

BC807-16L, BC807-25L, BC807-40L

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I _C = –10 mA)	V _{(BR)CEO}	–45	–	–	V
Collector–Emitter Breakdown Voltage (V _{EB} = 0, I _C = –10 μA)	V _{(BR)CES}	–50	–	–	V
Emitter–Base Breakdown Voltage (I _E = –1.0 μA)	V _{(BR)EBO}	–5.0	–	–	V
Collector Cutoff Current (V _{CB} = –20 V) (V _{CB} = –20 V, T _J = 150°C)	I _{CBO}	–	–	–100 –5.0	nA μA

ON CHARACTERISTICS

DC Current Gain (I _C = –100 mA, V _{CE} = –1.0 V) (I _C = –500 mA, V _{CE} = –1.0 V)	BC807-16, SBC80-16L BC807-25, SBC807-25L BC807-40, SBC807-40L h _{FE}	100 160 250 40	– – – –	250 400 600 –	–
Collector–Emitter Saturation Voltage (I _C = –500 mA, I _B = –50 mA)	V _{CE(sat)}	–	–	–0.7	V
Base–Emitter On Voltage (I _C = –500 mA, V _{CE} = –1.0 V)	V _{BE(on)}	–	–	–1.2	V

SMALL-SIGNAL CHARACTERISTICS

Current–Gain – Bandwidth Product (I _C = –10 mA, V _{CE} = –5.0 Vdc, f = 100 MHz)	f _T	100	–	–	MHz
Output Capacitance (V _{CB} = –10 V, f = 1.0 MHz)	C _{obo}	–	10	–	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

ORDERING INFORMATION

Device	Specific Marking	Package	Shipping [†]
BC807–16LT1G	5A1	SOT–23 (Pb–Free)	3000 / Tape & Reel
SBC807–16LT1G*			
BC807–16LT3G	5A1		10,000 / Tape & Reel
SBC807–16LT3G*			
BC807–25LT1G	5B1		3000 / Tape & Reel
SBC807–25LT1G*			
BC807–25LT3G	5B1		10,000 / Tape & Reel
SBC807–25LT3G*			
BC807–40LT1G	5C		3000 / Tape & Reel
SBC807–40LT1G*			
BC807–40LT3G	5C		10,000 / Tape & Reel
SBC807–40LT3G*			

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

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TYPICAL CHARACTERISTICS – BC807-16LT1

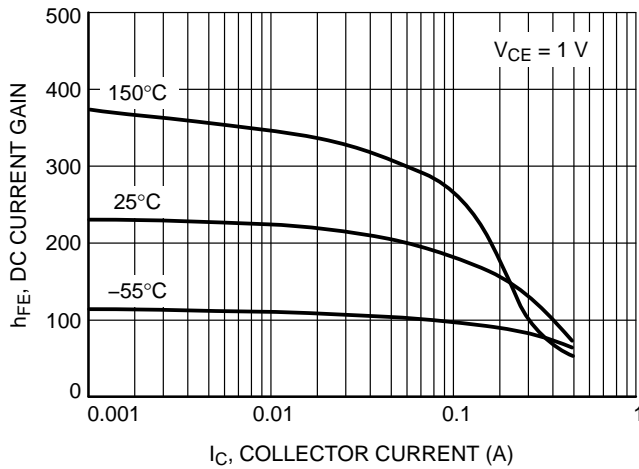


Figure 1. DC Current Gain vs. Collector Current

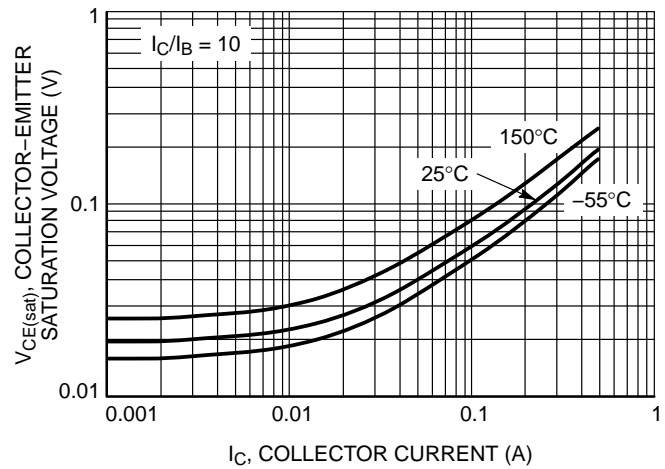


Figure 2. Collector Emitter Saturation Voltage vs. Collector Current

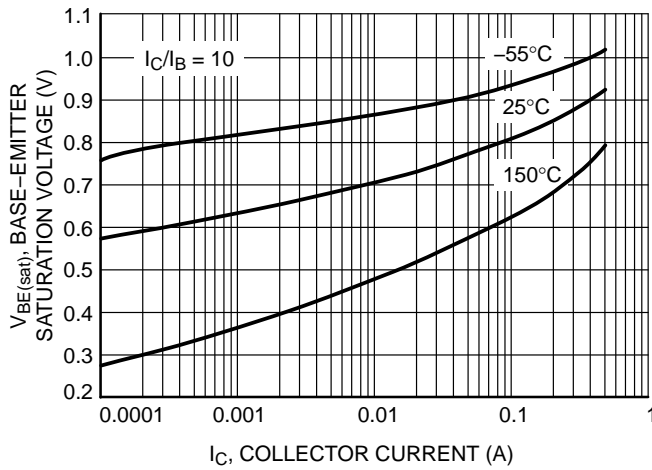


Figure 3. Base Emitter Saturation Voltage vs. Collector Current

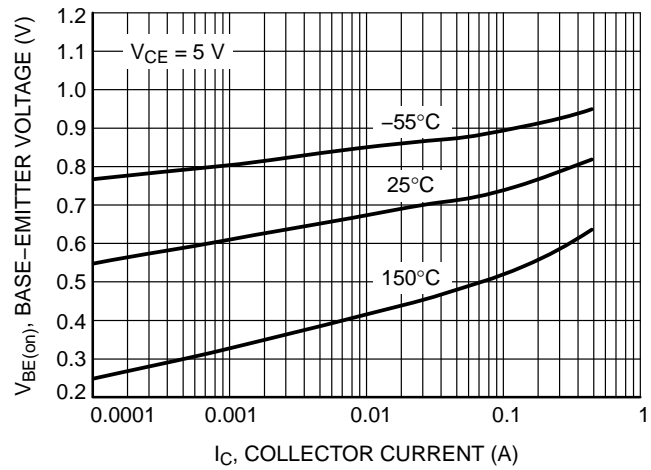


Figure 4. Base Emitter Voltage vs. Collector Current

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-16LT1

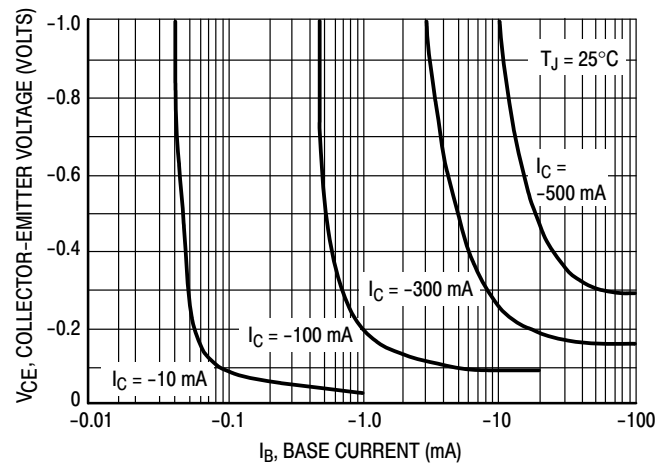


Figure 5. Saturation Region

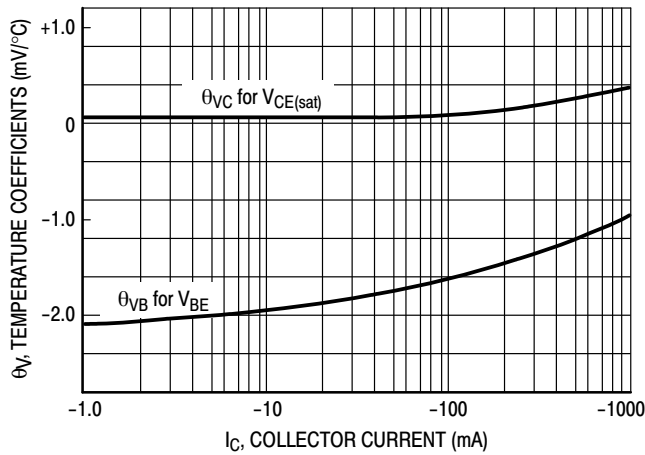


Figure 6. Temperature Coefficients

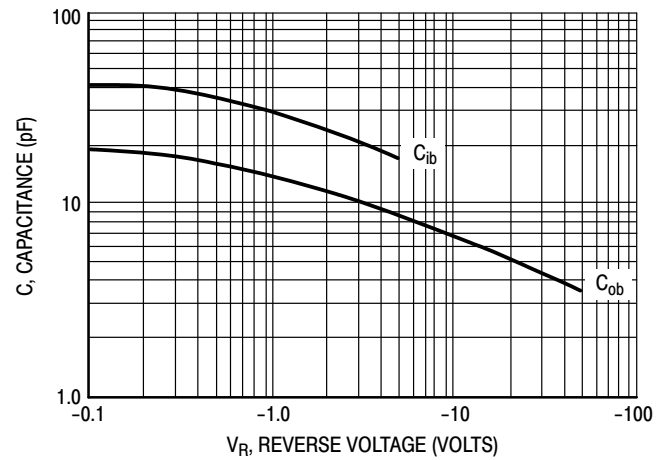


Figure 7. Capacitances

TYPICAL CHARACTERISTICS – BC807-25LT1

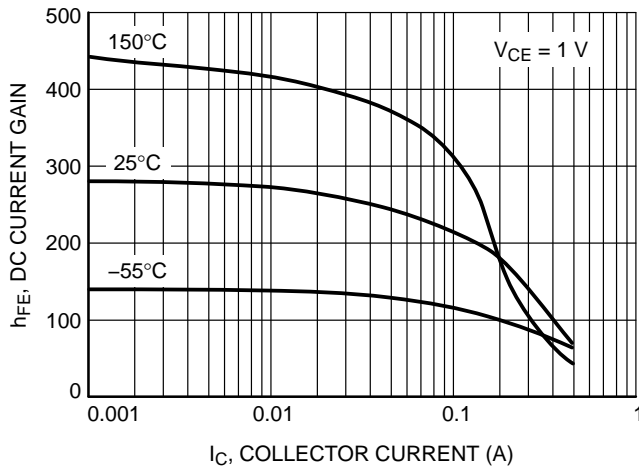


Figure 8. DC Current Gain vs. Collector Current

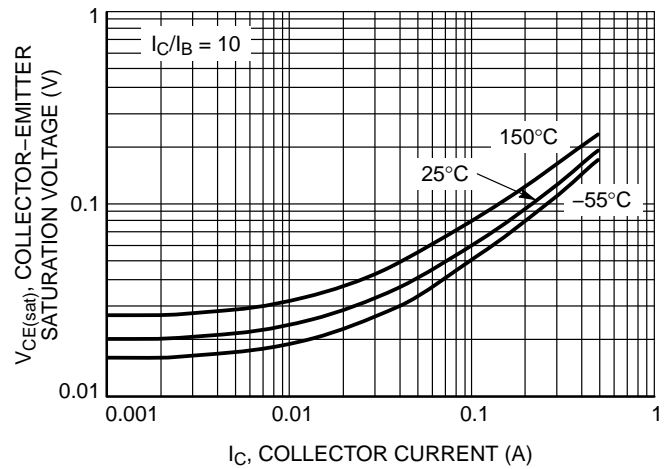


Figure 9. Collector Emitter Saturation Voltage vs. Collector Current

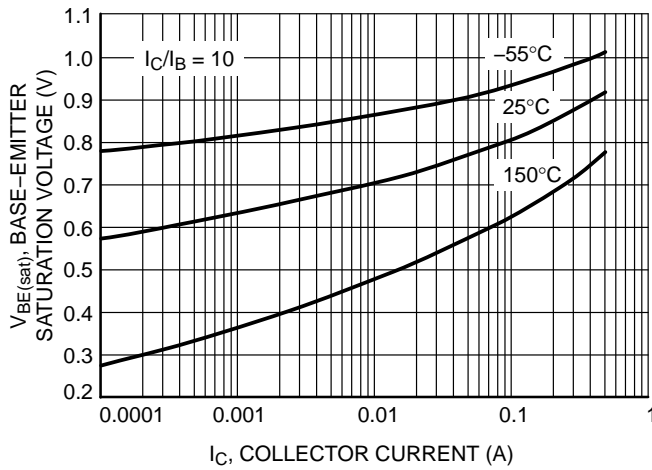


Figure 10. Base Emitter Saturation Voltage vs. Collector Current

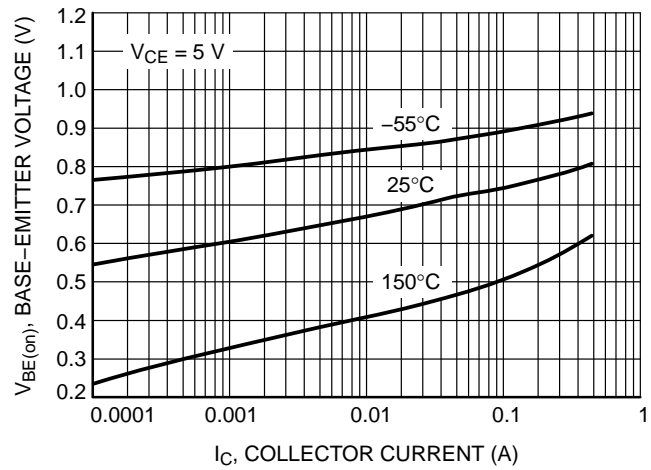


Figure 11. Base Emitter Voltage vs. Collector Current

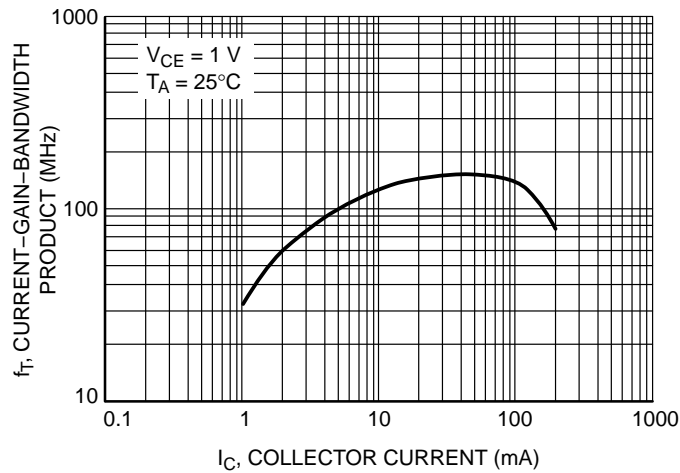


Figure 12. Current Gain Bandwidth Product vs. Collector Current

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-25LT1

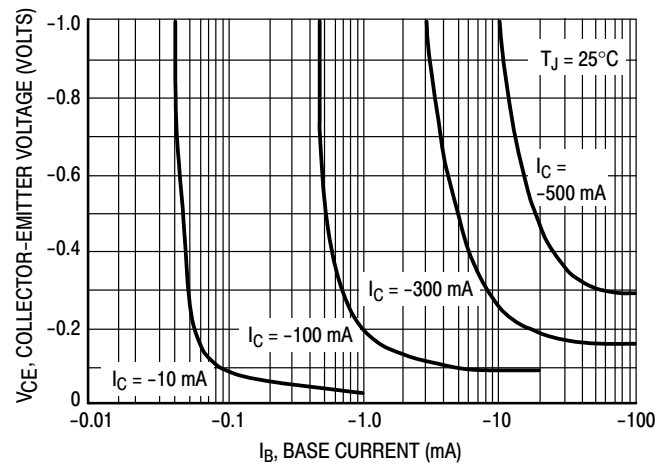


Figure 13. Saturation Region

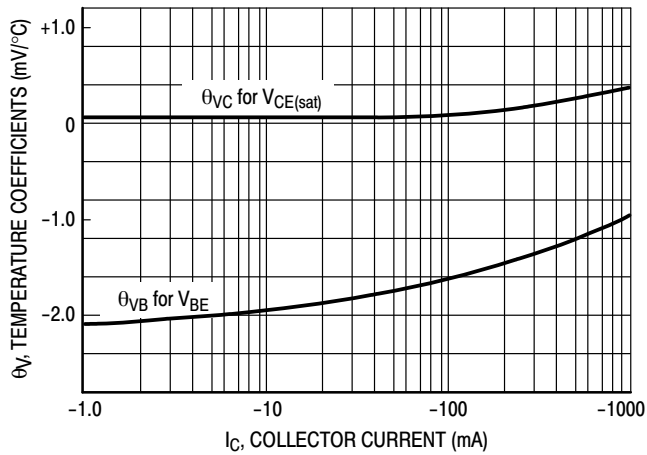


Figure 14. Temperature Coefficients

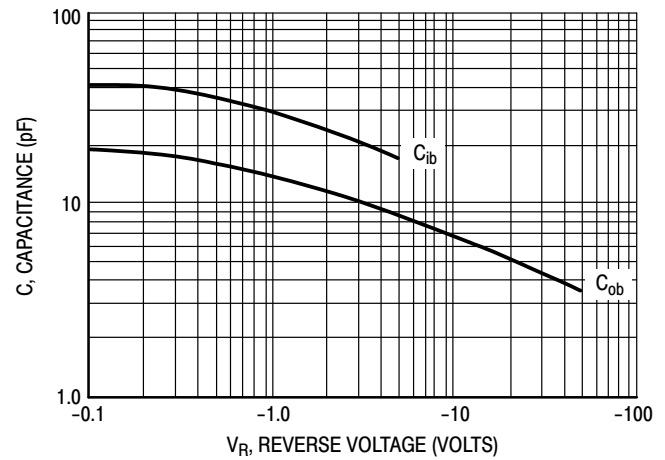


Figure 15. Capacitances

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-40LT1

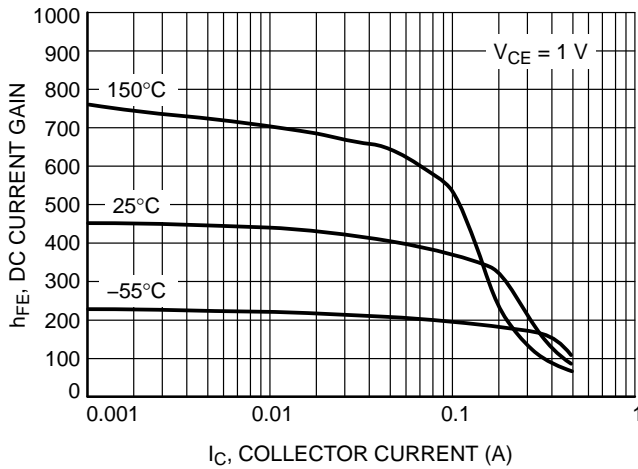


Figure 16. DC Current Gain vs. Collector Current

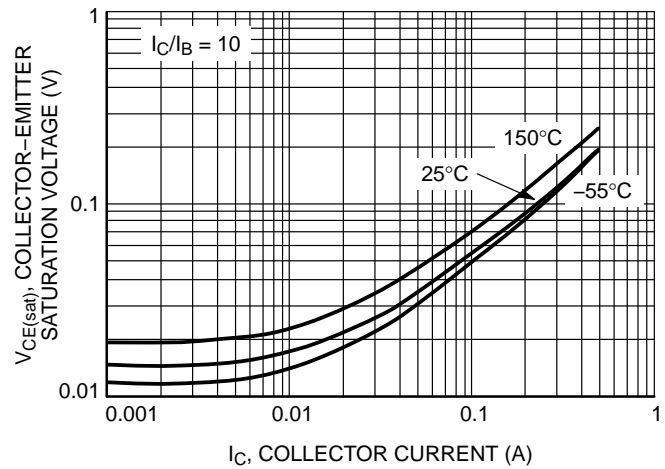


Figure 17. Collector Emitter Saturation Voltage vs. Collector Current

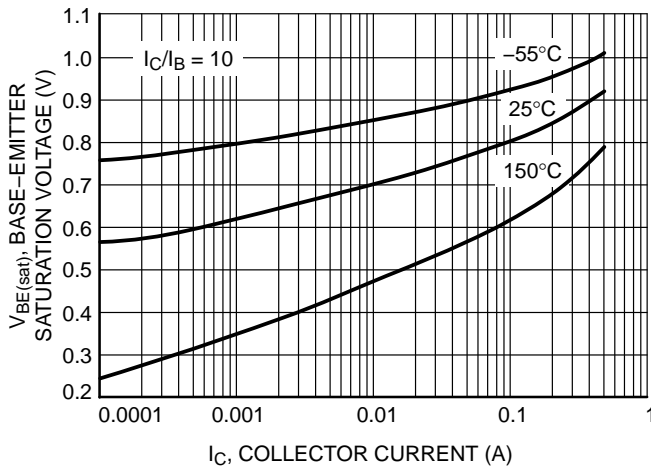


Figure 18. Base Emitter Saturation Voltage vs. Collector Current

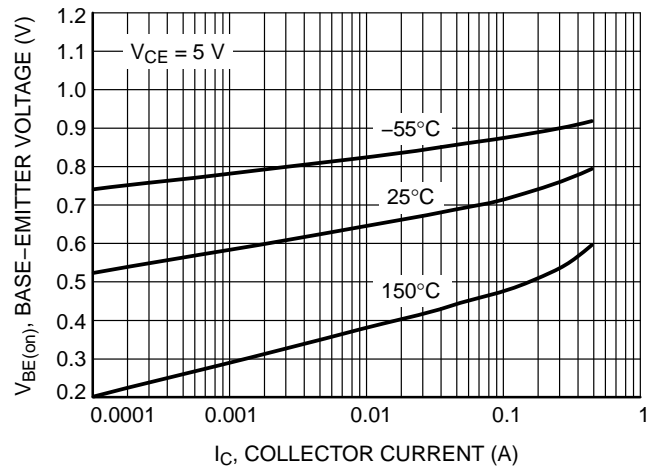


Figure 19. Base Emitter Voltage vs. Collector Current

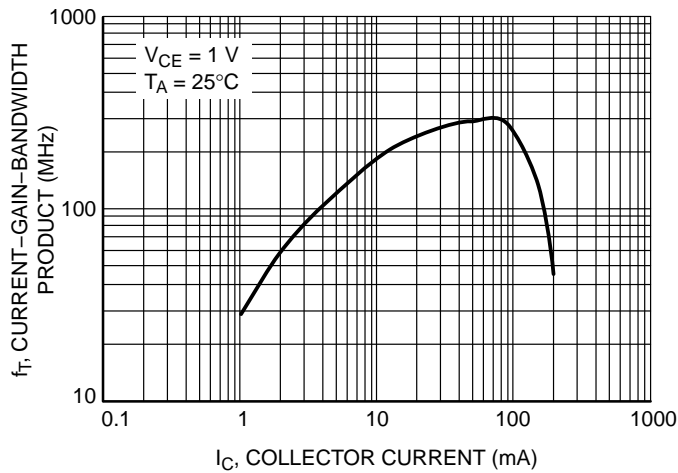


Figure 20. Current Gain Bandwidth Product vs. Collector Current

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-40LT1

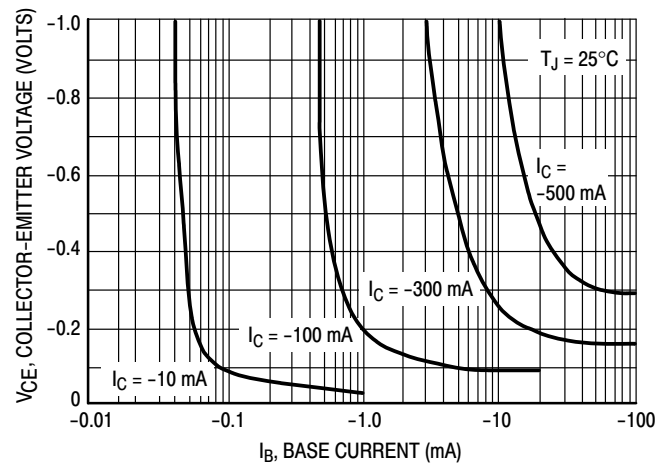


Figure 21. Saturation Region

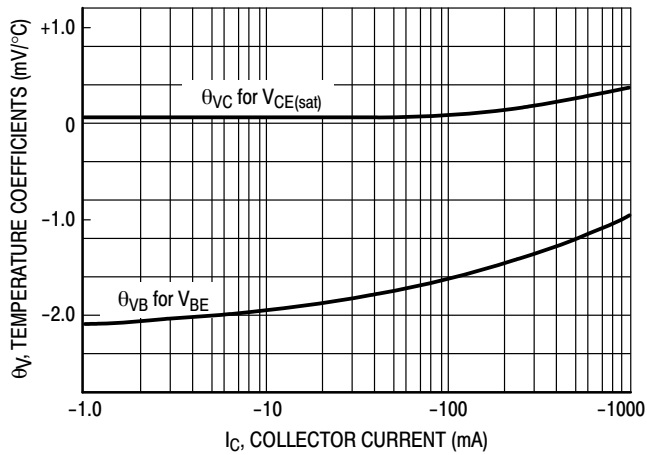


Figure 22. Temperature Coefficients

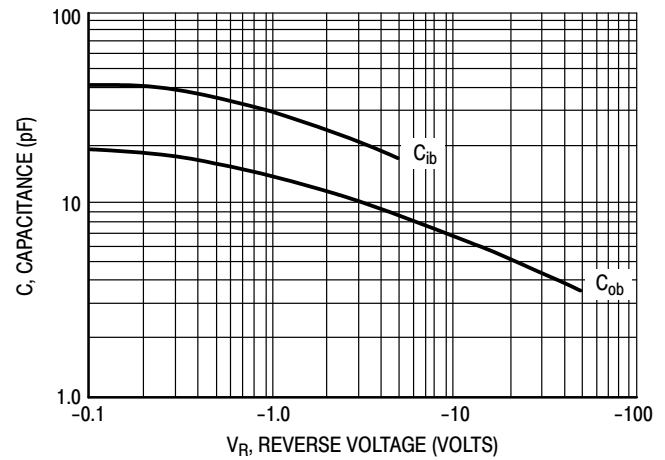


Figure 23. Capacitances

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-16LT1, BC807-25LT1, BC807-40LT1

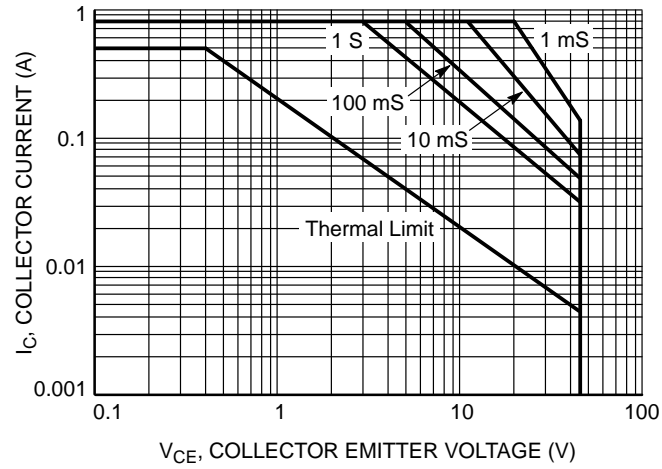


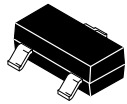
Figure 24. Safe Operating Area

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

ON Semiconductor®

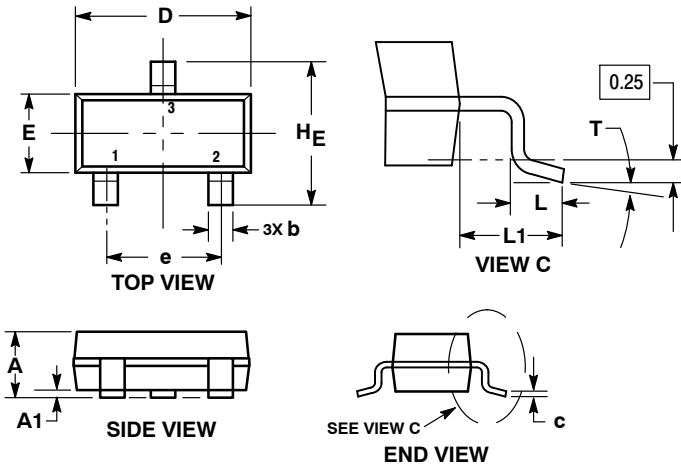
ON



SOT-23 (TO-236) CASE 318-08 ISSUE AS

DATE 30 JAN 2018

SCALE 4:1

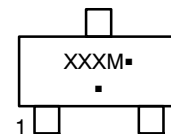


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
c	0.08	0.14	0.20	0.003	0.006	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.10	2.40	2.64	0.083	0.094	0.104
T	0°	---	10°	0°	---	10°

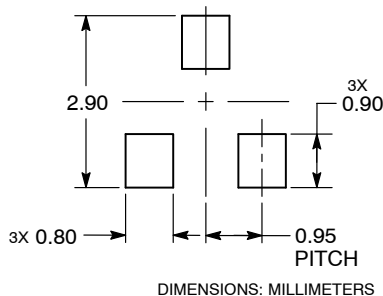
GENERIC MARKING DIAGRAM*



XXX = Specific Device Code
M = Date Code
▪ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

RECOMMENDED SOLDERING FOOTPRINT



STYLE 1 THRU 5:
CANCELLED

STYLE 6:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 7:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

STYLE 8:
PIN 1. ANODE
2. NO CONNECTION
3. CATHODE

STYLE 9:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 10:
PIN 1. DRAIN
2. SOURCE
3. GATE

STYLE 11:
PIN 1. ANODE
2. CATHODE
3. CATHODE-ANODE

STYLE 12:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 13:
PIN 1. SOURCE
2. DRAIN
3. GATE

STYLE 14:
PIN 1. CATHODE
2. GATE
3. ANODE

STYLE 15:
PIN 1. GATE
2. CATHODE
3. ANODE

STYLE 16:
PIN 1. ANODE
2. CATHODE
3. CATHODE

STYLE 17:
PIN 1. NO CONNECTION
2. ANODE
3. CATHODE

STYLE 18:
PIN 1. NO CONNECTION
2. CATHODE
3. ANODE

STYLE 19:
PIN 1. CATHODE
2. ANODE
3. CATHODE-ANODE

STYLE 20:
PIN 1. CATHODE
2. ANODE
3. GATE

STYLE 21:
PIN 1. GATE
2. SOURCE
3. DRAIN

STYLE 22:
PIN 1. RETURN
2. OUTPUT
3. INPUT

STYLE 23:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 24:
PIN 1. GATE
2. DRAIN
3. SOURCE

STYLE 25:
PIN 1. ANODE
2. CATHODE
3. GATE


STYLE 26:
PIN 1. CATHODE
2. ANODE
3. NO CONNECTION

STYLE 27:
PIN 1. CATHODE
2. CATHODE
3. CATHODE

STYLE 28:
PIN 1. ANODE
2. ANODE
3. ANODE

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