

**Silicon PNP Power Transistor**

**BD312**

**DESCRIPTION**

- Excellent Safe Operating Area
- DC Current Gain- $h_{FE} = 25(\text{Min.}) @ I_C = -5A$
- Collector-Emitter Saturation Voltage-  
 $V_{CE(sat)} = -1.0 \text{ V}(\text{Max}) @ I_C = -5A$
- Complement to Type BD311

**APPLICATIONS**

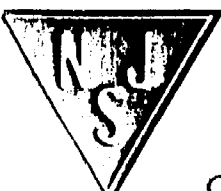
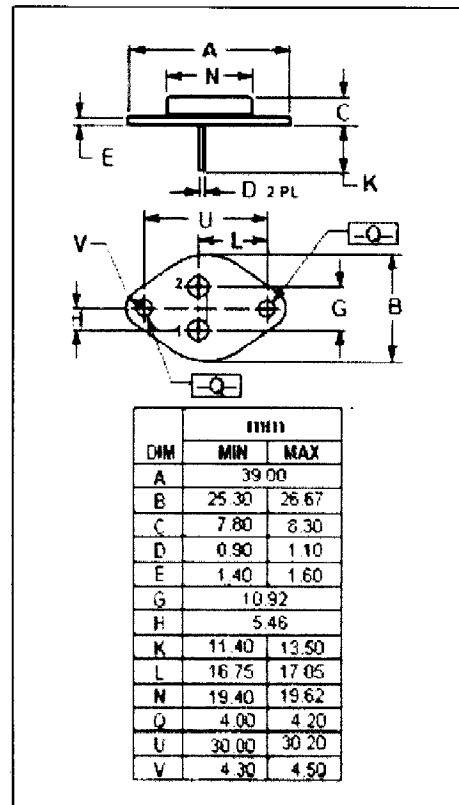
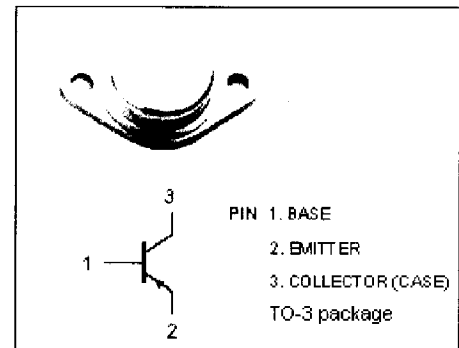
- Designed for high quality amplifiers operating up to 60 watts into 4 ohm load.

**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	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = -200\text{mA}; I_B = 0$	-60		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -5\text{A}; I_B = -0.5\text{A}$		-1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -5\text{A}; I_B = -0.5\text{A}$		-1.8	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -5\text{A}; V_{CE} = -4\text{V}$		-1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -60\text{V}; I_B = 0$		-1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -7.0\text{V}; I_C = 0$		-1.0	mA
$h_{FE-1}$	DC Current Gain	$I_C = -5\text{A}; V_{CE} = -4\text{V}$	25		
$h_{FE-2}$	DC Current Gain	$I_C = -10\text{A}; V_{CE} = -4\text{V}$	5		
$I_{s/b}$	Second Breakdown Collector Current with Base Forward Biased	$V_{CE} = -39\text{V}; t = 0.5\text{s}$ $V_{CE} = -50\text{V}; t = 0.5\text{s}$	-2.95 -0.60		A
$f_T$	Current Gain-Bandwidth Product	$I_C = -0.5\text{A}; V_{CE} = -10\text{V}; f = 1.0\text{MHz}$	4		MHz