

BCP56-16-AU

NPN Low $V_{CE(SAT)}$ Transistor

Voltage

100V

Current

1A

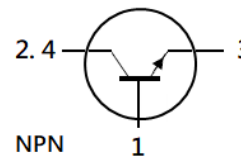
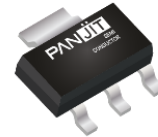
Features

- Silicon NPN epitaxial type
- Low $V_{CE(SAT)}$ 0.35V(max)@ $I_C/I_B= 500mA / 50mA$
- High collector current capability
- Excellent DC current gain characteristics
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 Standard
- PNP complement : BCP53-16-AU

Mechanical Data

- Case : SOT-223 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.123 grams

SOT-223



Pin Assignment:

1. Base
- 2.4. Collector
3. Emitter

Maximum Ratings and Thermal Characteristics ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	100	
Emitter-Base Voltage	V_{EBO}	6	
Collector Current (DC)	I_C	1	A
Collector Current (Pulse) ^(Note 1)	I_{CM}	3	
Base Current (DC)	I_B	0.1	
Base Current (Pulse) ^(Note 1)	I_{BM}	0.3	
Power Dissipation	$t \leq 10\text{sec}$	2.6	W
	Steady State	1.4	
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^{\circ}C$
Thermal Resistance Junction to Ambient <small>(Note 2)</small>	$t \leq 10\text{sec}$	48	$^{\circ}C/W$
	Steady State	90	

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Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C = 10mA, I _B = 0A	100	-	-	V
Collector-Base Breakdown Voltage	BV _{CBO}	I _C = 0.1mA, I _E = 0A	120	-	-	
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = 0.1mA, I _C = 0A	6	-	-	
Collector Cutoff Current	I _{CBO}	V _{CB} =80V, I _E = 0A	-	-	100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} = 6V, I _C = 0A	-	-	100	
Collector-Emitter Cutoff Current	I _{CES}	V _{CES} =100V, I _E = 0A	-	-	100	
ON Characteristics						
DC Current Gain ^(Note 1)	h _{FE}	V _{CE} = 2V, I _C = 5mA	100	-	-	-
		V _{CE} = 2V, I _C = 150mA	100	-	250	
		V _{CE} = 2V, I _C = 500mA	40	-	-	
Collector-Emitter Saturation Voltage (Note 1)	V _{CE(SAT)}	I _C = 100mA, I _B = 10mA	-	60	120	mV
		I _C = 500mA, I _B = 50mA	-	150	350	
		I _C = 1A, I _B = 100mA	-	250	500	
Base-Emitter Saturation Voltage (Note 1)	V _{BE(SAT)}	I _C = 100mA, I _B = 10mA	-	-	1	V
		I _C = 500mA, I _B = 50mA	-	-	1.1	
Transition Frequency	f _T	V _{CE} = 5V, I _E = 50mA	100	-	-	MHz
Collector Output Capacitance	C _{OB}	V _{CB} = 10V, I _E = 0A, f=1MHz	-	-	10	pF

Notes :

1. Pulse width ≤ 300us, Duty cycle ≤ 2%.
2. Mounted on FR4 PCB at 1 inch square copper pad.

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TYPICAL CHARACTERISTIC CURVES

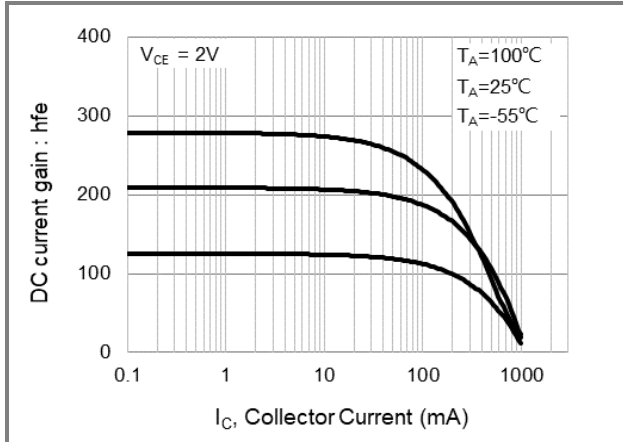


Fig.1 DC Current Gain

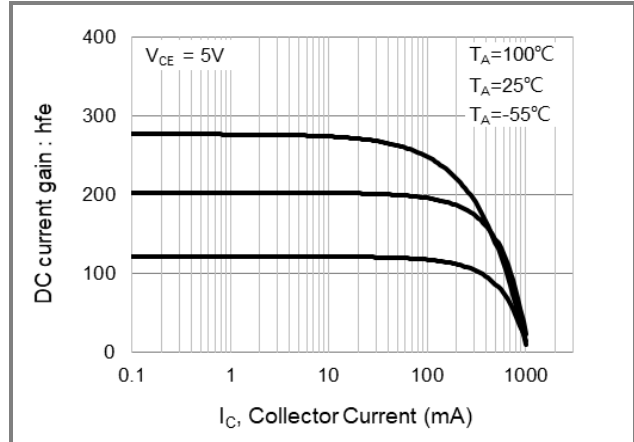


Fig.2 DC Current Gain

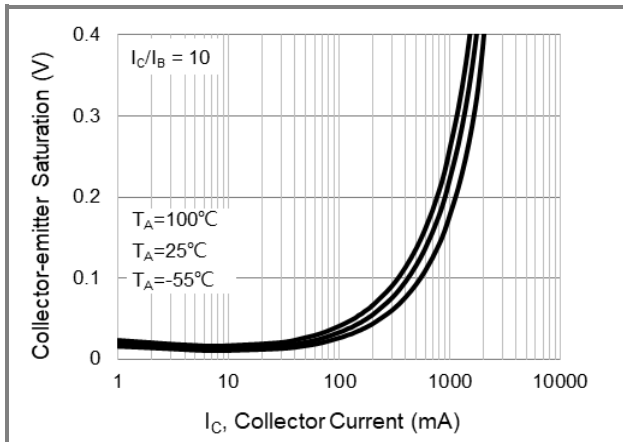


Fig.3 Collector-Emitter Saturation Voltage

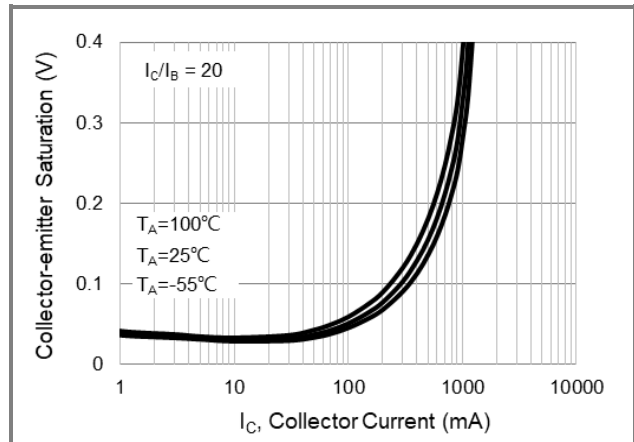


Fig.4 Collector-Emitter Saturation Voltage

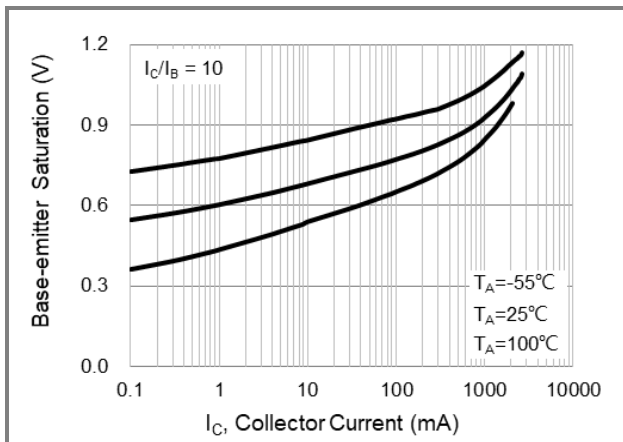


Fig.5 Base-Emitter Saturation Voltage

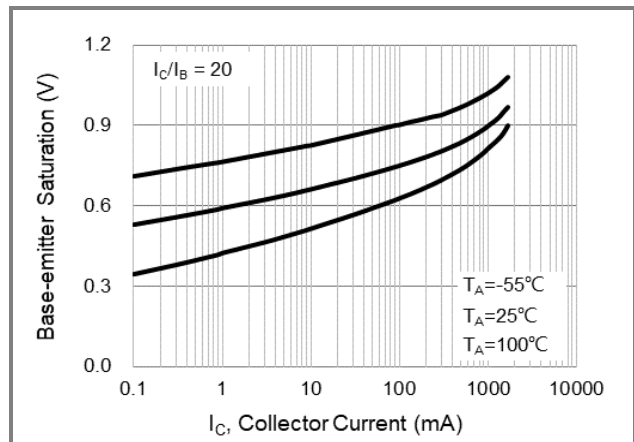
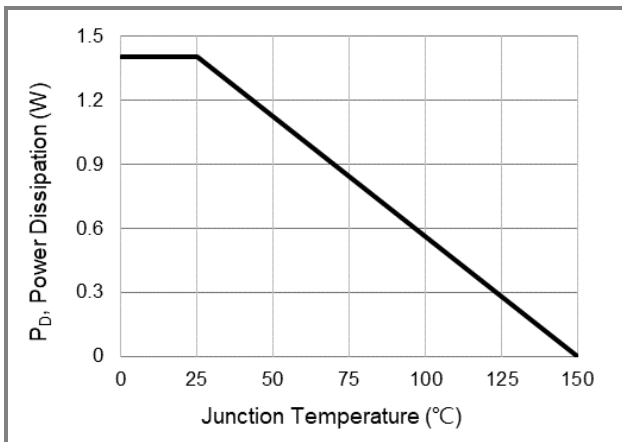
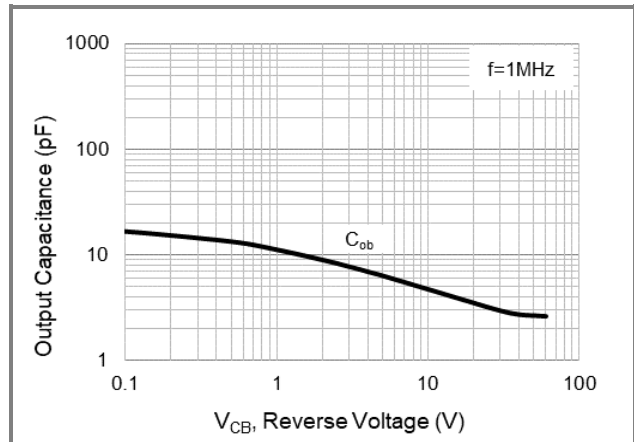
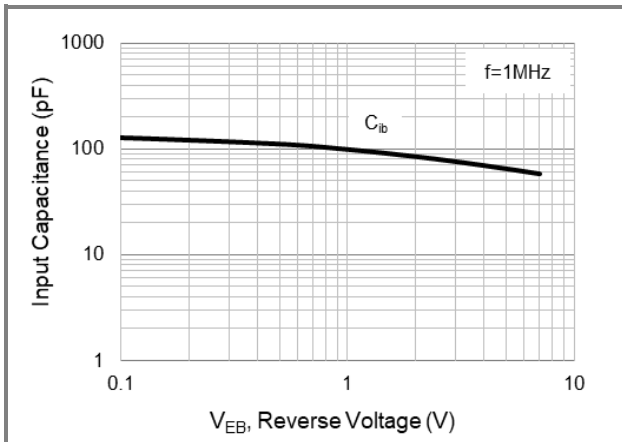
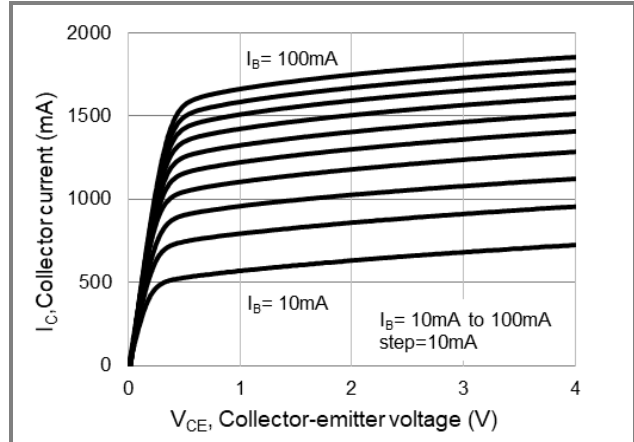
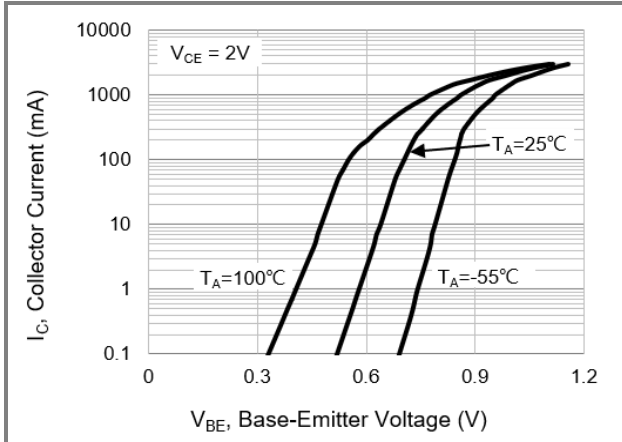


Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

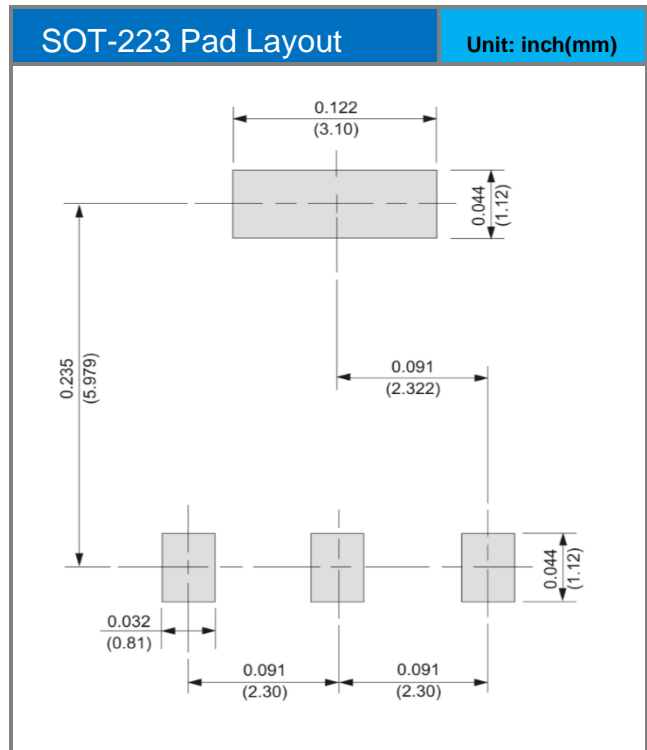
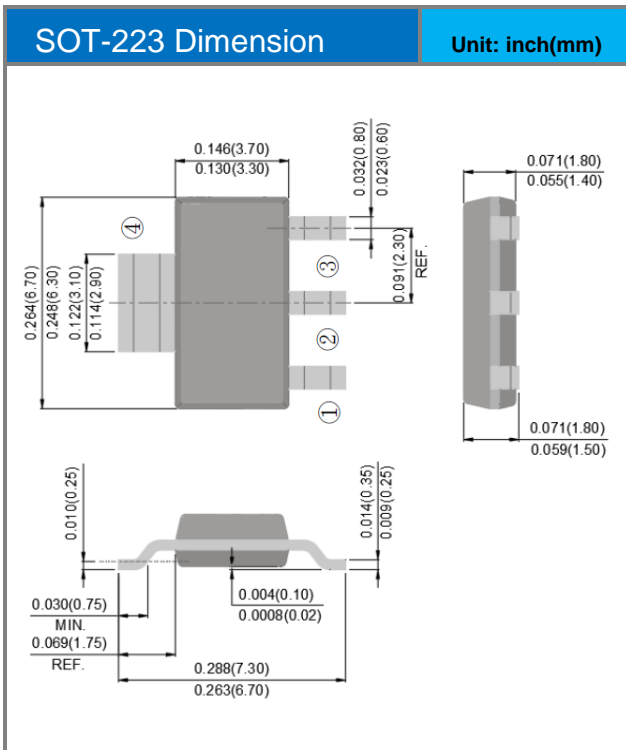


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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
BCP56-16-AU	SOT-223	2.5K pcs / 13" reel	8110DW

Packaging Information & Mounting Pad Layout



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