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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-6	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)	$R_{\theta JA}$	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)		BV_{CEO}	-45	—	—	V	I_C = -10mA
Emitter-Base Breakdown Voltage		BV_{EBO}	-6	—	—	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		I_{CBO}	—	—	-100 -5.0	nA µA	V_{CB} = -20V V_{CB} = -20V, T_J = +150°C
Emitter-Base Cutoff Current		I_{EBO}	—	—	-100	nA	V_{EB} = -5V
DC Current Gain (Note 7)	BC807-16W-7 BC807-25W-7 BC807-40W-7	h_{FE}	100 160 250	—	250 400 600	—	I_C = -100mA, V_{CE} = -1.0V
	BC807-16W-7 BC807-25W-7 BC807-40W-7		60 100 170		—		I_C = -300mA, V_{CE} = -1.0V
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_{CBO}	—	—	12	pF	V_{CB} = -10V, f = 1.0MHz

Notes:
5. 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.
6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.
7. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤ 2%.

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

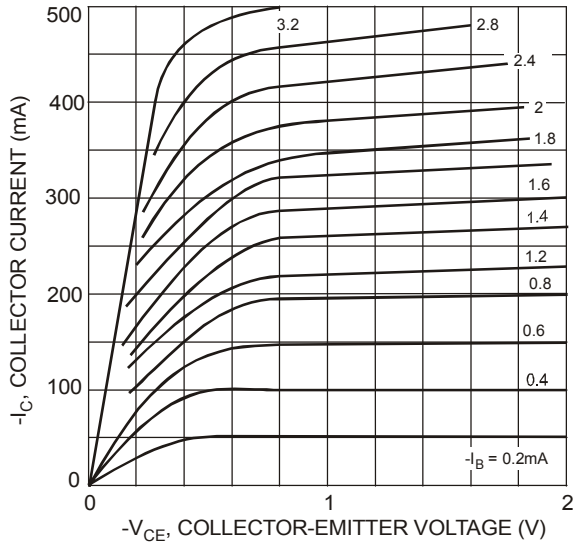


Figure 1 Typical Collector Current vs. Collector-Emitter Voltage

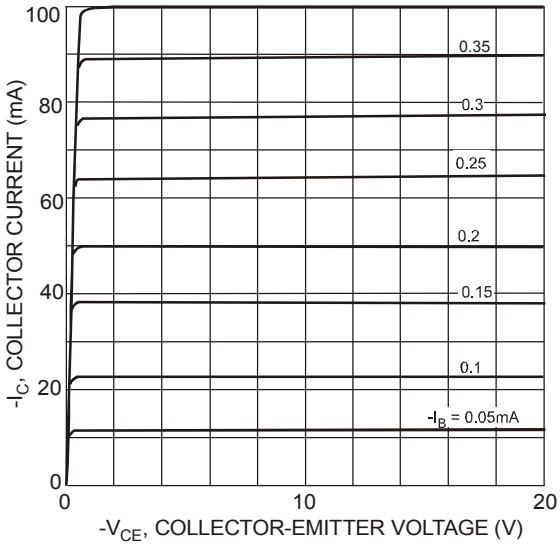


Figure 2 Typical Collector Current vs. Collector-Emitter Voltage

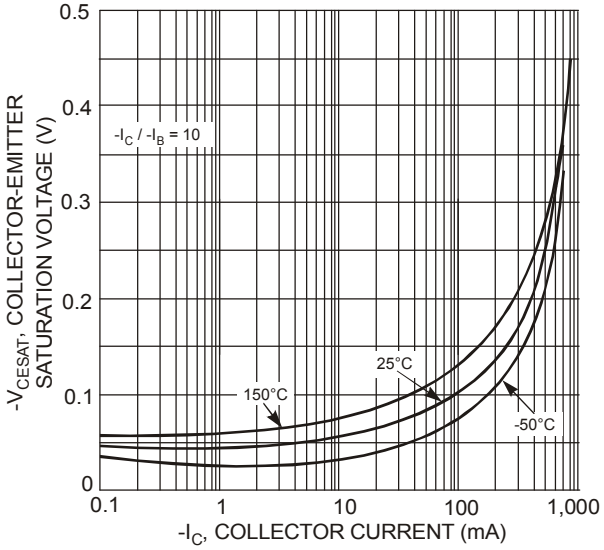


Figure 3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

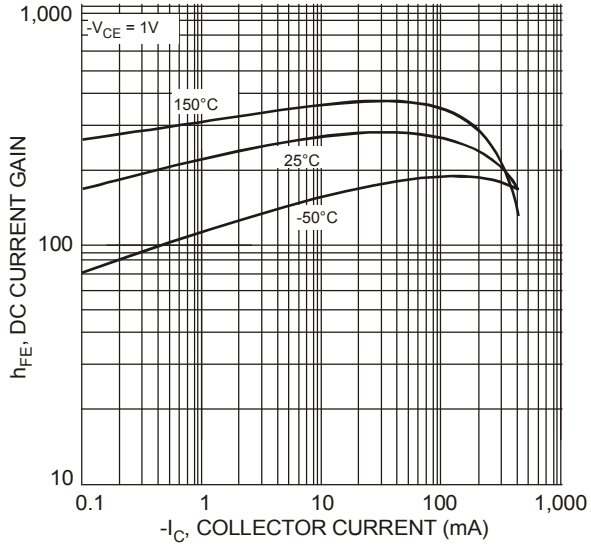


Figure 4 Typical DC Current Gain vs. Collector Current

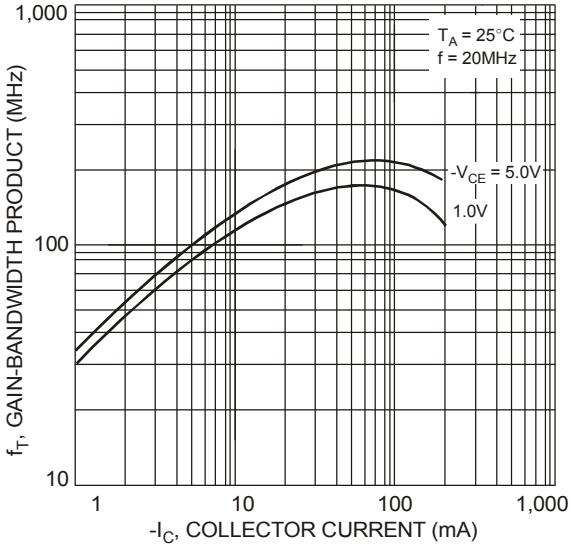
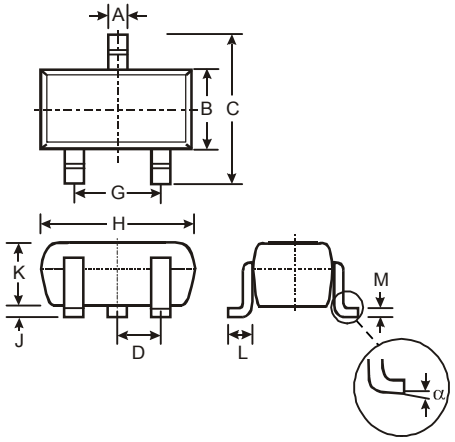


Figure 5 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

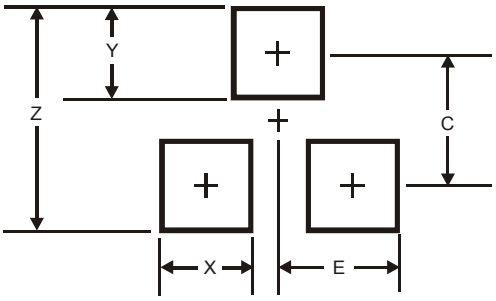
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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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