

PNP General Purpose 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

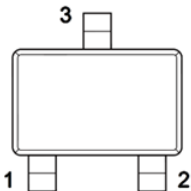
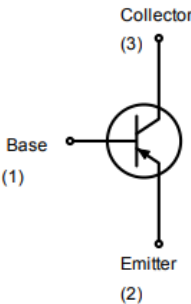
- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: SOT-323
- 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: 5.00mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_C	-0.5	A
V_{CBO}	-50	V
V_{CEO}	-45	V
V_{EBO}	-5	V
T_J	150	°C


**HALOGEN
FREE**

PACKAGE: SOT-323	PIN CONFIGURATION	CIRCUIT DIAGRAM
		

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Collector current	I_C	-0.5	A
Power dissipation	P_D	200	mW
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	625	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	MIN	MAX	UNIT
Collector-base breakdown voltage		$I_C = 10\mu\text{A}$	$V_{(BR)CBO}$	-50	-	V
Collector-emitter breakdown voltage		$I_C = 10\text{mA}$	$V_{(BR)CEO}$	-45	-	V
Emitter-base breakdown voltage		$I_E = 10\mu\text{A}$	$V_{(BR)EBO}$	-5	-	V
Collector cut-off current		$V_{CB} = 20\text{V}$	I_{CBO}	-	-100	μA
Emitter cut-off current		$V_{EB} = 5\text{V}$	I_{EBO}	-	-100	μA
DC current gain	BC807-16W	$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	h_{FE}	100	250	-
	BC807-25W			160	400	-
	BC807-40W			250	600	-
	BC807-16W BC807-25W BC807-40W	$V_{CE} = 1\text{V}, I_C = 500\text{mA}$		40	-	-
Collector-emitter saturation voltage		$I_C = 500\text{mA}, I_B = 50\text{mA}$	$V_{CE(sat)}$	-	-0.7	V
Transition frequency		$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	f_T	80	-	MHz

ORDERING AND MARKING INFORMATION

ORDERING CODE	PACKAGE	PACKING	DEVICE MARKING
BC807-16W RFG	SOT-323	3K / 7" Reel	5CR
BC807-25W RFG	SOT-323	3K / 7" Reel	5CS
BC807-40W RFG	SOT-323	3K / 7" Reel	5CT

CHARACTERISTICS CURVES

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

Fig.1 Total Power Dissipation $P_{\text{tot}} = f(T_s)$

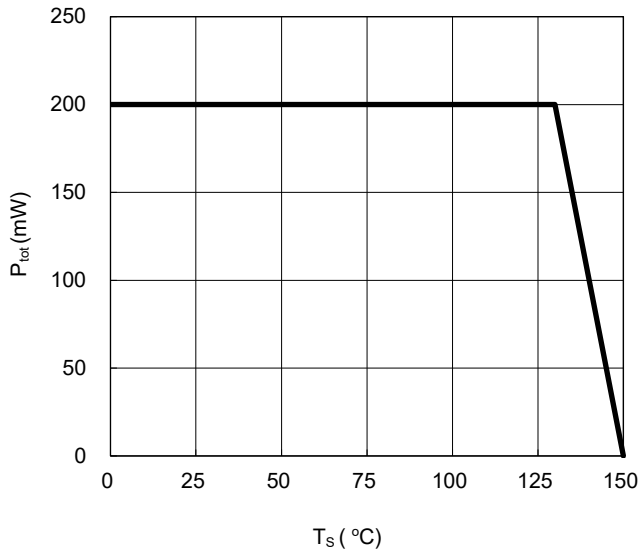


Fig.2 Permissible Pulse Load $R_{\theta JA} = f(tp)$

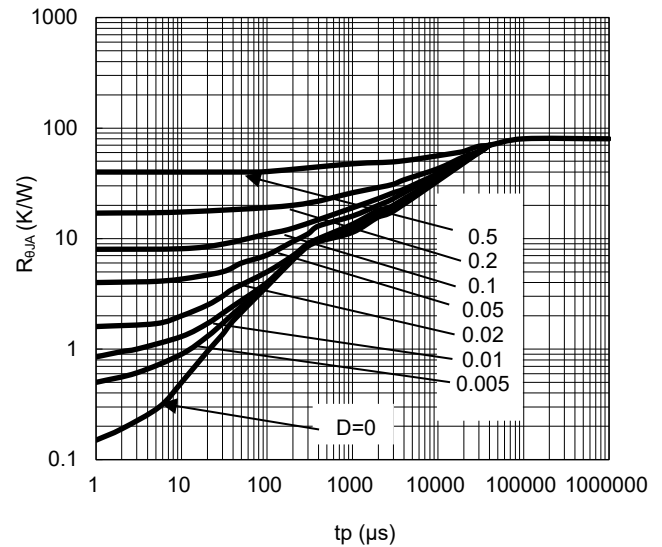


Fig.3 Permissible Pulse Load $P_{\text{totmax}} / P_{\text{totDC}} = f(tp)$

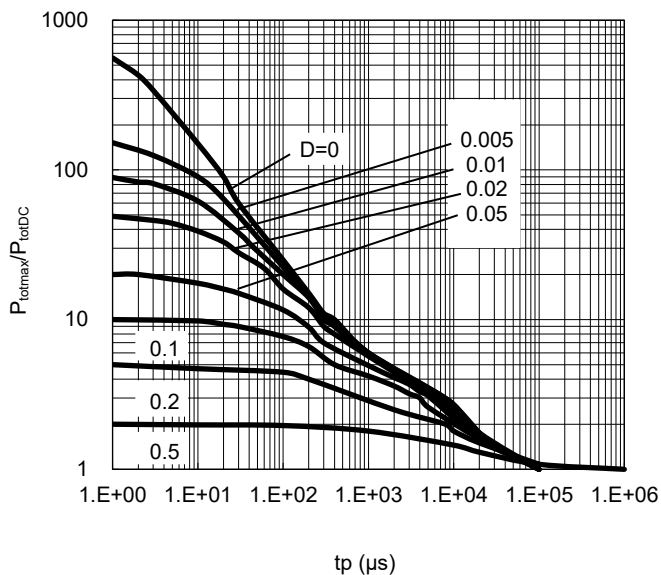
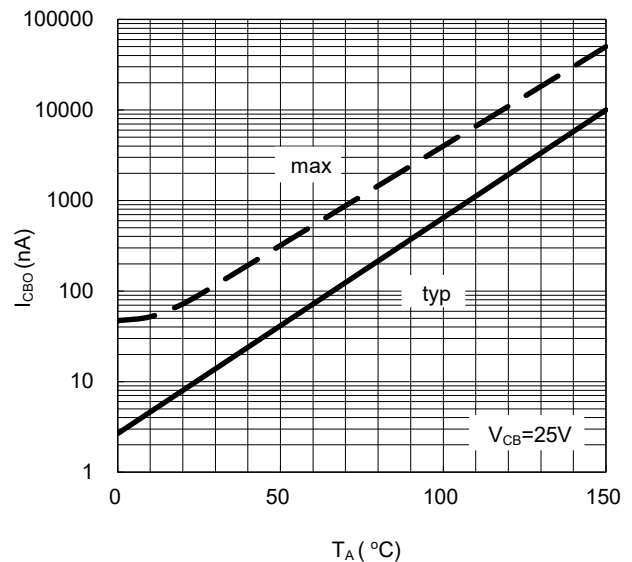


Fig.4 Collector Cutoff Current $I_{\text{CBO}} = f(T_A)$



CHARACTERISTICS CURVES

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

Fig.5 DC Current Gain $h_{FE} = f(I_C)$

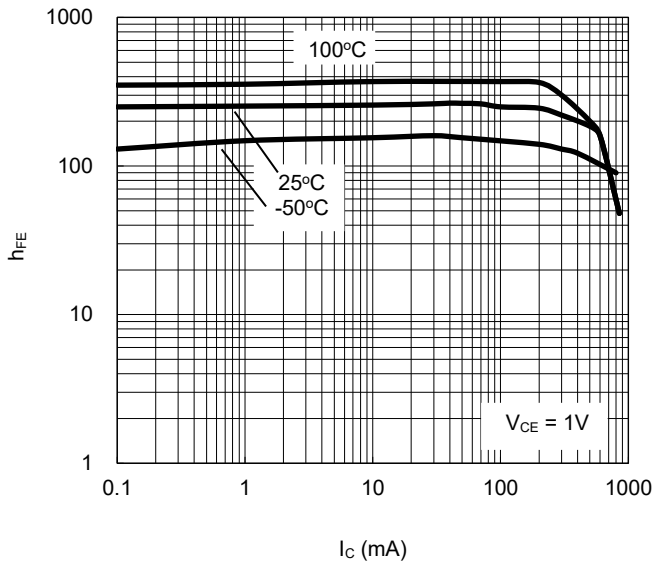


Fig.6 Transition Frequency $f_T = f(I_C)$

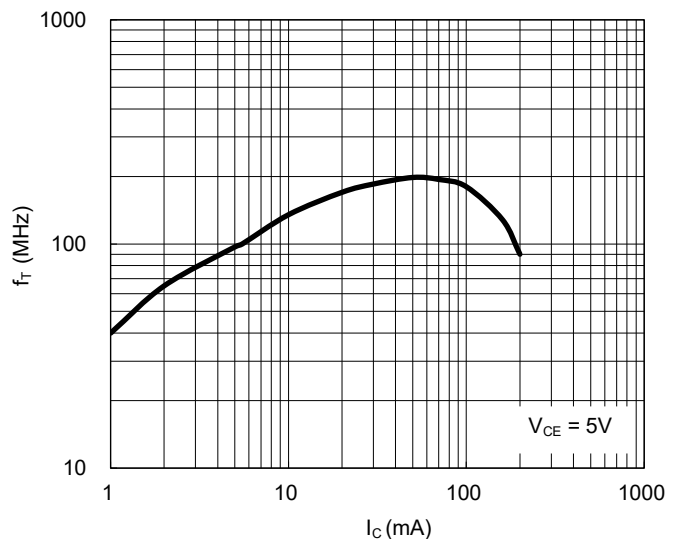


Fig.7 Base-Emitter Saturation Voltage

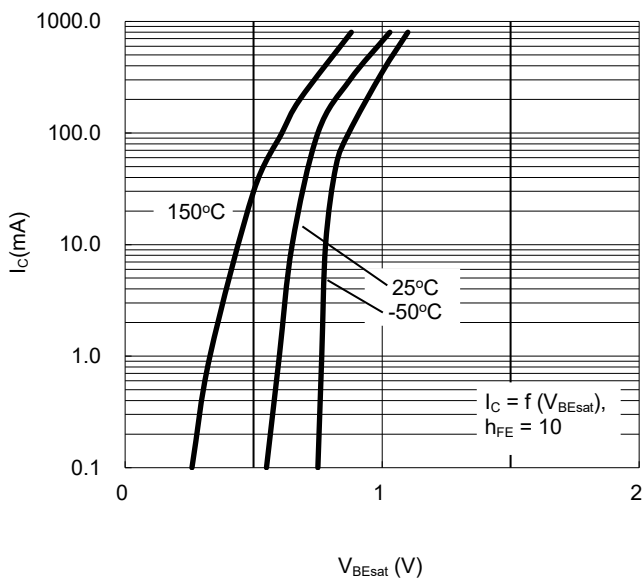
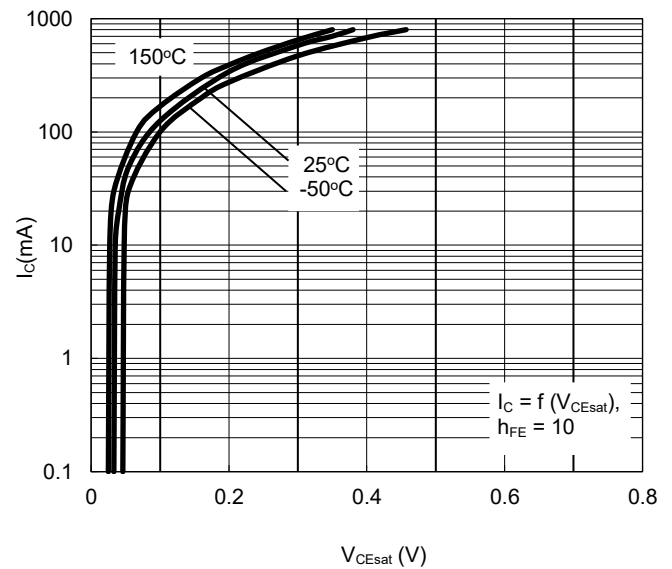
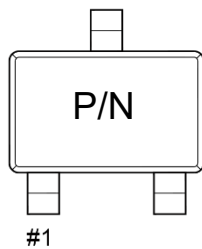
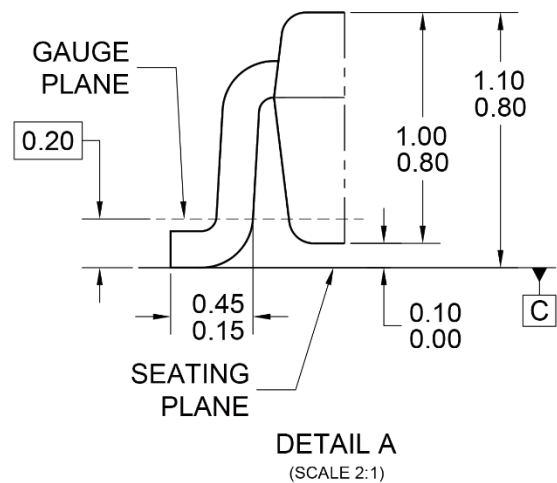
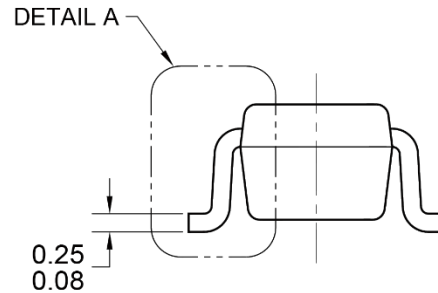
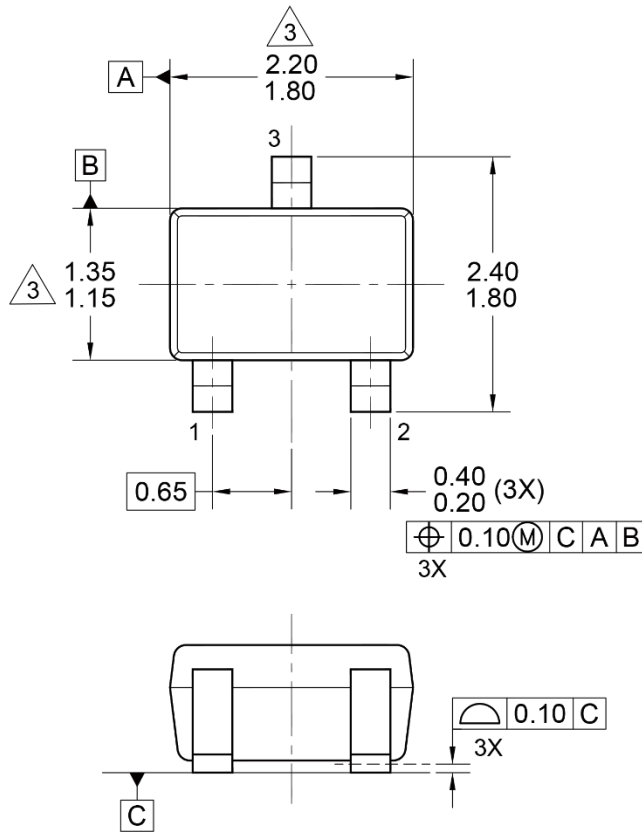


Fig.8 Collector-Emitter Saturation Voltage



PACKAGE OUTLINE DIMENSIONS

SOT-323

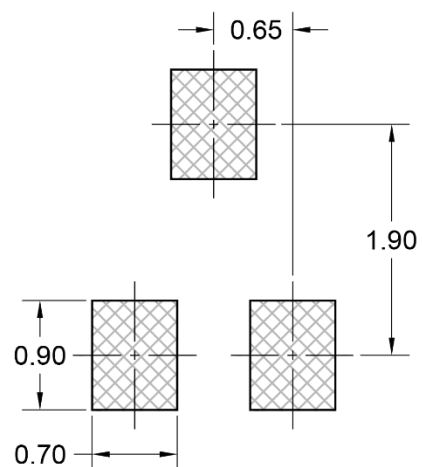


MARKING DIAGRAM

P/N = Device marking

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEITA ED-7500A, EIAJ SC-70.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DWG NO. REF: HQ2SD07-SOT323-098 REV D.



SUGGESTED PAD LAYOUT

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