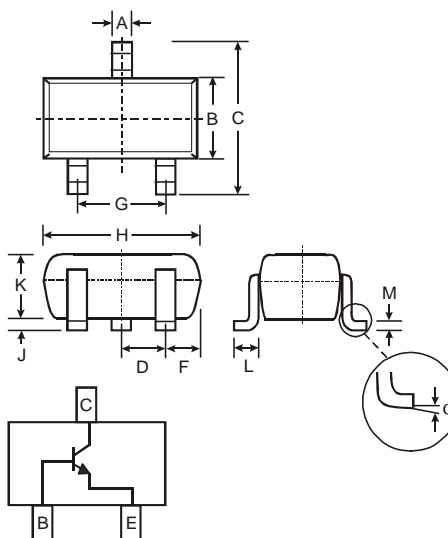


Features

- Ideally Suited for Automated Insertion
- Epitaxial Planar Die Construction
- For Switching, AF Driver and Amplifier Applications
- Complementary PNP Types Available (BC807)
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Pin Connections: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
F	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°

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	V
Collector Current	I _C	800	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
Thermal Resistance, Junction to Substrate Backside (Note 1)	R _{θSB}	320	°C/W
Thermal Resistance, Junction to Ambient Air (Note 1)	R _{θJA}	403	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic (Note 2)	Symbol	Min	Max	Unit	Test Condition
DC Current Gain	h _{FE}	100	250	—	V _{CE} = 1.0V, I _C = 100mA
		160	400		
		250	600		
		60	—		V _{CE} = 1.0V, I _C = 300mA
		100	—		
		170	—		
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	nA	V _{CE} = 45V
			5.0	μA	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.
 2. Short duration pulse test used to minimize self-heating effect.
 3. No purposefully added lead. Halogen and Antimony Free.
 4. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.

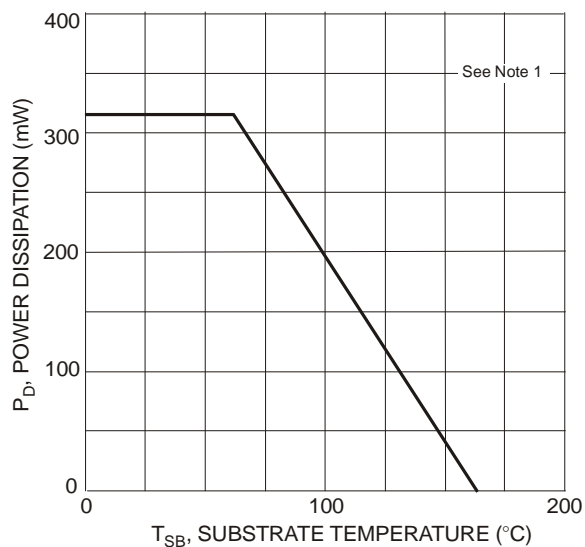


Fig. 1 Power Derating Curve

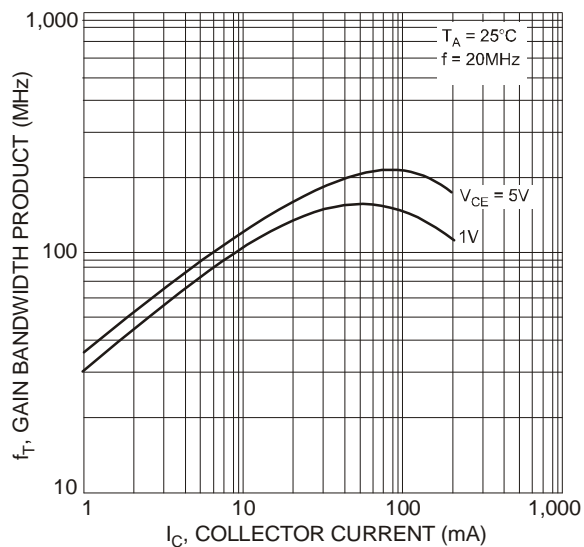


Fig. 2 Gain-Bandwidth Product vs. Collector Current

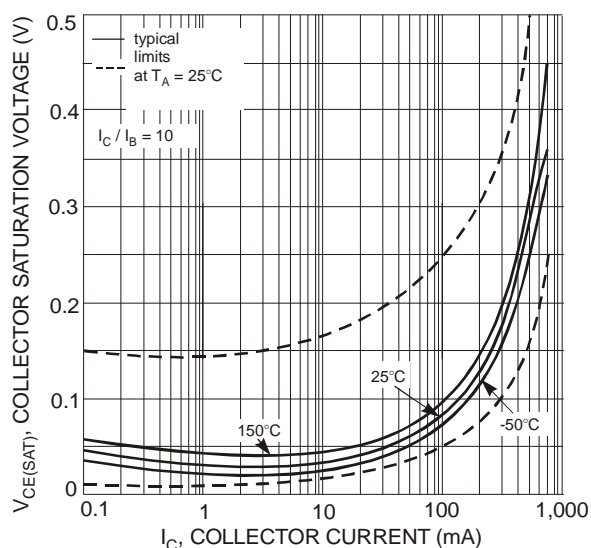


Fig. 3 Collector Saturation Voltage vs. Collector Current

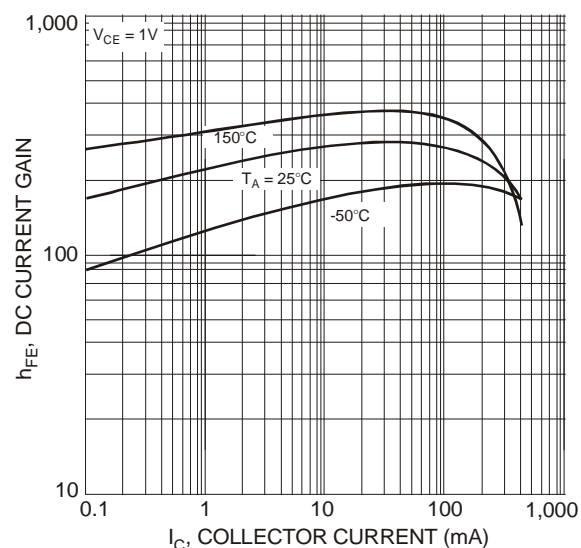


Fig. 4 DC Current Gain vs. Collector Current

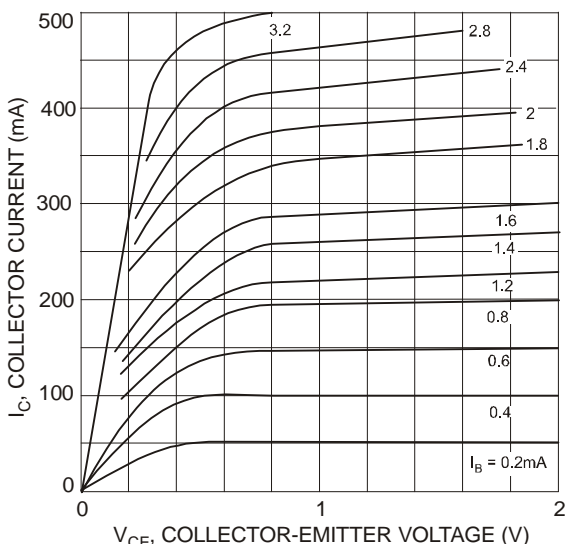


Fig. 5 Typical Emitter-Collector Characteristics

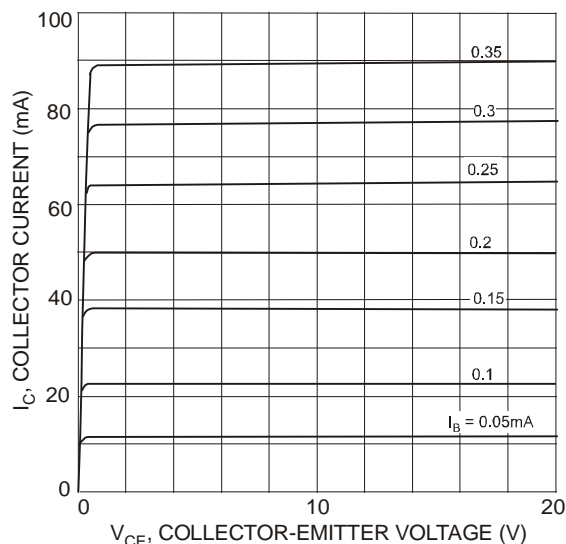


Fig. 6 Typical Emitter-Collector Characteristics

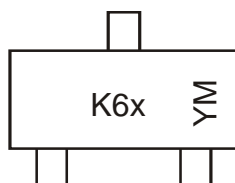
Ordering Information (Note 5)

Device*	Packaging	Shipping
BC817-xx-7-F	SOT-23	3000/Tape & Reel

*xx = gain group, e.g. BC817-16-7-F.

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



K6x = Product Type Marking Code:

K6A = BC817-16

K6B = BC817-25

K6C = BC817-40

YM = Date Code Marking

Y = Year ex: T = 2006

M = Month ex: 9 = September

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.