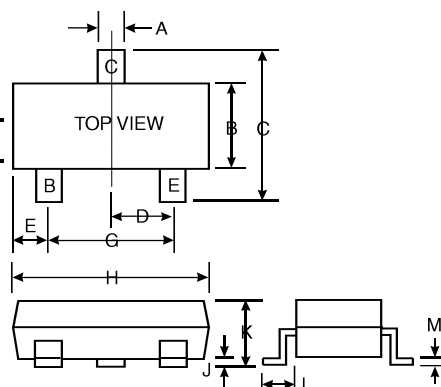


Features

- 310 mW Power Dissipation
- Ideally Suited for Automatic Insertion
- Epitaxial Planar Die Construction
- For Switching, AF Driver and Amplifier Applications
- Complementary NPN Types Available (BC817)

Mechanical Data

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Mounting Position: Any
- Pin Connections: See Diagram
- Marking: BC807-16 5A
BC807-25 5B
BC807-40 5C
- Approx. Weight: 0.008 grams



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.65	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.178
All Dimensions in mm		

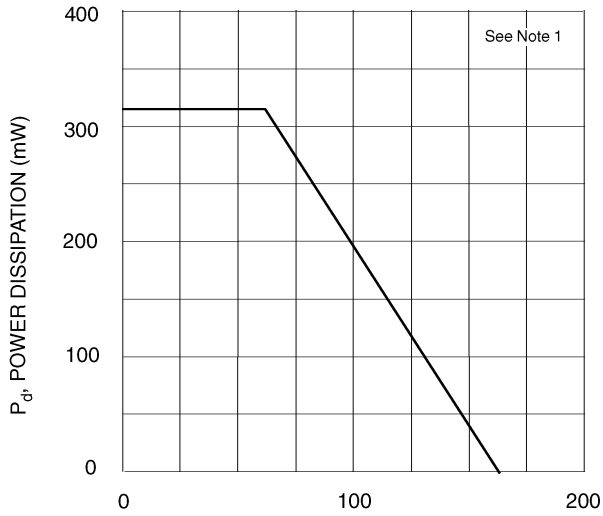
Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Emitter Voltage	-V _{CEO}	45	V
Emitter-Base Voltage	-V _{EBO}	5.0	mA
Collector Current	-I _C	500	mA
Peak Collector Current	-I _{CM}	1000	mA
Peak Emitter Current	-I _{EM}	1000	mA
Power Dissipation at T _{SB} = 50°C (Note 1)	P _d	310	mW
Operating and Storage Temperature Range	T _j , T _{STG}	-65 to +150	°C

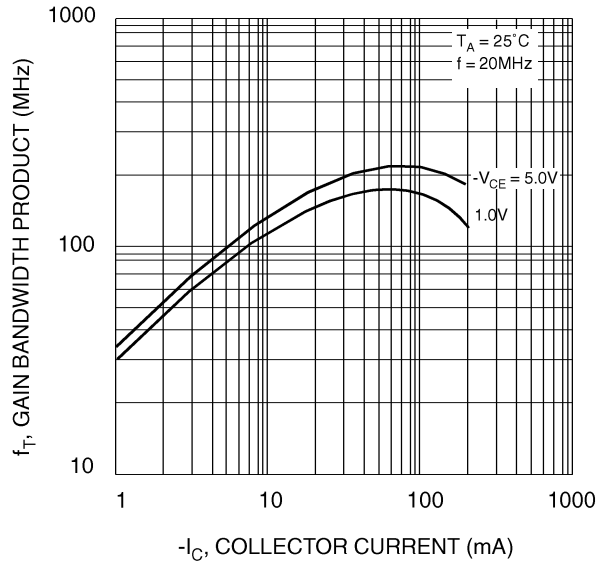
Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
DC Current Gain	h _{FE}	100	—	250	—	-V _{CE} = 1.0V, -I _C = 100mA
		160		400		
		250		600		
		60		—		
		100		—		
		170		—		
Thermal Resistance, Junction to Substrate Backside	R _{JSB}	—	—	320	K/W	Note 1
Thermal Resistance, Junction to Ambient Air	R _{JA}	—	—	400	K/W	Note 1
Collector-Emitter Saturation Voltage	-V _{CE(SAT)}	—	—	0.7	V	-I _C = 500mA, I _B = 50mA
Base-Emitter Voltage	-V _{BE}	—	—	1.2	V	-V _{CE} = 1.0V, -I _C = 300mA
Collector-Emitter Cutoff Current	-I _{CES}	—	—	100 5.0	nA μA	-V _{CE} = 45V -V _{CE} = 25V, T _j = 150°C
Emitter-Base Cutoff Current	-I _{EBO}	—	—	100	nA	-V _{EB} = 4.0V
Gain Bandwidth Product	f _T	100	—	—	MHz	-V _{CE} = 5.0V, -I _C = 10mA, f = 50MHz
Collector-Base Capacitance	C _{CB0}	—	—	12	pF	-V _{CB} = 10V, f = 1.0MHz

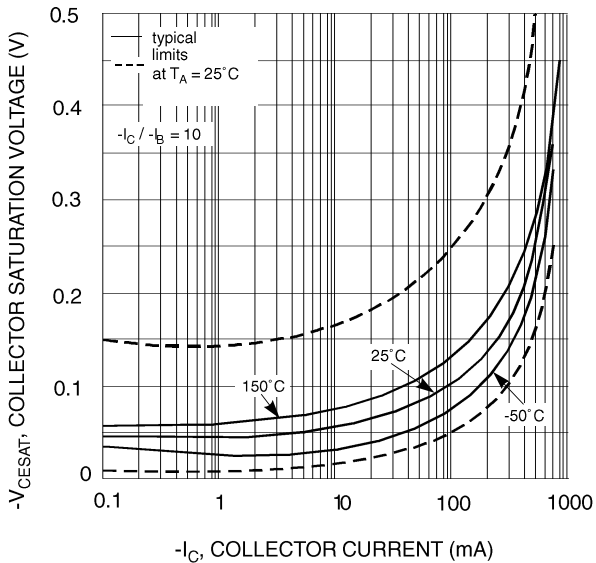
Notes: 1. Device mounted on ceramic substrate 0.7mm; 2.5cm² area.



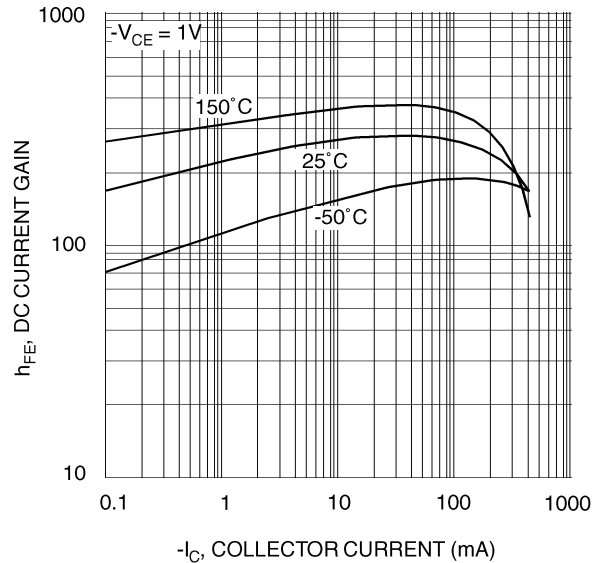
T_{SB} , SUBSTRATE TEMPERATURE ($^{\circ}C$)
Fig. 1, Power Derating Curve



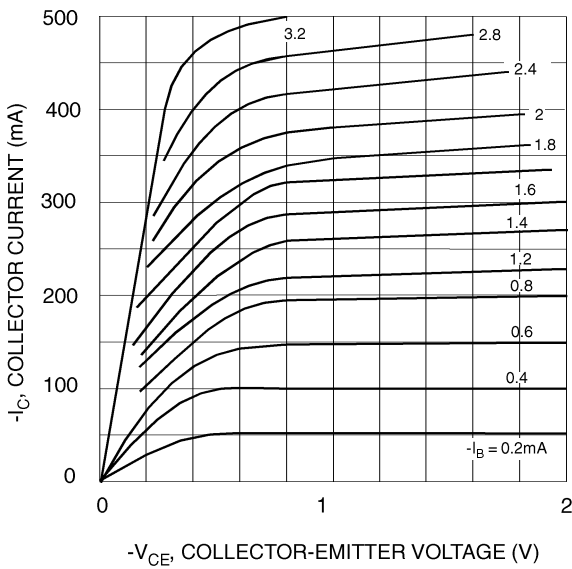
$-I_C$, COLLECTOR CURRENT (mA)
Fig. 2, Gain-Bandwidth Product vs Collector Current



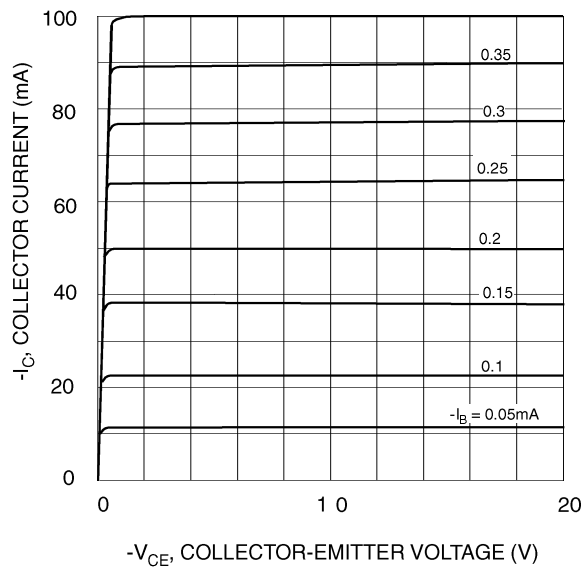
$-I_C$, COLLECTOR CURRENT (mA)
Fig. 3, Collector Sat. Voltage vs Collector Current



$-I_C$, COLLECTOR CURRENT (mA)
Fig. 4, DC Current Gain vs Collector Current



$-V_{CE}$, COLLECTOR-EMITTER VOLTAGE (V)
Fig. 5, Typical Emitter-Collector Characteristics



$-V_{CE}$, COLLECTOR-EMITTER VOLTAGE (V)
Fig. 6, Typical Emitter-Collector Characteristics