

**isc Silicon NPN Power Transistor**
**BD331**
**DESCRIPTION**

- High DC Current Gain
- Complement to type BD332
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

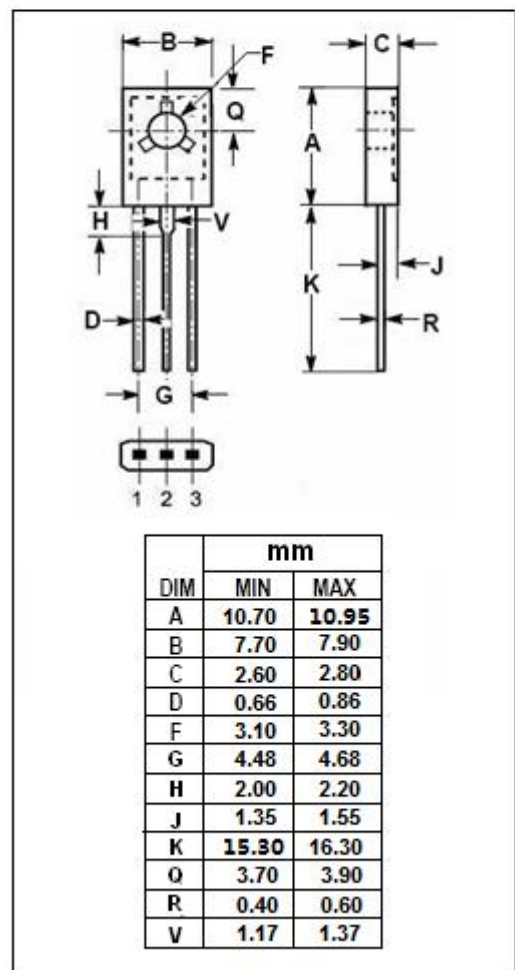
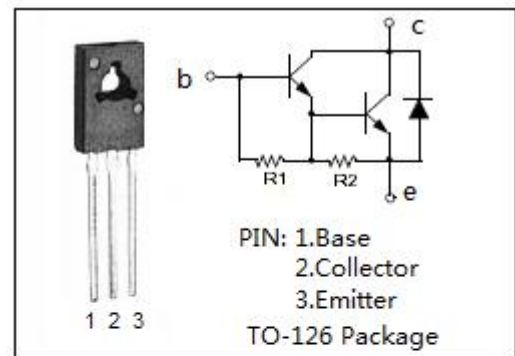
- NPN epitaxial base transistors in monolithic Darlington circuit for audio output stages and general amplifier and switching applications.

**ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CB0</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>EB0</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current-Continuous	6	A
I <sub>BM</sub>	Base Current-Peak	0.15	A
P <sub>C</sub>	Collector Power Dissipation @ T <sub>C</sub> =25°C	60	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-65~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	2.08	°C/W
R <sub>th j-a</sub>	Thermal Resistance, Junction to Ambient	100	°C/W



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BD331

## 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> = 10mA; I <sub>B</sub> = 0	60			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 12mA			2.0	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 3A; V <sub>CE</sub> = 3V			2.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 60V; I <sub>E</sub> = 0 V <sub>CB</sub> = 60V; I <sub>E</sub> = 0, T <sub>C</sub> =150°C			0.1 1.0	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			5	mA
h <sub>FE-1</sub> *	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 3V		1900		
h <sub>FE-2</sub> *	DC Current Gain	I <sub>C</sub> = 3A; V <sub>CE</sub> =3V	750			
h <sub>FE-3</sub> *	DC Current Gain	I <sub>C</sub> = 6A; V <sub>CE</sub> = 3V		3000		

\*:Measured under pulse conditions: t<sub>p</sub><300us, σ<2%**NOTICE:**

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