



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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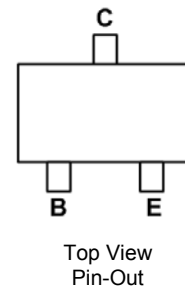
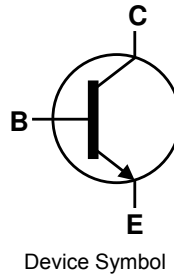


Features

- Ideally Suited for Automatic Insertion
- Epitaxial Planar Die Construction
- Complementary PNP Types: BC807-xxW
- For switching and AF Amplifier Applications
- **Totally Lead-Free & Fully RoHS Compliant (Note 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT23
- Case Material: molded plastic, "Green" molding compound
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 ③
- Weight 0.006 grams (approximate)

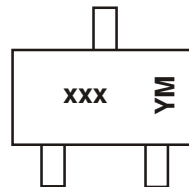


Ordering Information (Note 4)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
BC817-16W-7	K6A	7	8	3,000
BC817-25W-7	K6B	7	8	3,000
BC817-40W-7	K6C	7	8	3,000

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



xxx = Product Type Marking Code
(Please see Ordering Information)
YM = Date Code Marking
Y or \bar{Y} = Year (ex: A = 2013)
M or \bar{M} = Month (ex: 9 = September)

Date Code Key

Year	2010	2011	2012	2013	2014	2015	2016	2017
Code	X	Y	Z	A	B	C	D	E

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

Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	50	V
Collector-Emitter Voltage	V _{CEO}	45	V
Emitter-Base Voltage	V _{EBO}	5	V
Continuous Collector Current	I _C	500	mA
Peak Collector Current	I _{CM}	1.0	A
Peak Base Current	I _{BM}	200	mA

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

ESD Ratings (Note 6)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition	
Collector-Emitter Breakdown Voltage (Note 7)	V _{CEO}	45	—	—	V	I _C = 10mA	
Emitter-Base Breakdown Voltage	V _{EBO}	5	—	—	V	I _C = 100μA	
Collector-Emitter Cutoff Current	I _{CES}	—	—	100 5.0	nA μA	V _{CE} = 45V V _{CE} = 25V, T _J = +150°C	
Collector-Base Cutoff Current	I _{CB0}	—	—	100 5.0	nA μA	V _{CE} = 20V V _{CE} = 20V, T _J = +150°C	
Emitter-Base Cutoff Current	I _{EBO}	—	—	100	nA	V _{EB} = 5V	
DC Current Gain (Note 7)	h _{FE}	BC817-16W	100	—	250	—	I _C = 100mA, V _{CE} = 1.0V
		BC817-25W	160	—	400		
		BC817-40W	250	—	600		
		BC817-16W	60	—	—		I _C = 300mA, V _{CE} = 1.0V
		BC817-25W	100	—	—		
		BC817-40W	170	—	—		
Collector-Emitter Saturation Voltage (Note 7)	V _{CE(SAT)}	—	—	700	mV	I _C = 500mA, I _B = 50mA	
Base-Emitter Voltage (Note 7)	V _{BE}	—	—	1200	mV	I _C = 300mA, V _{CE} = 1.0V	
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:
- For a device mounted on minimum recommended pad layout 1oz copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 - Refer to JEDEC specification JESD22-A114 and JESD22-A115.
 - Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

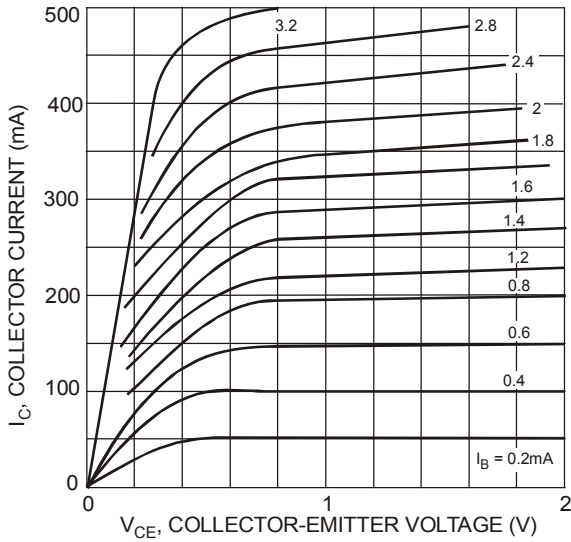


Figure 1 Typical Collector Current vs. Collector-Emitter Voltage

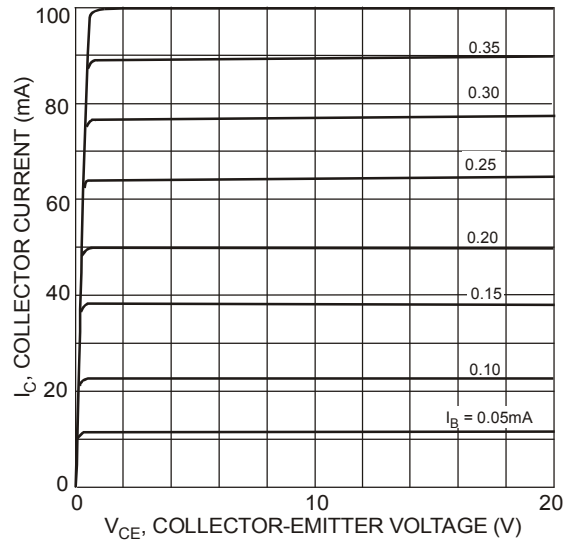


Figure 2 Typical Collector Current vs. Collector-Emitter Voltage

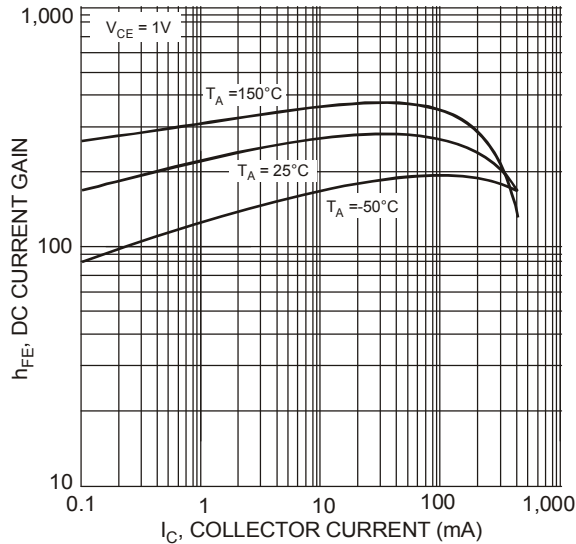


Figure 3 Typical DC Current Gain vs. Collector Current

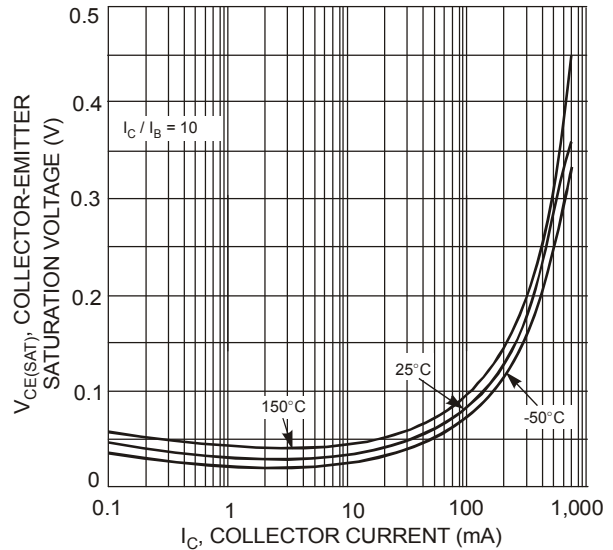


Figure 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

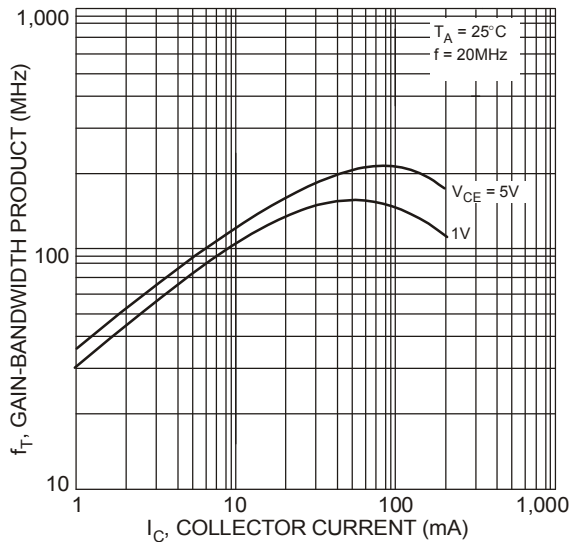
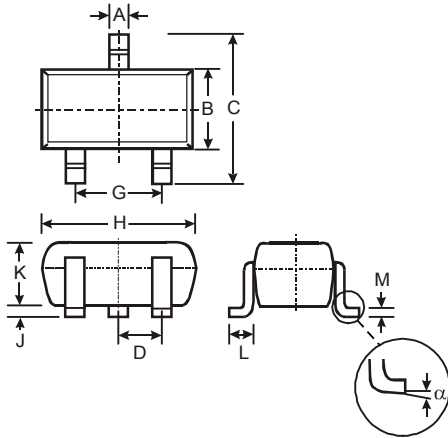


Figure 5 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

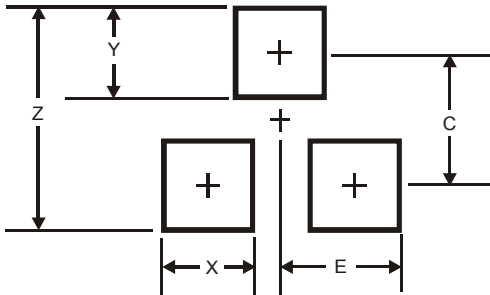
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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