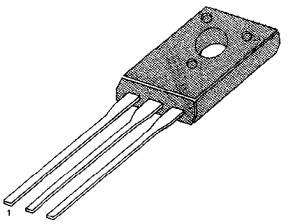
BD135/137/139 NPN EPITAXIAL SILICON TRANSISTOR

MEDIUM POWER LINEAR AND SWITCHING APPLICATIONS

• Complement to BD136, BD138 and BD140 respectively

TO-126



1. Emitter 2.Collector 3.Base

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector Base Voltage : BD135	V_{CBO}	45	V
: BD137		60	V
: BD139		80	V
Collector Emitter Voltage : BD135	V_{CEO}	45	V
: BD137		60	V
: BD139		80	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	1.5	A
Collector Current (Pulse)	I_C	3.0	A
Base Current	I_B	0.5	A
Collector Dissipation (T_C=25°C)	P_C	12.5	W
Collector Dissipation (T_A=25°C)	P_C	1.25	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	- 55 ~ 150	°C

ELECTRICAL CHARACTERISTICS (T_C=25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Emitter Sustaining Voltage : BD135	V_{CEO}(sus)	I_C = 30mA, I_B = 0	45			V
: BD137			60			V
: BD139			80			V
Collector Cutoff Current	I_{CBO}	V_{CB} = 30V, I_E = 0			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0			10	μA
DC Current Gain : ALL DEVICE	h_{FE1}	V_{CE} = 2V, I_C = 5mA	25			
: ALL DEVICE	h_{FE2}	V_{CE} = 2V, I_C = 0.5A	25			
: BD135	h_{FE3}	V_{CE} = 2V, I_C = 150mA	40		250	
: BD137, BD139			40		160	
Collector Emitter Saturation Voltage	V_{CE}(sat)	I_C = 500mA, I_B = 50mA			0.5	V
Base Emitter On Voltage	V_{BE}(on)	V_{CE} = 2V, I_C = 0.5A			1	V

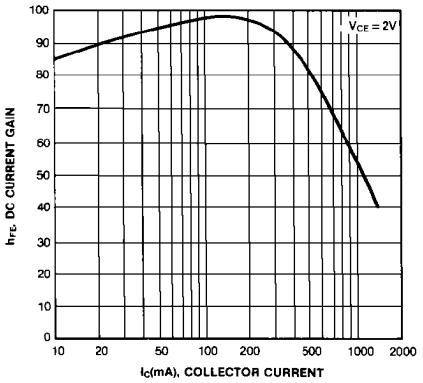
h_{FE}(3) CLASSIFICATION

Classification	6	10	16
h_{FE}3	40 - 100	63 - 160	100 - 250

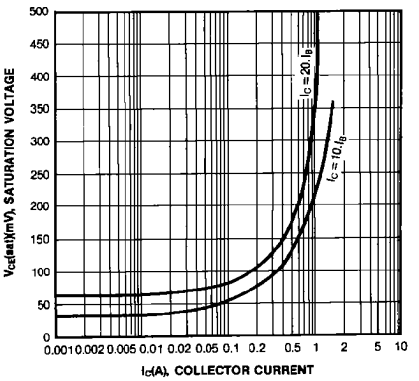
Rev. B

FAIRCHILD SEMICONDUCTOR™

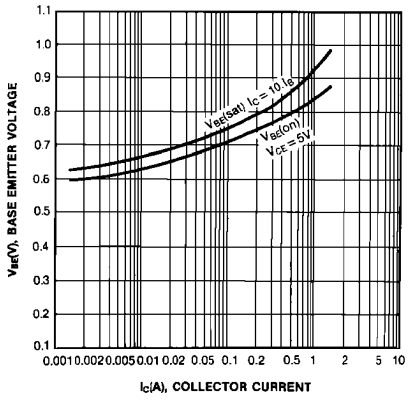
DC CURRENT GAIN



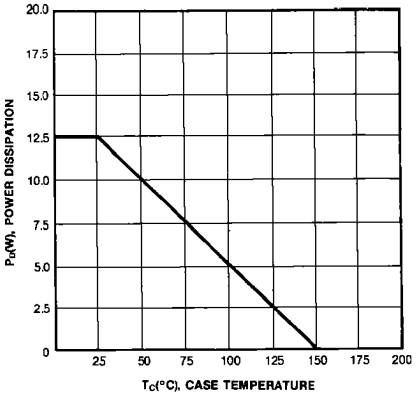
COLLECTOR EMITTER SATURATION VOLTAGE



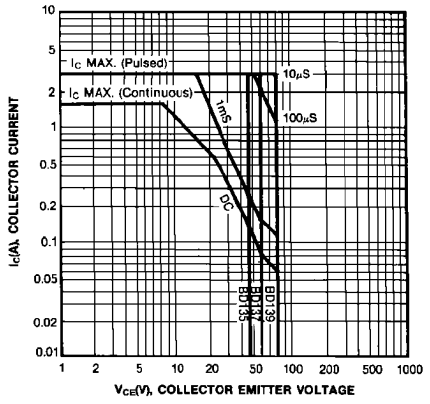
BASE EMITTER VOLTAGE



POWER DERATING



SAFE OPERATING AREA



FAIRCHILD SEMICONDUCTOR™