

0.3W, PNP Plastic-Encapsulate Transistor

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

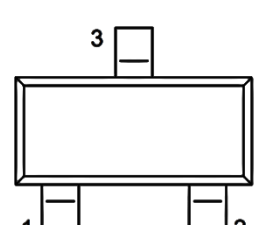
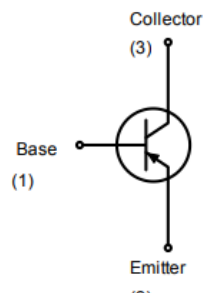
- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: SOT-23
- Molding compound meets UL 94V-0 flammability rating
- 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	PIN CONFIGURATION	CIRCUIT DIAGRAM
		

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

PARAMETER		SYMBOL	VALUE	UNIT
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
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			
ORDERING CODE	PACKAGE	PACKING	DEVICE MARKING
BC807-16 RFG	SOT-23	3K / 7" Reel	5A
BC807-25 RFG	SOT-23	3K / 7" Reel	5B
BC807-40 RFG	SOT-23	3K / 7" Reel	5C

CHARACTERISTICS CURVES

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

Fig.1 Power Derating Curve

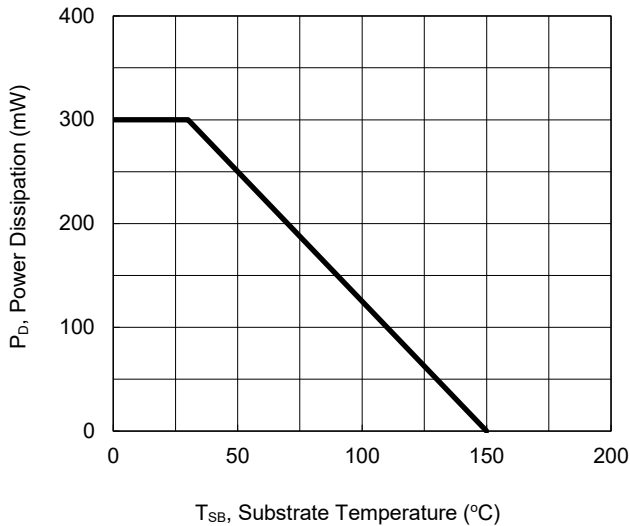


Fig. 2 Gain Bandwidth Product VS. Collector Current

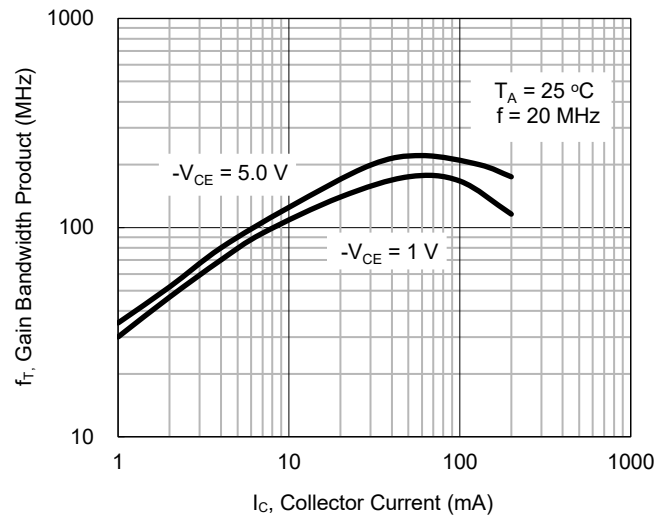


Fig.3 Collector Sat Voltage VS. Collector Current

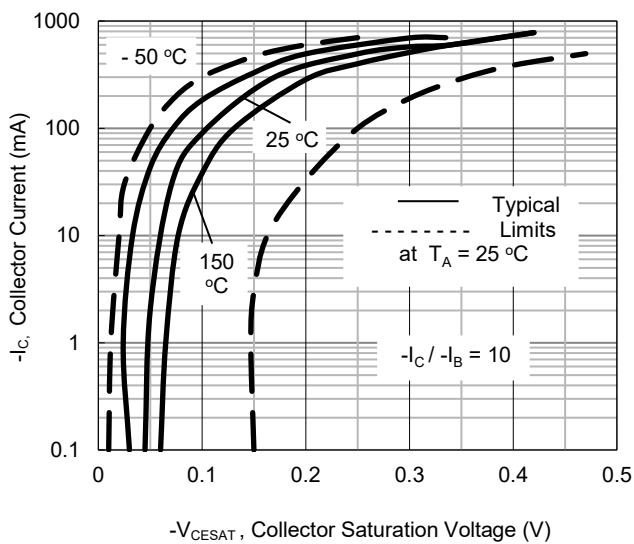
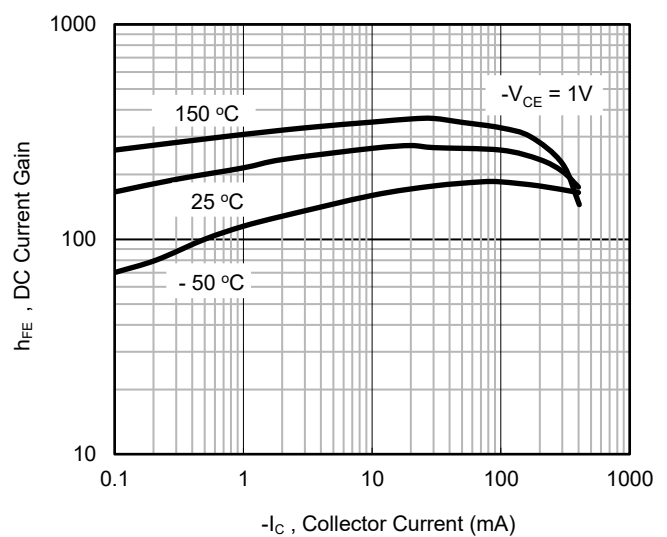


Fig.4 DC Current Gain VS. Collector Current



CHARACTERISTICS CURVES

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

Fig.5 Typical Emitter-Collector Characteristics

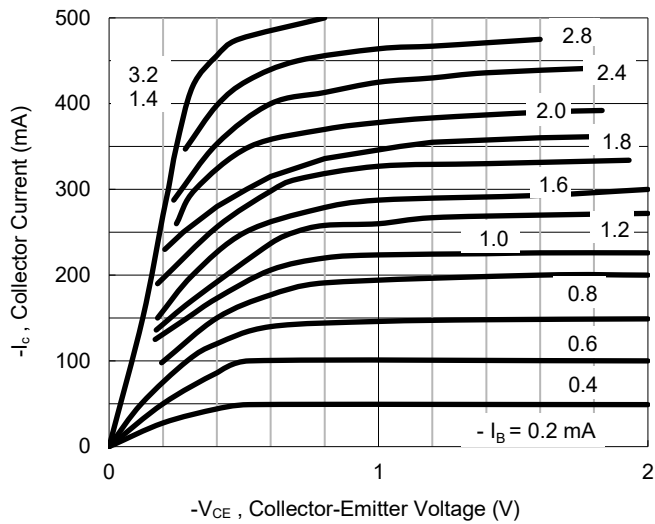
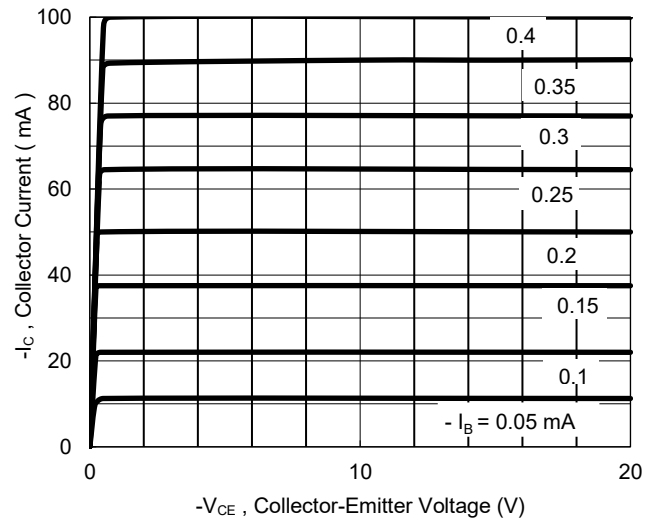
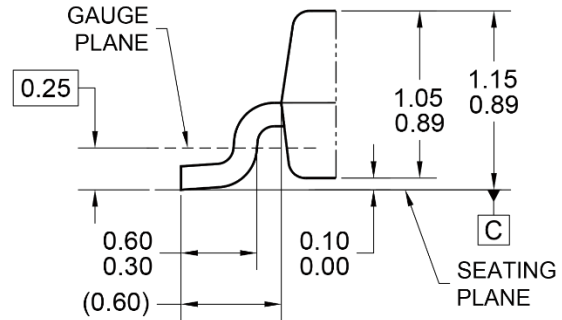
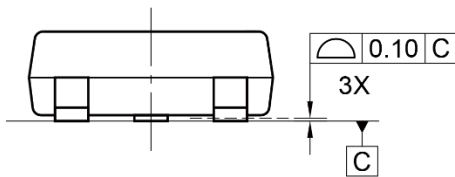
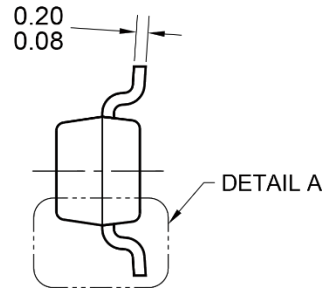
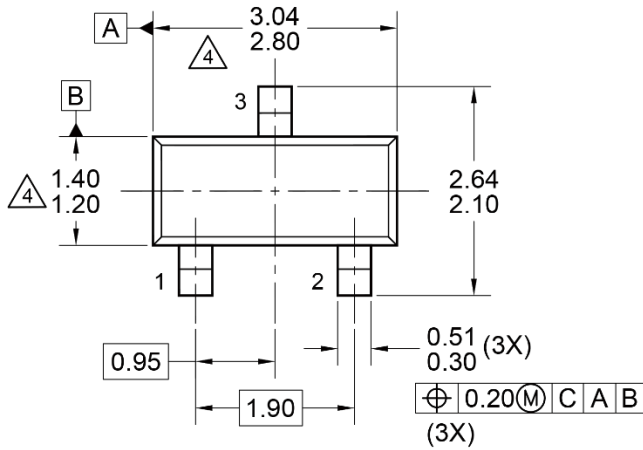


Fig. 6 Typical Transient Thermal Characteristics

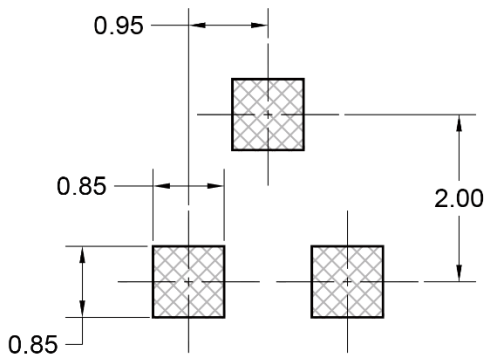


PACKAGE OUTLINE DIMENSIONS

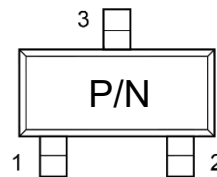
SOT-23



DETAIL A, ROTATED -90°
(SCALE 2:1)



SUGGESTED PAD LAYOUT



MARKING DIAGRAM

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC TO-236, ISSUE H, VARIATION AA.

4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SOT23JEDEC-104 REV B.

P/N = Device marking

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