

**isc Silicon NPN Power Transistor**

**BD112**

**DESCRIPTION**

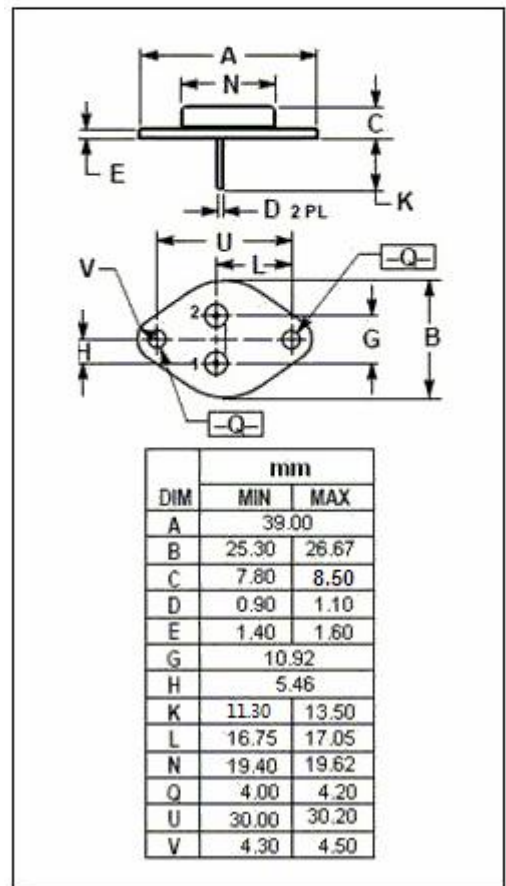
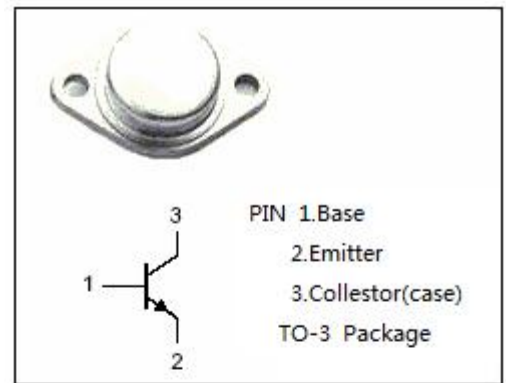
- Excellent Safe Operating Area
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 60V(\text{Min})$
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 1.0V(\text{Max}) @ I_C = 5A$
- Good Linearity of  $h_{FE}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation.

**APPLICATIONS**

- Designed for general-purpose switching and amplifier applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	12	A
$I_{CM}$	Collector Current-Peak	15	A
$I_B$	Base Current-Continuous	2	A
$P_C$	Collector Power Dissipation@ $T_C=75^\circ\text{C}$	15	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



**isc Silicon NPN Power Transistors****BD112****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=30\text{mA}$ ; $I_B=0$	60		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 5\text{A}$ ; $I_B= 0.5\text{A}$		1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 10\text{A}$ ; $I_B= 1\text{A}$		2.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C= 5\text{A}$ ; $I_B= 0.5\text{A}$		2.0	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C= 10\text{A}$ ; $I_B= 1\text{A}$		3.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= 80\text{V}$ ; $I_E= 0$		0.1	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE}= 60\text{V}$ ; $I_B=0$		0.5	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 7.0\text{V}$ ; $I_C=0$		0.1	mA
$h_{FE-1}$	DC Current Gain	$I_C= 1\text{A}$ ; $V_{CE}= 4\text{V}$	50	130	
$h_{FE-2}$	DC Current Gain	$I_C= 5\text{A}$ ; $V_{CE}= 4\text{V}$	20		
$h_{FE-3}$	DC Current Gain	$I_C= 10\text{A}$ ; $V_{CE}= 4\text{V}$	8		
$f_T$	Current Gain-Bandwidth Product	$I_C= 0.5\text{A}$ ; $V_{CE}= 10\text{V}$ ; $f=1.0\text{MHz}$	30		MHz

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