	T_c	-40 to +85	°C
Storage Temperature	T_{stg}	-60 to +100	°C

Electrical Characteristics: ($T_c = 25^\circ\text{C}$, $Z_s = Z_l = 50$ Ohms. $V_{cc} = 9.6$ Volts. $V_{bb} = 9.6$ Volts.)

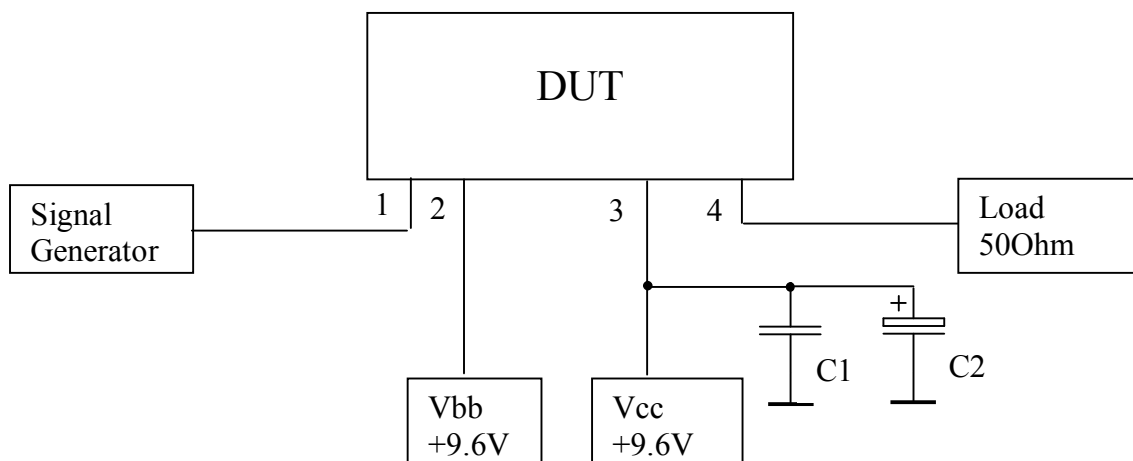
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	33		39	MHz	50 Ohm load
Output Power	P_{out}	5			Watts	
Power Gain	PG	30			dB	
Total Efficiency	η	45	55		%	$P_o=5W$, CW
2 nd Harmonic	F_2		-40	-30	dBc	
3 rd Harmonic	F_3		-40	-30	dBc	
Load Mismatch	Ψ	No degradation or destroy				$P_{in}=10mW$, $P_o=5W$, VSWR =20

Block diagram



- 1- RF input
- 2- Bias Voltage (V_{bb}), Power Control
- 3- Collector Voltage (V_{cc})
- 4- RF Output (P_{out})
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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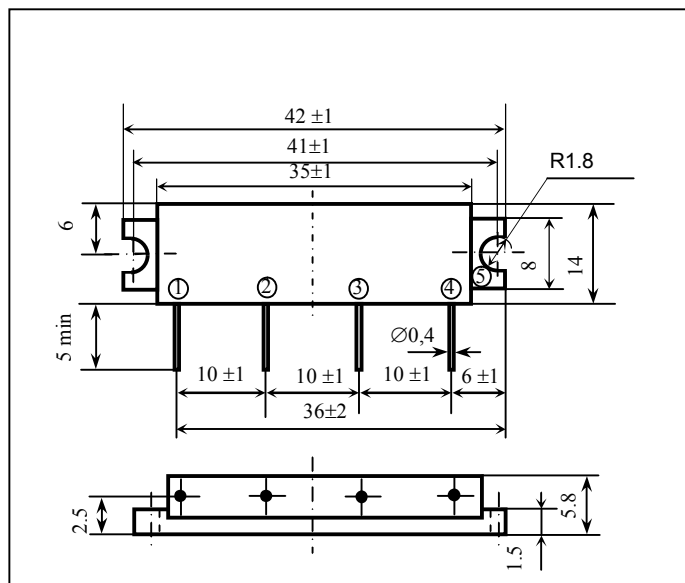
Specification is subject to change without notice

Power RF Amplifier

Power = 5 Watts
 Bandwidth = 39 to 45 MHz
 Gain = 30dB $V_{cc}=9.6$ Volts
 50 Ohms Input/Output Impedances
 Copper Flange

Description

The UM109-1B is 5 Watt FM amplifier module covering a bandwidth of 39-45 MHz. This dual stage amplifier is specifically designed for Land Mobile VHF band portable radio applications.



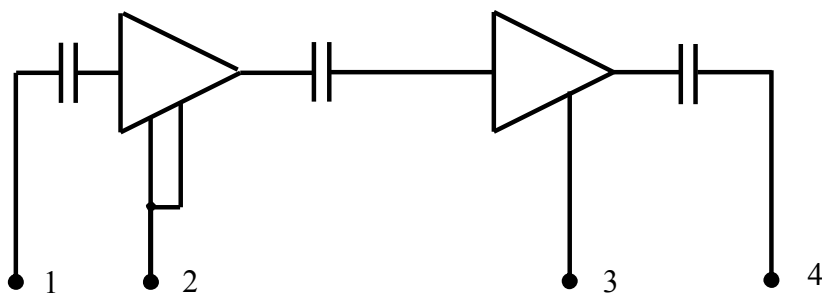
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	V_{cc}	12	V
DC bias Voltage, Power control	V_{bb}	9.6	V
Input Power	P_{in}	30	mW
Output Power	P_{out}	10	W
Operating Case Temp.	T_c	-40 to +85	°C
Storage Temperature	T_{stg}	-60 to +100	°C

Electrical Characteristics: ($T_c = 25^\circ\text{C}$, $Z_s = Z_l = 50$ Ohms. $V_{cc} = 9.6$ Volts. $V_{bb} = 9.6$ Volts.)

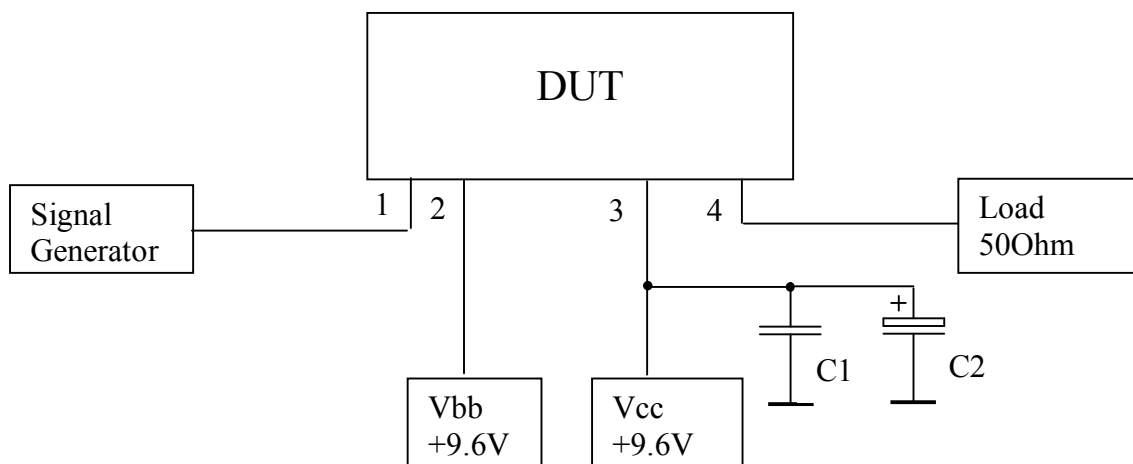
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	39		45	MHz	50 Ohm load
Output Power	P_{out}	5			Watts	
Power Gain	PG	30			dB	
Total Efficiency	η	45	55		%	$P_o=5W$, CW
2 nd Harmonic	F_2		-40	-30	dBc	
3 rd Harmonic	F_3		-40	-30	dBc	
Load Mismatch	Ψ	No degradation or destroy				$P_{in}=10mW$, $P_o=5W$, VSWR =20

Block diagram



- 1- RF input
- 2- Bias Voltage (Vbb), Power Control
- 3- Collector Voltage (Vcc)
- 4- RF Output (Pout)
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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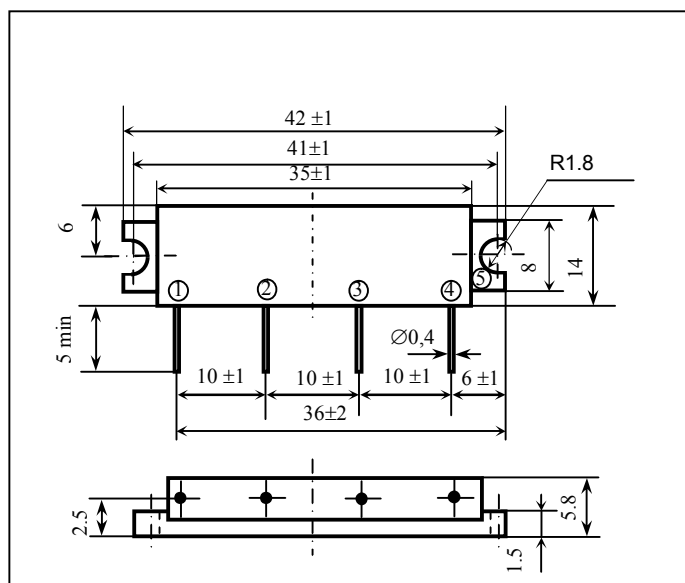
Specification is subject to change without notice

Power RF Amplifier

Power = 5 Watts
 Bandwidth = 45 to 51 MHz
 Gain = 30dB $V_{cc}=9.6$ Volts
 50 Ohms Input/Output Impedances
 Copper Flange

Description

The UM109-1C is 5 Watt FM amplifier module covering a bandwidth of 45-51 MHz. This dual stage amplifier is specifically designed for Land Mobile VHF band portable radio applications.



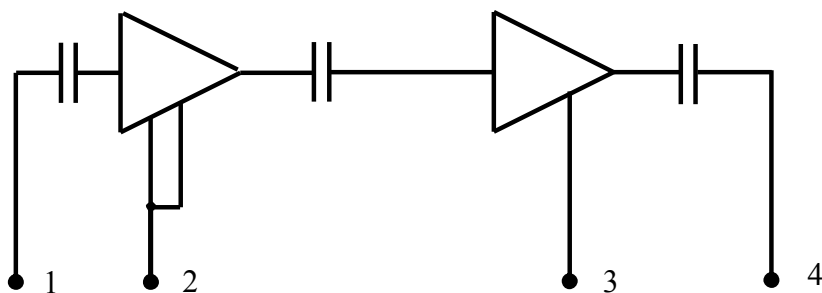
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	V_{cc}	12	V
DC bias Voltage, Power control	V_{bb}	9.6	V
Input Power	P_{in}	30	mW
Output Power	P_{out}	10	W
Operating Case Temp.	T_c	-40 to +85	°C
Storage Temperature	T_{stg}	-60 to +100	°C

Electrical Characteristics: ($T_c = 25^\circ\text{C}$, $Z_s = Z_l = 50$ Ohms. $V_{cc} = 9.6$ Volts. $V_{bb} = 9.6$ Volts.)

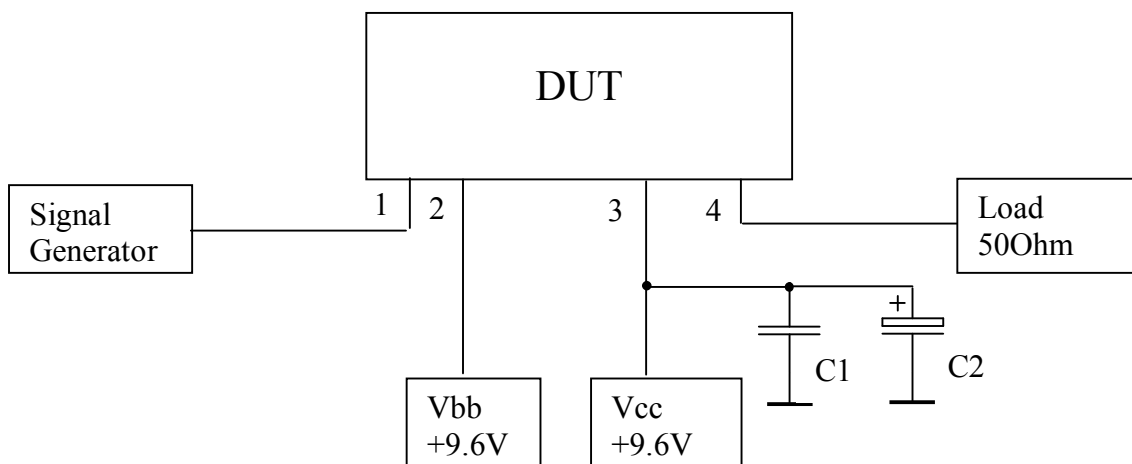
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	45		51	MHz	50 Ohm load
Output Power	P_{out}	5			Watts	
Power Gain	PG	30			dB	
Total Efficiency	η	45	55		%	$P_o=5W$, CW
2 nd Harmonic	F_2		-40	-30	dBc	
3 rd Harmonic	F_3		-40	-30	dBc	
Load Mismatch	Ψ	No degradation or destroy				$P_{in}=10mW$, $P_o=5W$, VSWR =20

Block diagram



- 1- RF input
- 2- Bias Voltage (V_{bb}), Power Control
- 3- Collector Voltage (V_{cc})
- 4- RF Output (P_{out})
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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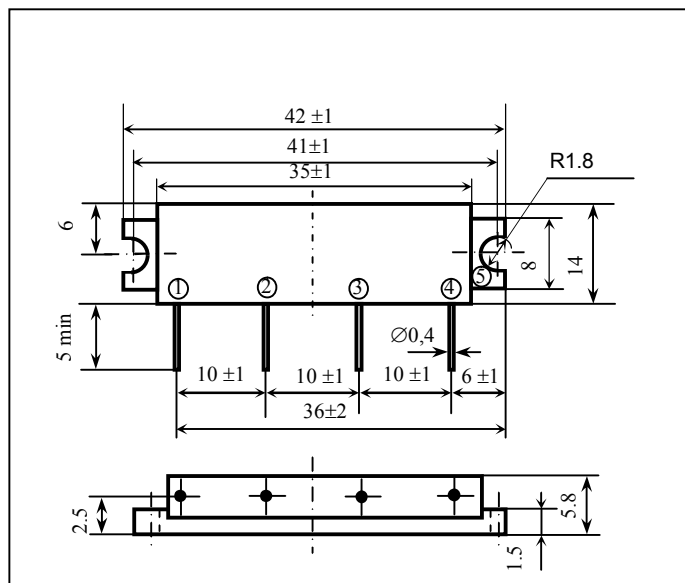
Specification is subject to change without notice

Power RF Amplifier

Power = 5 Watts
 Bandwidth = 51 to 57.5 MHz
 Gain = 30dB $V_{cc}=9.6$ Volts
 50 Ohms Input/Output Impedances
 Copper Flange

Description

The UM109-1D is 5 Watt FM amplifier module covering a bandwidth of 51-57.5 MHz. This dual stage amplifier is specifically designed for Land Mobile VHF band portable radio applications.



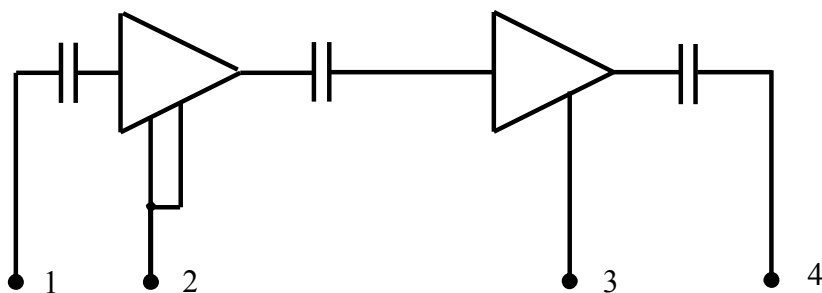
Absolute Maximum Ratings (T=25°C)

Parameter	Symbol	Value	Unit
DC supply Voltage	V_{cc}	12	V
DC bias Voltage, Power control	V_{bb}	9.6	V
Input Power	P_{in}	30	mW
Output Power	P_{out}	10	W
Operating Case Temp.	T_c	-40 to +85	°C
Storage Temperature	T_{stg}	-60 to +100	°C

Electrical Characteristics: ($T_c = 25^\circ\text{C}$, $Z_s = Z_l = 50$ Ohms. $V_{cc} = 9.6$ Volts. $V_{bb} = 9.6$ Volts.)

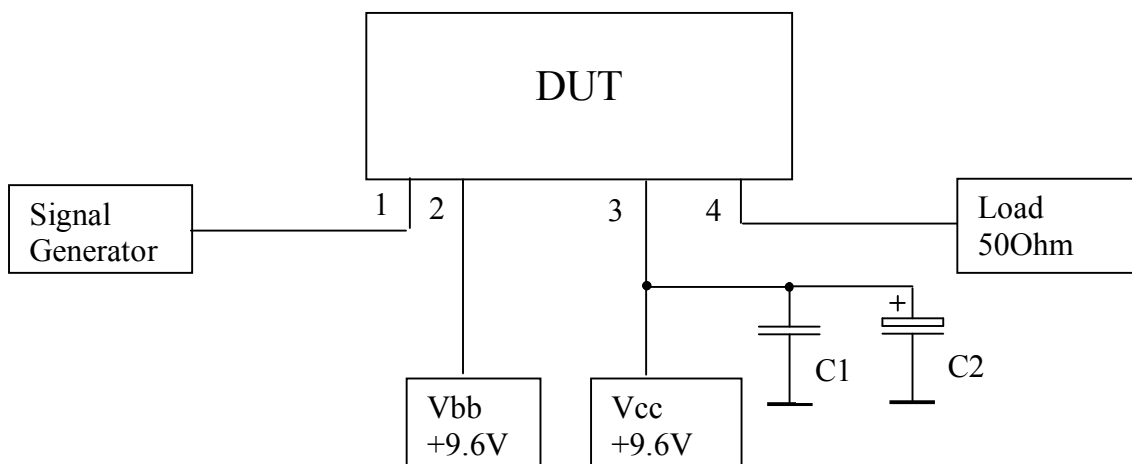
Parameter	Symbol	Min	Typical	Max	Unit	Test Conditions
Frequency Range	BW	51		57.5	MHz	50 Ohm load
Output Power	P_{out}	5			Watts	
Power Gain	PG	30			dB	
Total Efficiency	η	45	55		%	$P_o=5W$, CW
2 nd Harmonic	F_2		-40	-30	dBc	
3 rd Harmonic	F_3		-40	-30	dBc	
Load Mismatch	Ψ	No degradation or destroy				$P_{in}=10mW$, $P_o=5W$, VSWR =20

Block diagram



- 1- RF input
- 2- Bias Voltage (Vbb), Power Control
- 3- Collector Voltage (Vcc)
- 4- RF Output (Pout)
- 5- RF Ground (Case)

Test block diagram



C1- 0.1uF
C2- 100uF

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