

**isc Silicon NPN Power Transistor**
**BD131**
**DESCRIPTION**

- DC Current Gain-  
:  $h_{FE} = 40(\text{Min}) @ I_C = 0.5A$
- Collector-Emitter Breakdown Voltage -  
:  $V_{(BR)CEO} = 45V(\text{Min.})$
- Complement to type BD132
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

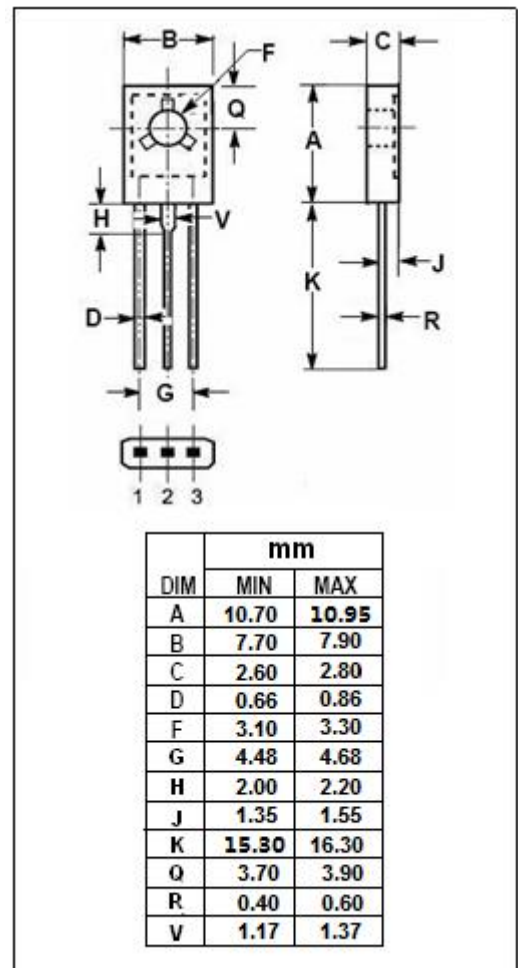
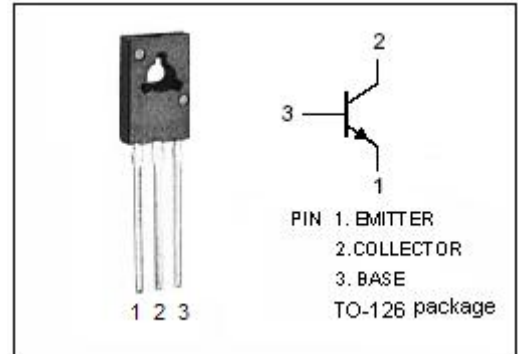
- Designed for medium power and general purpose applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	70	V
$V_{CEO}$	Collector-Emitter Voltage	45	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	3	A
$I_{CM}$	Collector Current-Peak	6	A
$I_{BM}$	Base Current-Peak	0.5	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	15	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	6	$^\circ\text{C}/\text{W}$



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BD131

## ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	45			V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 0.5A; I <sub>B</sub> = 50mA			0.3	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.2A			0.7	V
V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 0.5A; I <sub>B</sub> = 50mA			1.2	V
V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.2A			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 40V; I <sub>E</sub> = 0 V <sub>CB</sub> = 40V; I <sub>E</sub> = 0, T <sub>C</sub> =150°C			50 10	nA μA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 3V; I <sub>C</sub> =0			50	nA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 12V	40			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 2A; V <sub>CE</sub> = 1V	20			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.25A; V <sub>CE</sub> = 5V	60			MHz

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