New Jersey Semi-Conductor Products, Inc.

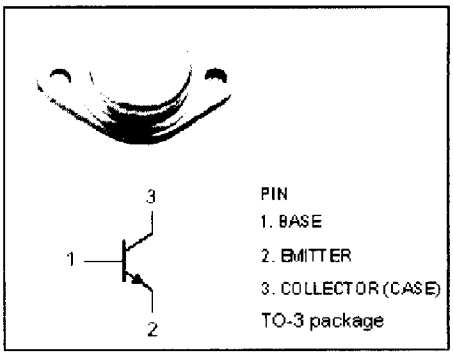
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Silicon NPN Power Transistor — BD311

DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain-h_{FE}= 25(Min.)@I_C = 5A
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 1.0 V(Max)@ I_C = 5A
- Complement to Type BD312

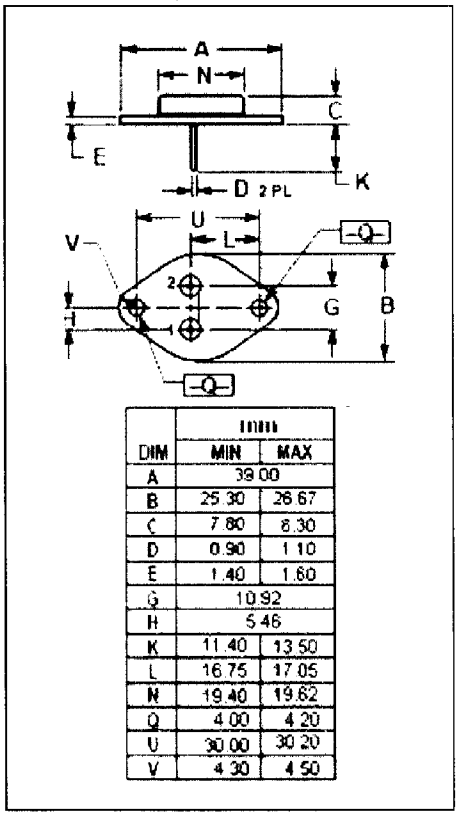


APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃	115	W
T_J	Junction Temperature	200	℃
T_{stg}	Storage Temperature	-65~200	℃



DIM	MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.30
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.40	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.52	℃/W

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Quality Semi-Conductors

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C=200mA ; 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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