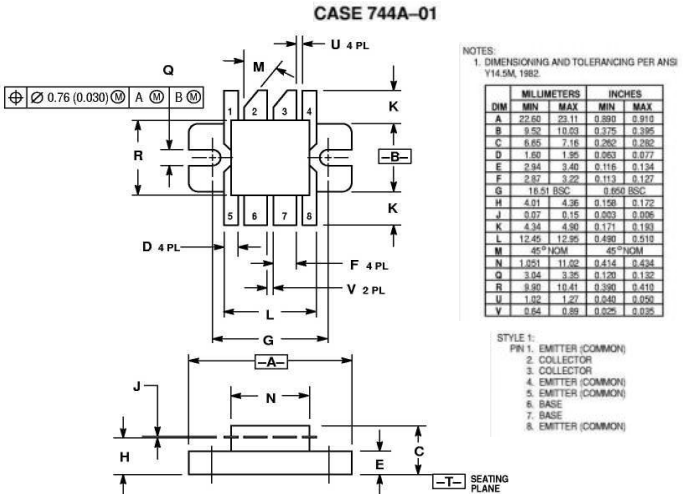
SYNTEZ MICROELECTRONICS

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 ÷ +200	°C
Storage Temperature Range	T_{STG}	-65 ÷ +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.65	°C/W
Total Power Dissipation, T_C=25 °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)	Gp	7.5	—	—	dB
Drain Efficiency (V_{CC} = 28 V, f = 500 MHz, P_{OUT} = 100 W)	η	50	—	—	%

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