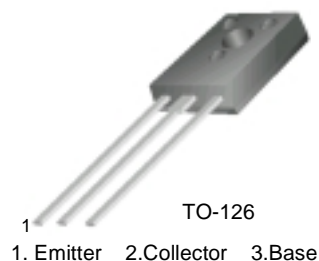


# BD135/137/139

## Medium Power Linear and Switching Applications

- Complement to BD136, BD138 and BD140 respectively



## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage : BD135	45	V
	: BD137	60	V
	: BD139	80	V
$V_{CEO}$	Collector-Emitter Voltage : BD135	45	V
	: BD137	60	V
	: BD139	80	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current (DC)	1.5	A
$I_{CP}$	Collector Current (Pulse)	3.0	A
$I_B$	Base Current	0.5	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	12.5	W
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	1.25	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

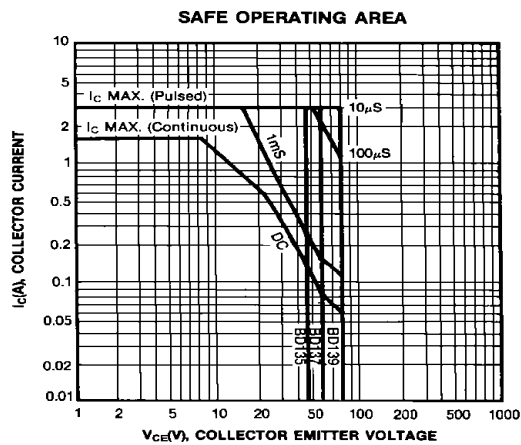
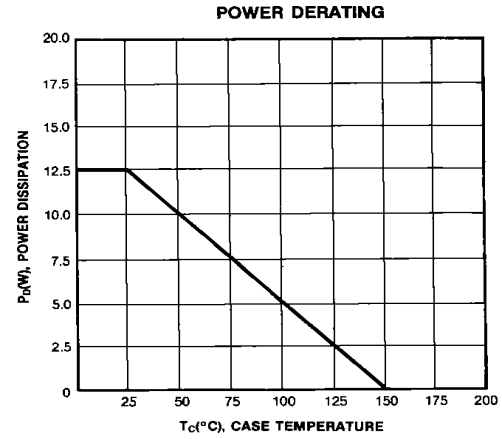
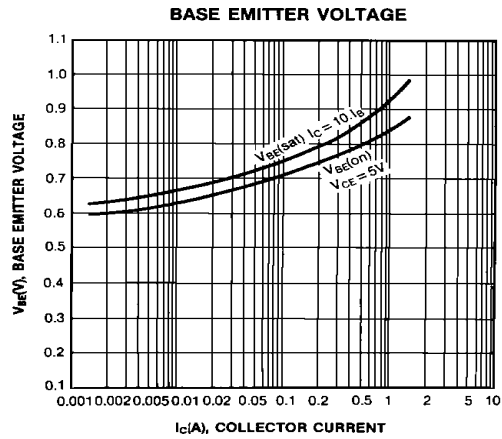
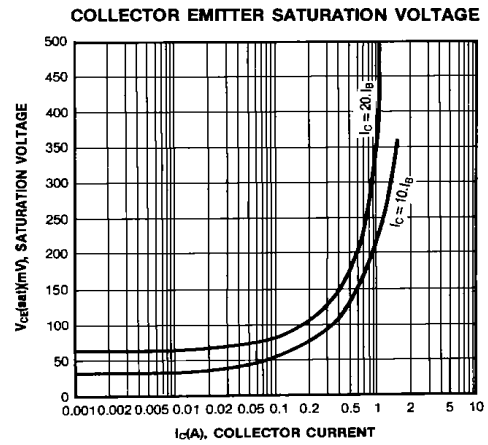
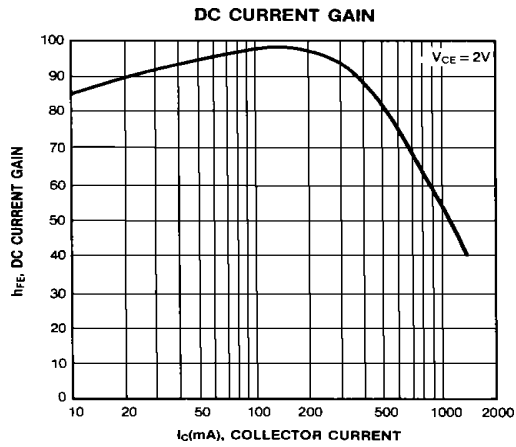
### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
V <sub>CEO(sus)</sub>	Collector-Emitter Sustaining Voltage : BD135 : BD137 : BD139	I <sub>C</sub> = 30mA, I <sub>B</sub> = 0	45 60 80			V V V
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0			0.1	μA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0			10	μA
h <sub>FE1</sub> h <sub>FE2</sub> h <sub>FE3</sub>	DC Current Gain : ALL DEVICE : ALL DEVICE : BD135 : BD137, BD139	V <sub>CE</sub> = 2V, I <sub>C</sub> = 5mA V <sub>CE</sub> = 2V, I <sub>C</sub> = 0.5A V <sub>CE</sub> = 2V, I <sub>C</sub> = 150mA	25 25 40 40		250 160	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA			0.5	V
V <sub>BE(on)</sub>	Base-Emitter ON Voltage	V <sub>CE</sub> = 2V, I <sub>C</sub> = 0.5A			1	V

## $h_{FE}$ Classification

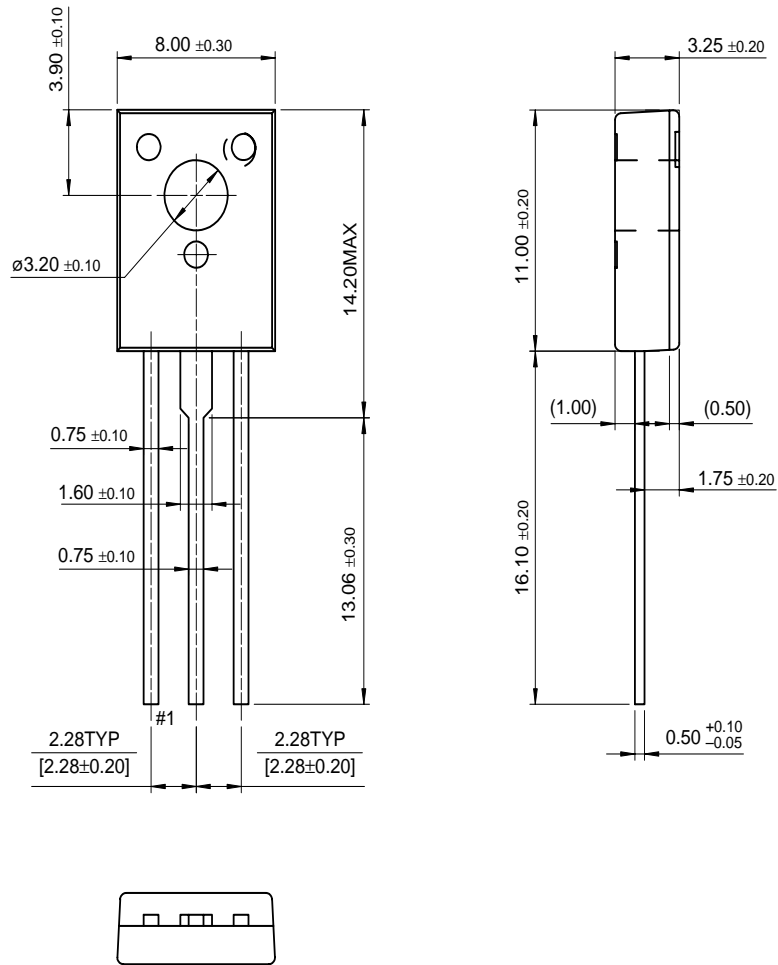
Classification	6	10	16
$h_{FE3}$	40 ~ 100	63 ~ 160	100 ~ 250

# Typical Characteristics



# Package Dimensions

## TO-126



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FACT Quiet Series™	QS™	
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GTO™	SuperSOT™-6	
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