

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°C unless otherwise noted

Symbol	Para	meter	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
Pc	Collector Dissipation (T _C =25°	C)	12.5	W
P _C	Collector Dissipation (T _a =25°C	<u>()</u>	1.25	W
TJ	Junction Temperature		150	°C
T _{STG}	Storage Temperature		- 55 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
V _{CEO} (sus)	Collector-Emitter Sustaining Voltage					
	: BD135	I _C = 30mA, I _B = 0	45			V
	: BD137		60			V
	: BD139		80			V
I _{CBO}	Collector Cut-off Current	V _{CB} = 30V, I _E = 0			0.1	αA
I _{EBO}	Emitter Cut-off Current	$V_{EB} = 5V, I_{C} = 0$			10	œΑ
h _{FE1}	DC Current Gain : ALL DEVICE	V _{CE} = 2V, I _C = 5mA	25			
h _{FE2}	: ALL DEVICE	$V_{CE} = 2V, I_{C} = 0.5A$	25			
h _{FE3}	: BD135	$V_{CE} = 2V, I_{C} = 150mA$	40		250	
	: BD137, BD139		40		160	
V _{CE} (sat)	Collector-Emitter Saturation Voltage	I _C = 500mA, I _B = 50mA			0.5	V
V _{BE} (on)	Base-Emitter ON Voltage	V _{CE} = 2V, I _C = 0.5A			1	V

h_{FE} Classification

Classification	6	10	16	
h _{FE3}	40 ~ 100	63 ~ 160	100 ~ 250	

Typical Characteristics

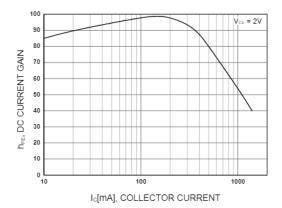


Figure 1. DC current Gain

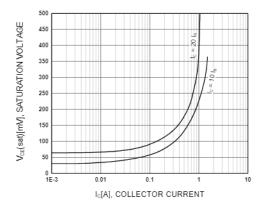


Figure 2. Collector-Emitter Saturation Voltage

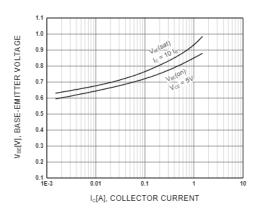


Figure 3. Base-Emitter Voltage

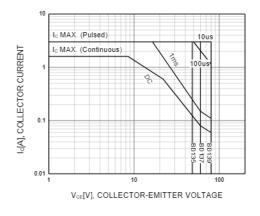


Figure 4. Safe Operating Area

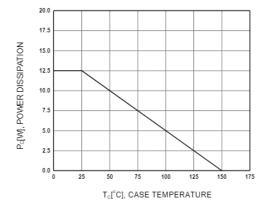
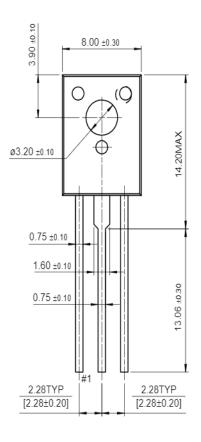


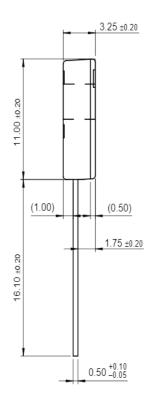
Figure 5. Power Derating

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Package Demensions

TO-126







Dimensions in Millimeters

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