



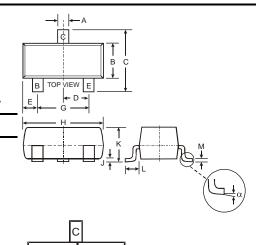
BC807-16/ -25/ -40

Features

- Ideally Suited for Automatic Insertion
- **Epitaxial Planar Die Construction**
- For Switching, AF Driver and Amplifier Applications
- Complementary NPN Types Available (BC817)
- 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-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Pin Connections: See Diagram
- Ordering Information: See Page 3
- Marking Information: See Page 3
 - BC807-16 5A, K5A
 - BC807-25 5B, K5B BC807-40 5C, K5C
- Weight: 0.008 grams (approximate)



SOT-23									
Dim	Min	Max							
Α	0.37	0.51							
В	1.20	1.40							
C	2.30	2.50							
D	0.89	1.03							
Е	0.45	0.60							
G	1.78	2.05							
Н	2.80	3.00							
J	0.013	0.10							
K	0.903	1.10							
L	0.45	0.61							
М	0.085	0.180							
α	0°	8°							
All Dimensions in mm									

Maximum Ratings @T_A = 25°C unless otherwise specified

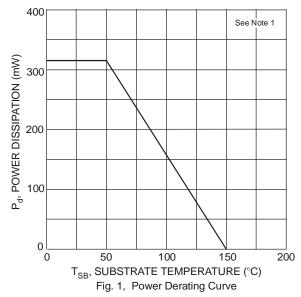
Characteristic	Symbol	Value	Unit	
Collector-Emitter Voltage	V_{CEO}	-45	V	
Emitter-Base Voltage	V_{EBO}	-5.0	V	
Collector Current	Ic	-500	mA	
Peak Collector Current	I _{CM}	-1000	mA	
Peak Emitter Current	I _{EM}	-1000	mA	
Power Dissipation at T _{SB} = 50°C (Note 1)	P _d	310	mW	
Thermal Resistance, Junction to Substrate Backside (Note 1)	$R_{ hetaJSB}$	320	°C/W	
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{ heta JA}$	403	°C/W	
Operating and Storage Temperature Range	T_{j}, T_{STG}	-65 to +150	°C	

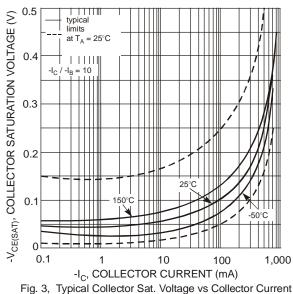
Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic (I	Symbol	Min	Тур	Max	Unit	Test Condition	
DC Current Gain	Current Gain Group -16 -25 -40 Current Gain Group -16 -25 -40	h _{FE}	100 160 250 60 100 170	_	250 400 600 — —	_	$V_{CE} = -1.0V, I_{C} = -100mA$ $V_{CE} = -1.0V, I_{C} = -300mA$
Collector-Emitter Saturation Voltage		V _{CE(SAT)}		_	-0.7	V	$I_C = -500 \text{mA}, I_B = -50 \text{mA}$
Base-Emitter Voltage		V_{BE}	l	_	-1.2	V	$V_{CE} = -1.0V, I_{C} = -300mA$
Collector-Emitter Cutoff Current		I _{CES}		_	-100 -5.0		$V_{CE} = -45V$ $V_{CE} = -25V$, $T_j = 150$ °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 _{CBO}		_	12	pF	$V_{CB} = -10V, f = 1.0MHz$

- Notes: Device mounted on ceramic substrate 0.7mm; 2.5cm² area.
 - Short duration pulse test used to minimize self-heating effect.
 - No purposefully added lead. Halogen and Antimony Free.
 - 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.







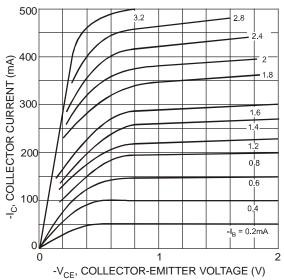


Fig. 5, Typical Emitter-Collector Characteristics

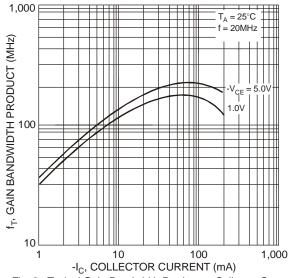


Fig. 2, Typical Gain-Bandwidth Product vs Collector Current

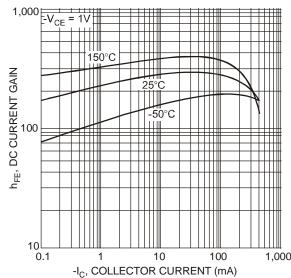


Fig. 4, Typical DC Current Gain vs Collector Current

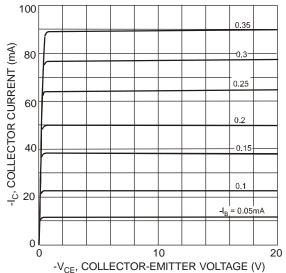


Fig. 6, Typical Emitter-Collector Characteristics



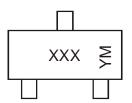
Ordering Information (Note 5)

Device*	Packaging	Shipping			
BC807-xx-7-F	SOT-23	3000/Tape & Reel			

xx = gain group, eg. BC807-16-7-F.

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

Marking Information



XXX = Product Type Marking Code (See Page 1): e.g. K5A = BC807-16 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	М	N	Р	R	S	Т	U	V	W	Χ	Υ	Z
Month	Jan	Fe	b I	Mar	Apr	May	Ju	n	Jul	Aug	Sep	Oc	t I	Nov	Dec
Code	1	2		3	4	5	6		7	8	9	0		N	D

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