

0.3W, PNP Plastic-Encapsulate Transistor

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

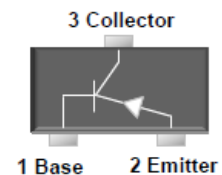
APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: SOT-23
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 0.008grams (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{CBO}	-50	V
V_{CEO}	-45	V
V_{EBO}	-5	V
I_C	-0.5	A
h_{FE}	250-600	
Package	SOT-23	
Configuration	Single Dice	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER		SYMBOL	BC807-16	BC807-25	BC807-40	UNIT
Marking code on the device			5A	5B	5C	
Power dissipation		P_D	0.3			W
Collector-base voltage, emitter open	$I_C = -10\ \mu\text{A}, I_E = 0$	V_{CBO}	-50			V
Collector-emitter voltage, base open	$I_C = -10\ \text{mA}, I_B = 0$	V_{CEO}	-45			V
Emitter-base voltage, collector open	$I_E = -1\ \mu\text{A}, I_C = 0$	V_{EBO}	-5			V
Collector current, dc		I_C	-0.5			A
Junction temperature		T_J	-55 to +150			$^\circ\text{C}$
Storage temperature		T_{STG}	-55 to +150			$^\circ\text{C}$

ELECTRICAL SPECIFICATIONS (T _A = 25°C unless otherwise noted)							
PARAMETER	CONDITIONS		SYMBOL	MIN	TYP	MAX	UNIT
Collector cutoff current, emitter open	V _{CB} = -45 V, I _E = 0		I _{CBO}	-	-	-0.1	μA
	V _{CB} = -40 V, I _B = 0			-	-	-0.2	
Emitter cutoff current, collector open	V _{EB} = -4 V, I _C = 0		I _{EBO}	-	-	-0.1	μA
DC current gain	V _{CE} = -1 V, I _C = -100 mA	BC807-16	h _{FE}	100	-	250	
		BC807-25		160	-	400	
		BC807-40		250	-	600	
Collector-emitter saturation voltage	I _C = -500 mA, I _B = -50 mA		V _{CE(sat)}	-	-	-0.7	V
Base-emitter saturation voltage	I _C = -500 mA, I _B = -50 mA		V _{BE(sat)}	-	-	-1.2	V
Transition frequency	V _{CE} = -5 V , I _C = -10 mA, f= 50MHz		f _T	100	-	-	MHz

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
BC807-XX (Note 1)	RF	G	SOT-23	3K / 7" Reel

Notes:

- "xx" is Device Code is "16" and "25" and "40"
- *: optional available

EXAMPLE				
EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BC807-16 RFG	BC807-16	RF	G	Green compound

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Power Derating Curve

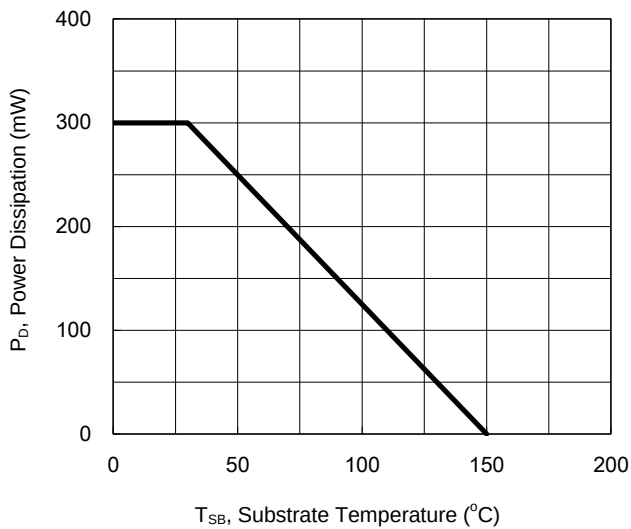


Fig. 2 Gain Bandwidth Product VS. Collector Current

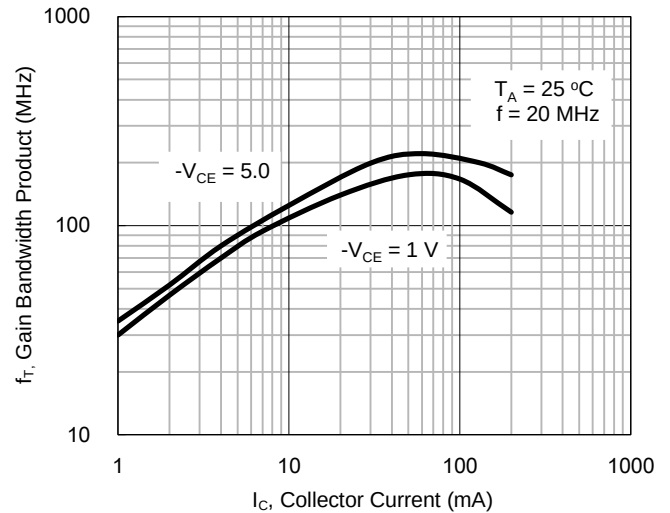


Fig.3 Collector Sat Voltage VS. Collector Current

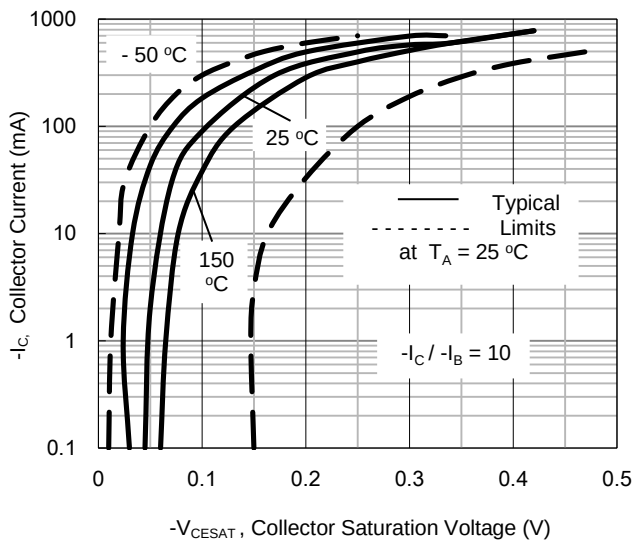
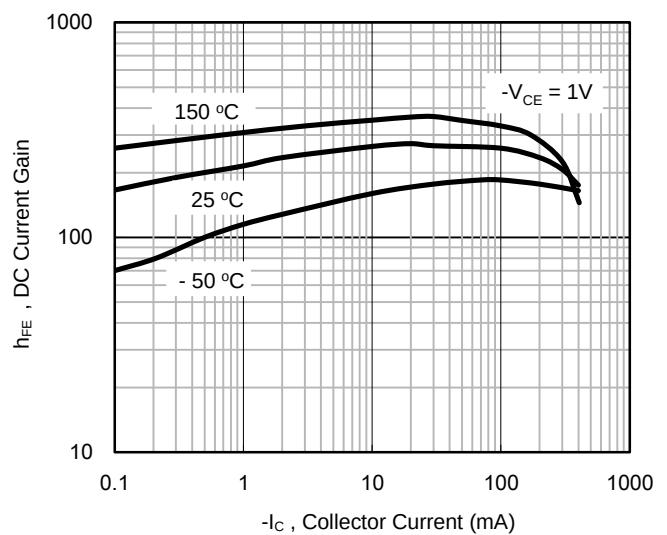


Fig.4 DC Current Gain VS. Collector Current



CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.5 Typical Emitter-Collector Characteristics

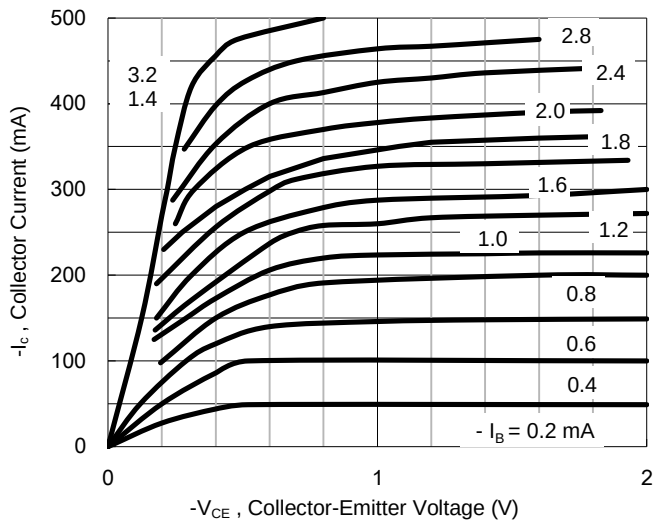
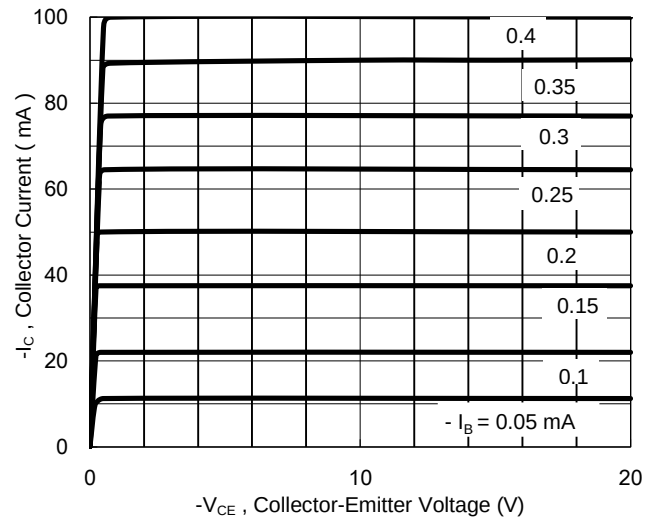
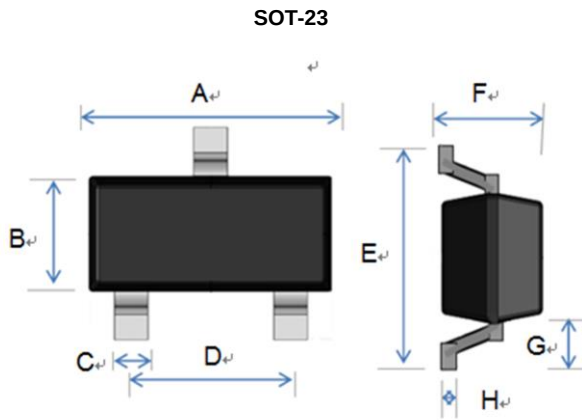


Fig. 6 Typical Transient Thermal Characteristics

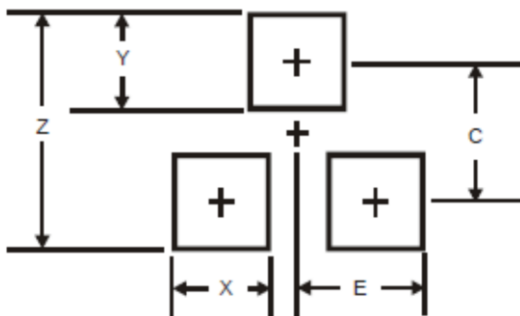


PACKAGE OUTLINE DIMENSION



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

SUGGEST PAD LAYOUT



DIM.	Unit(mm)	Unit(inch)
	TYP	TYP
Z	2.8	0.11
X	0.7	0.03
Y	0.9	0.04
C	1.9	0.07
E	1.0	0.04

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