

isc Silicon NPN Power Transistor**MJ13335****DESCRIPTION**

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 500V(\text{Min})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

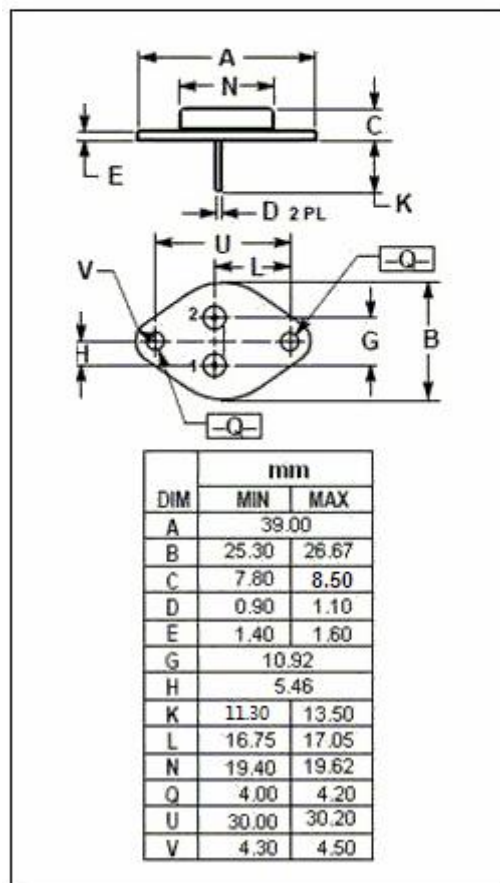
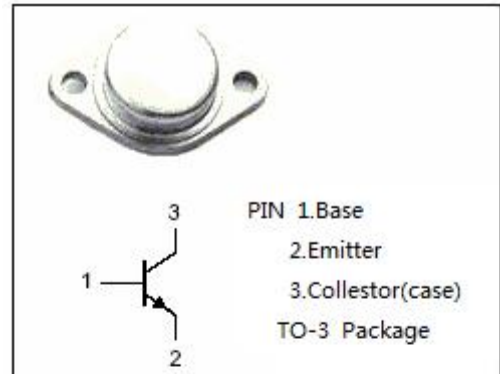
- Switching regulators
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector- Base Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	500	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	15	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	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}$; $I_B=0$	500			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 10\text{A}$; $I_B= 1.5\text{A}$ $I_C= 10\text{A}$; $I_B= 1.8\text{A}$, $T_C=100^{\circ}\text{C}$			1.5 2.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 20\text{A}$; $I_B= 5\text{A}$			3.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 10\text{A}$; $I_B= 1.5\text{A}$ $I_C= 10\text{A}$; $I_B= 1.8\text{A}$, $T_C=100^{\circ}\text{C}$			1.8 1.8	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=800\text{V}$; $I_E=0$ $V_{CB}=800\text{V}$; $I_E=0$; $T_C=150^{\circ}\text{C}$			0.25 5.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 6\text{V}$; $I_C=0$			0.5	mA
h_{FE-1}	DC Current Gain	$I_C= 5\text{A}$; $V_{CE}= 5\text{V}$	15		75	
h_{FE-2}	DC Current Gain	$I_C= 10\text{A}$; $V_{CE}= 5\text{V}$	8			
f_T	Current Gain-Bandwidth Product	$I_C= 0.3\text{A}$; $V_{CE}= 10\text{V}$; $f_{test}=1\text{MHz}$	5		40	
C_{OB}	Output Capacitance	$I_E= 0$; $V_{CB}= 10\text{V}$; $f_{test}=100\text{kHz}$	100			pF

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