

isc Silicon NPN Power Transistor
BD311
DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain- $h_{FE}= 25(\text{Min.})@I_C = 5A$
- Collector-Emitter Saturation Voltage-
: $V_{CE(\text{sat})}= 1.0 \text{ V}(\text{Max})@ I_C = 5A$
- Complement to Type BD312
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

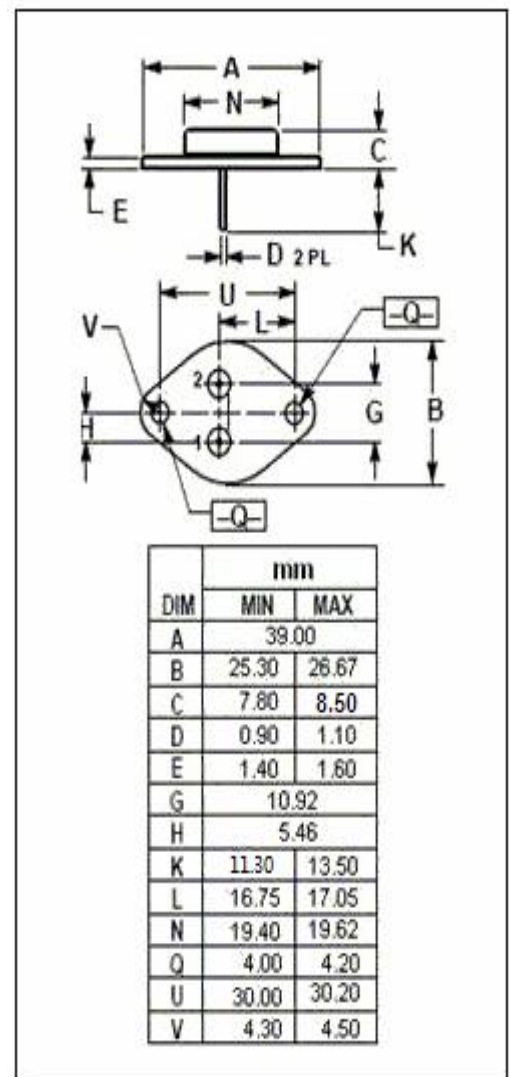
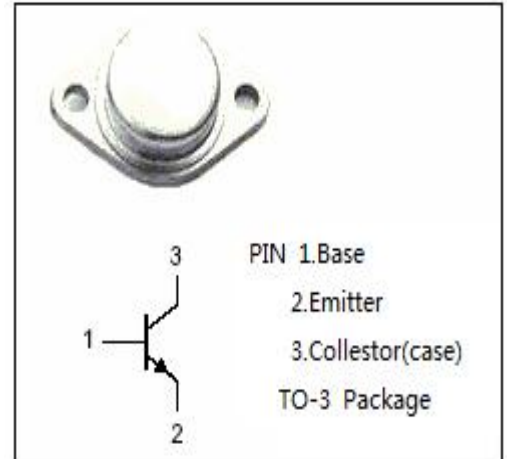
- Designed for high quality amplifiers operating up to 60 watts into 4 ohm load.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	4	A
P_C	Collector Power Dissipation@ $T_C=25^\circ\text{C}$	115	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	1.52	$^\circ\text{C}/\text{W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C =30mA ; I _B =0	60		V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 0.5A		1.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 5A; I _B = 0.5A		1.8	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 5A; V _{CE} = 4V		1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 60V; I _B =0		1.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7.0V; I _C =0		1.0	mA
h _{FE-1}	DC Current Gain	I _C = 5A; V _{CE} = 4V	25		
h _{FE-2}	DC Current Gain	I _C = 10A; V _{CE} = 4V	5		
I _{S/b}	Second Breakdown Collector Current with Base Forward Biased	V _{CE} = 39V,t= 0.5s V _{CE} = 50V,t= 0.5s	2.95 0.60		A
f _T	Current Gain-Bandwidth Product	I _C = 0.5A ; V _{CE} = 10V;f=1.0MHz	4		MHz

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