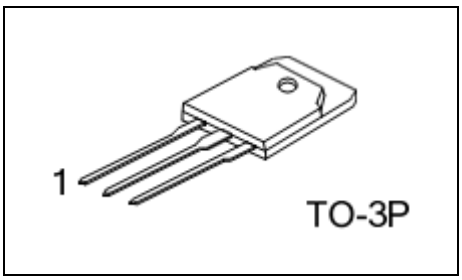
SYNTEZ MICROELECTRONICS

BU941Z

NPN SILICON TRANSISTOR

NPN power Darlington high voltage ignition coil driver

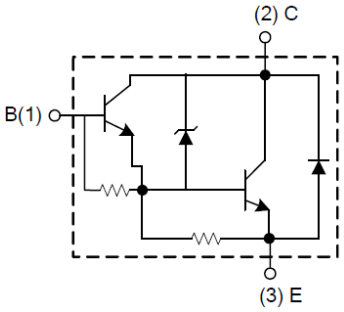


Features

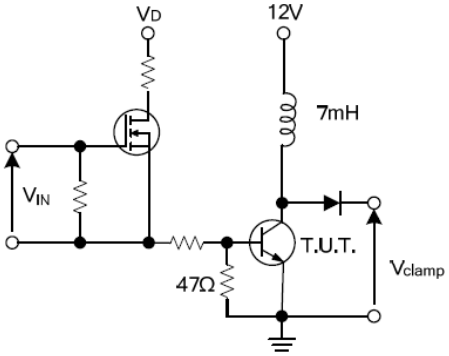
- NPN Darlington
- Integrated antiparallel collector-emitter diode

Applications

- High ruggedness electric ignitions



Internal Schematic Diagram



Switching Time Test Circuit

Absolute Maximum Rating

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CEO}	350	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	15	A
Collector Peak Current	I_{CM}	30	A
Base Current	I_B	1	A
Base Peak Current	I_{BM}	5	W
Total Power Dissipation (T_C=25℃)	P_D	155	W
Junction Temperature	T_J	+175	℃
Storage Temperature	T_{STG}	-65 ~ +175	℃

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

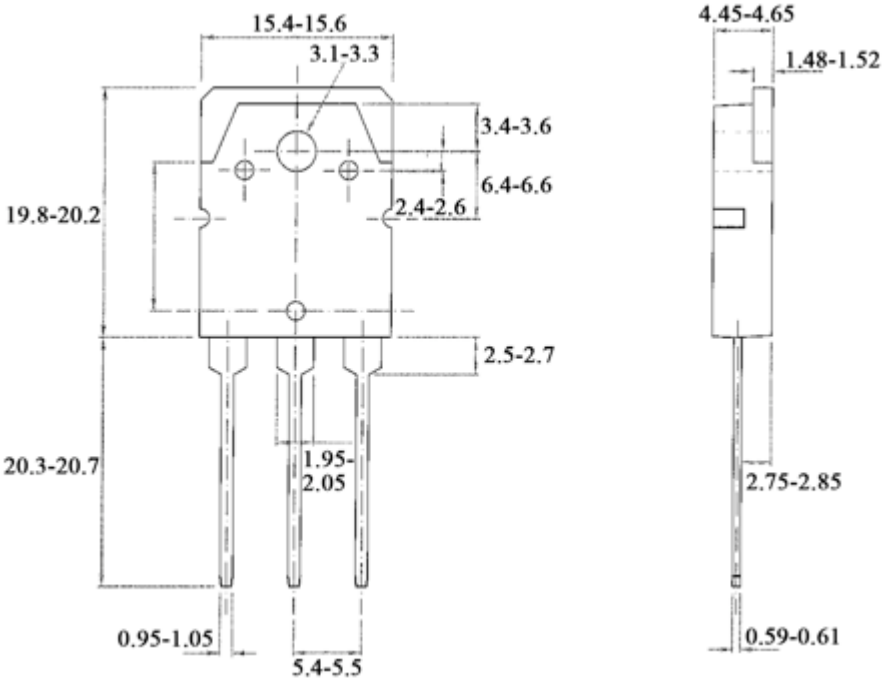
Electrical Characteristics

(Tc=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Clamping Voltage	V_{CL}*	I_C=10mA	350		500	V
Collector Cut-Off Current	I_{CEO}	V_{CE}=300V			100	μA
		V_{CE}=300V, T_J=125°C			0.5	mA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0			20	mA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$*	I_C=8A, I_B=100mA			1.6	V
		I_C=10A, I_B=250mA			1.8	
		I_C=12A, I_B=300mA			2	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$*	I_C=8A, I_B=100mA			2.2	V
		I_C=10A, I_B=250mA			2.5	
		I_C=12A, I_B=300mA			2.7	
DC Current Gain	h_{FE}*	V_{CE}=10V, I_C=5A	300			
Diode Forward Voltage	V_F	I_F=10A			2.5	V
Functional Test		V_{CC}=24V, V_{CLAMP}=400V, L=7mH (see Functional Test Circuit)	10			A
Fall Time	t_F	V_{CC}=12V, V_{CLAMP}=300V, V_{BE}=0, R_{BE}=47Ω, L=7mH, I_C=7A, I_B=70mA (see Fig.1)		0.5		μs
Storage Time	ts			15		

*Pulsed: Pulse duration=300μs, duty cycle 1.5%

TO-3P Package Dimensions



*All dimensions are in millimeters

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