

isc Silicon NPN Power Transistor

MJE8503

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 800V(\text{Min})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

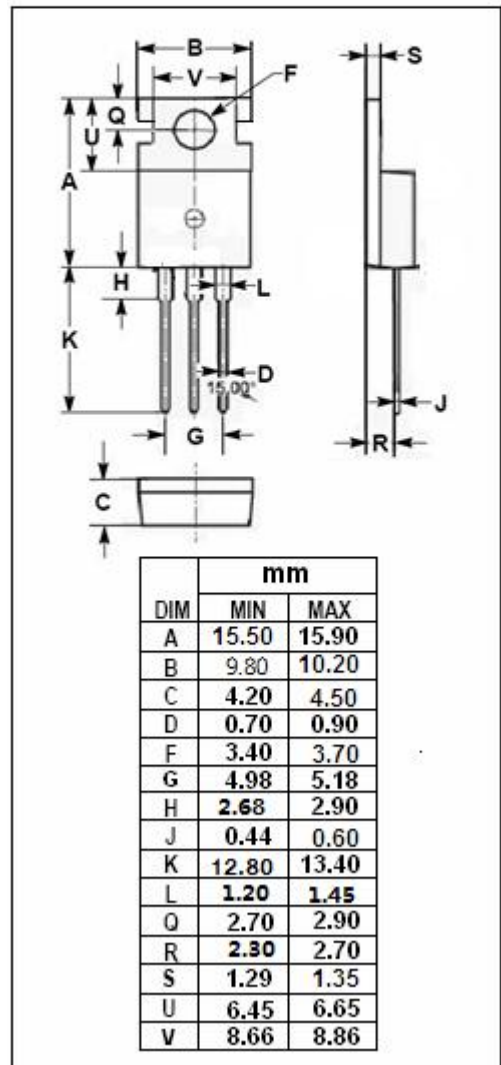
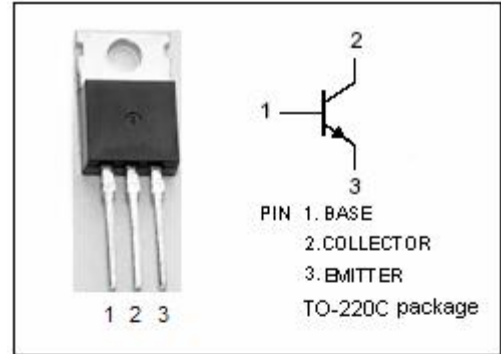
- Designed for high-voltage ,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line operated switch-mode applications.
Typical applications:
- Switching regulators
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector- Base Voltage	1400	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	800	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	4	A
I_{BM}	Base Current-Peak	8	A
P_C	Collector Power Dissipation@ $T_c=25^\circ\text{C}$	80	W
T_J	Junction Temperature	125	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~125	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance,Junction to Case	1.25	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE0(SUS)}	Collector-Emitter Sustaining Voltage	I _C =10mA ; I _B =0	800			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 2.5A; I _B = 1A I _C = 2.5A; I _B = 1A, T _C =100°C			2.0 3.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 2A			5.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2.5A; I _B = 1A I _C = 2.5A; I _B = 1A, T _C =100°C			1.5 1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} =1400V; I _E =0 V _{CB} =1400V; I _E =0; T _C =100°C			0.25 5.0	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 800V; I _B =0 T _C = 100°C			5.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C =0			1.0	mA
h _{FE}	DC Current Gain	I _C = 1A ; V _{CE} = 5V	7.5			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} =1.0kHz	60			pF

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