

isc Silicon NPN Power Transistor

MJ13331

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 250V(\text{Min})$
- 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:

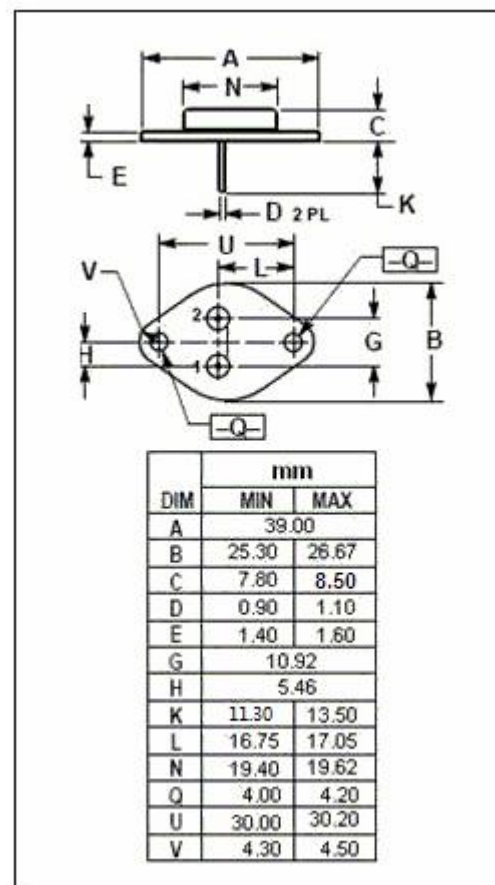
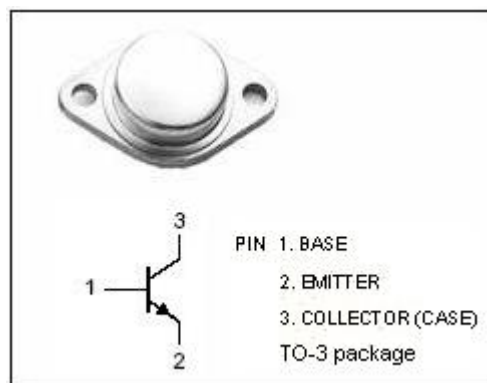
- Switching regulators
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector- Base Voltage	450	V
V_{CEO}	Collector-Emitter Voltage	250	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	20	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current-Continuous	10	A
I_{BM}	Base Current-Peak	20	A
P_C	Collector Power Dissipation@ $T_c=25^\circ\text{C}$	175	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance,Junction to Case	1.0	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**MJ13331****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C =50mA ; I _B =0	250			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 1.5A I _C = 10A; I _B = 1.8A, T _C =100°C			1.5 2.5	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 20A; I _B = 5A			3.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 10A; I _B = 1.5A I _C = 10A; I _B = 1.8A, T _C =100°C			1.8 1.8	V
I _{CBO}	Collector Cutoff Current	V _{CB} =450V; I _E =0 V _{CB} =450V; I _E =0; T _C =150°C			0.25 5.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C =0			0.5	mA
h _{FE-1}	DC Current Gain	I _C = 5A ; V _{CE} = 5V	15		75	
h _{FE-2}	DC Current Gain	I _C = 10A ; V _{CE} = 5V	8			
f _T	Current Gain-Bandwidth Product	I _C = 0.3A ; V _{CE} = 10V; f _{test} =1MHz	5		40	
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} =100kHz	100			pF

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