

BCP56-16-AU

NPN Low Vce(sat) Transistor

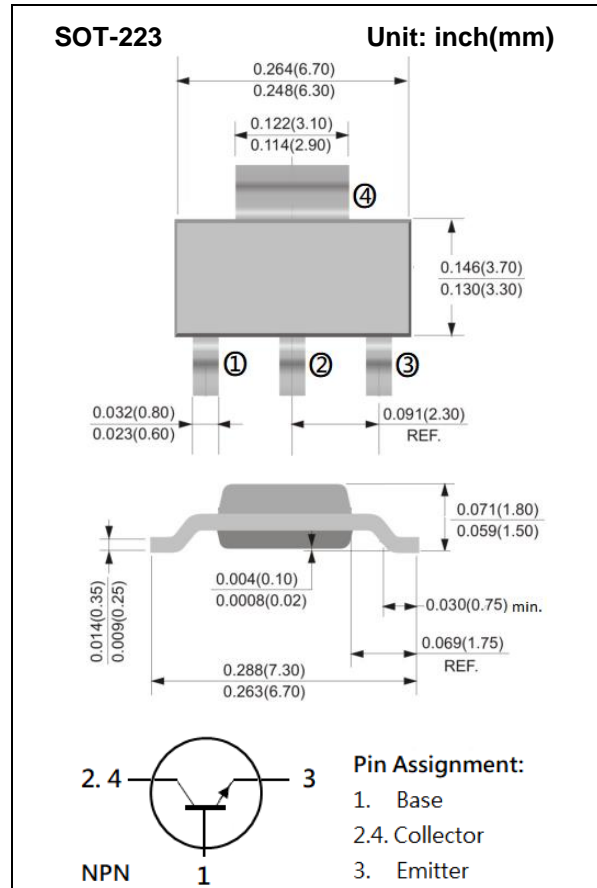
Voltage	100V	Current	1A
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Features

- Silicon NPN epitaxial type
- Low Vce(sat) 0.35V(max)@Ic/Ib= 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: 0.043 ounces, 0.123 grams
- Marking: 8110DW



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Base Voltage	V _{CBO}	120	V
Collector-Emitter Voltage	V _{CEO}	100	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current (DC)	I _C	1	A
Collector Current (Pulse)	I _{CP}	3	A
Power Dissipation	P _D	2.6	W
Junction Temperature	T _J	150	°C
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Thermal Resistance from Junction to Ambient ^(Note)	R _{θJA}	48	°C/W

Note: Mounted on FR4 PCB at 1 inch square copper pad.

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
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	-	-	V
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = 0.1mA, I _C = 0A	6	-	-	V
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	nA
ON characteristics						
DC Current Gain (Note1)	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 (Note1)	V _{CE(SAT)}	I _C = 0.1A, I _B = 10mA	-	60	120	mV
		I _C = 0.5A, I _B = 50mA	-	150	350	
		I _C = 1A, I _B = 0.1A	-	250	500	
Base-Emitter Saturation voltage (Note1)	V _{BE(SAT)}	I _C = 0.1A, I _B = 10mA	-	-	1.0	V
		I _C = 0.5A, 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

Note: 1. Pulse width ≤ 300us, Duty cycle ≤ 2%

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TYPICAL CHARACTERISTIC CURVES

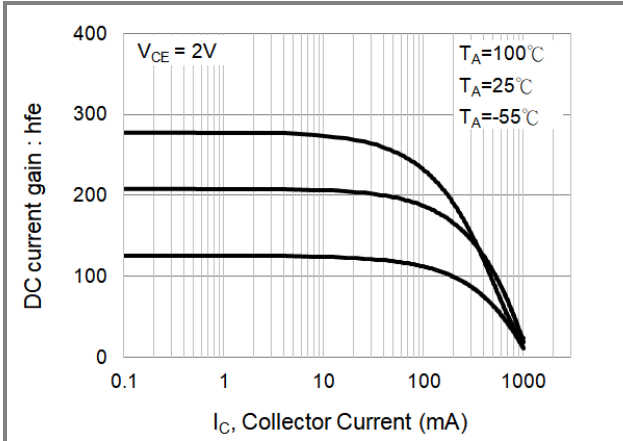


Fig.1 DC Current Gain

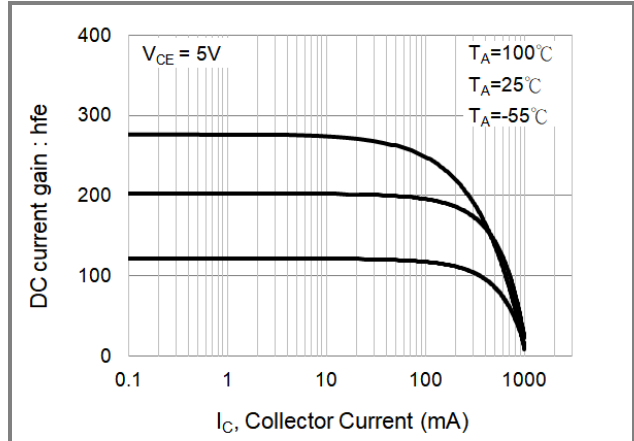


Fig.2 DC Current Gain

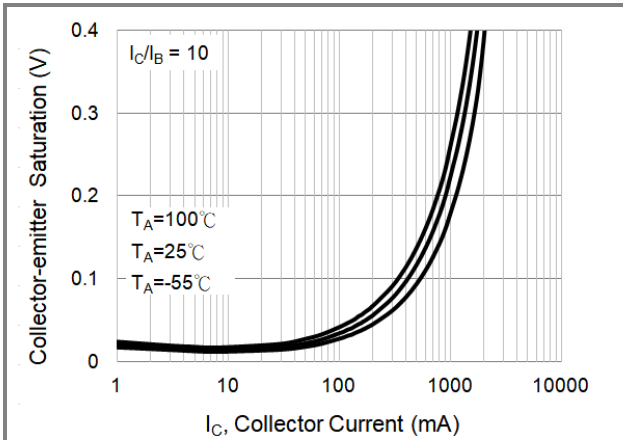


Fig.3 Collector-Emitter Saturation Voltage

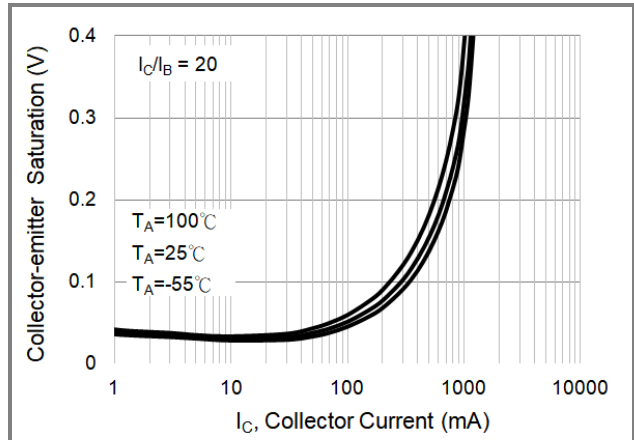


Fig.4 Collector-Emitter Saturation Voltage

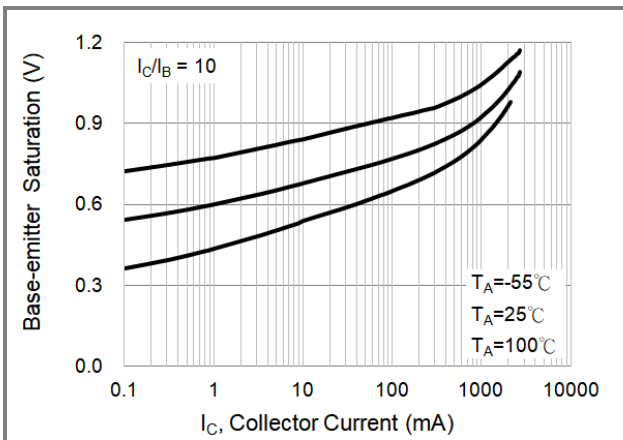


Fig.5 Base-Emitter Saturation Voltage

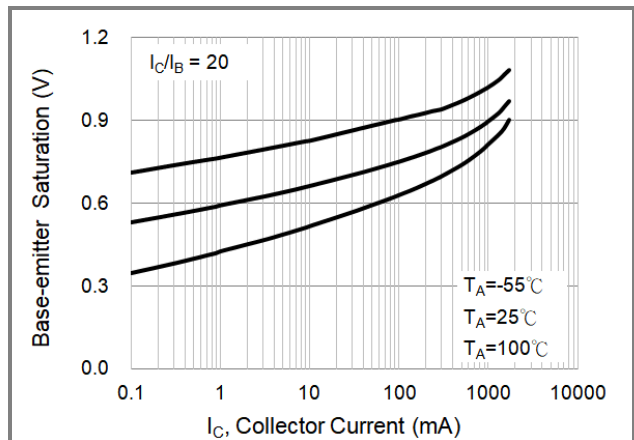


Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

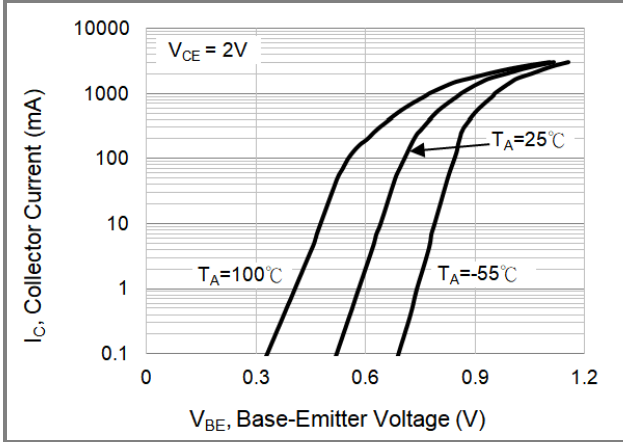


Fig.7 Base-Emitter Voltage

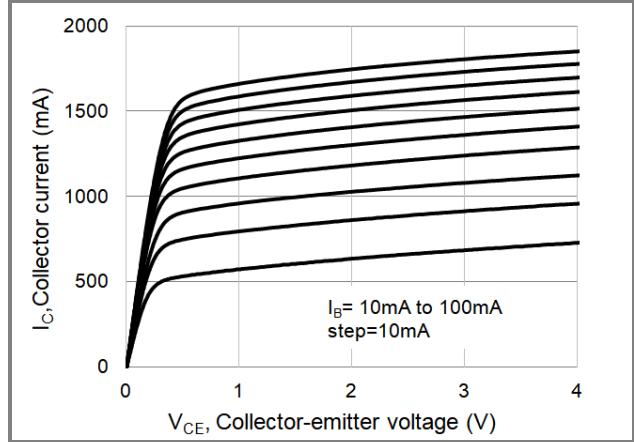


Fig.8 Collector Current

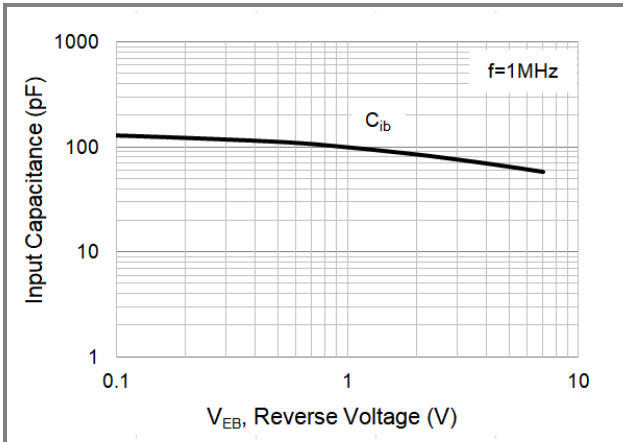


Fig.9 Input Capacitance

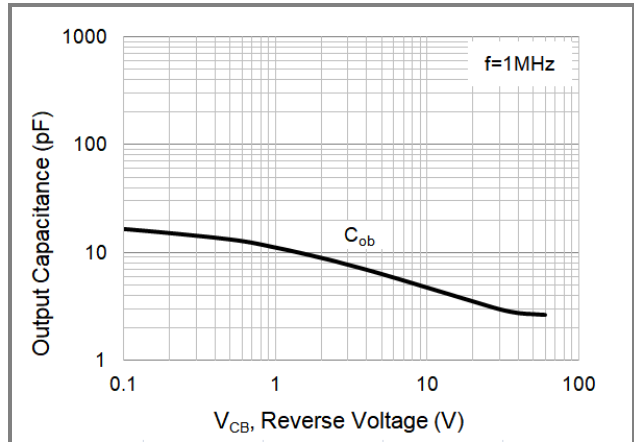


Fig.10 Output Capacitance

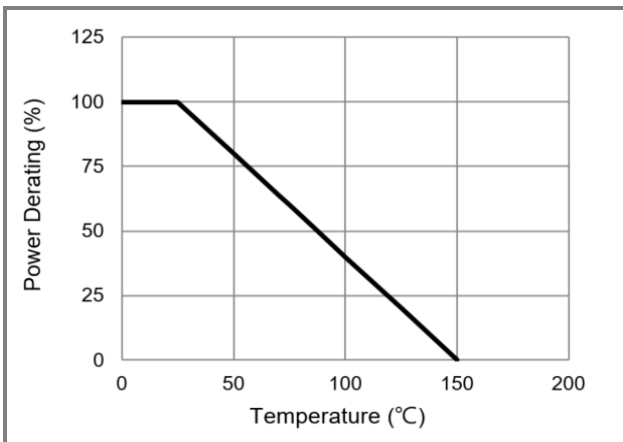


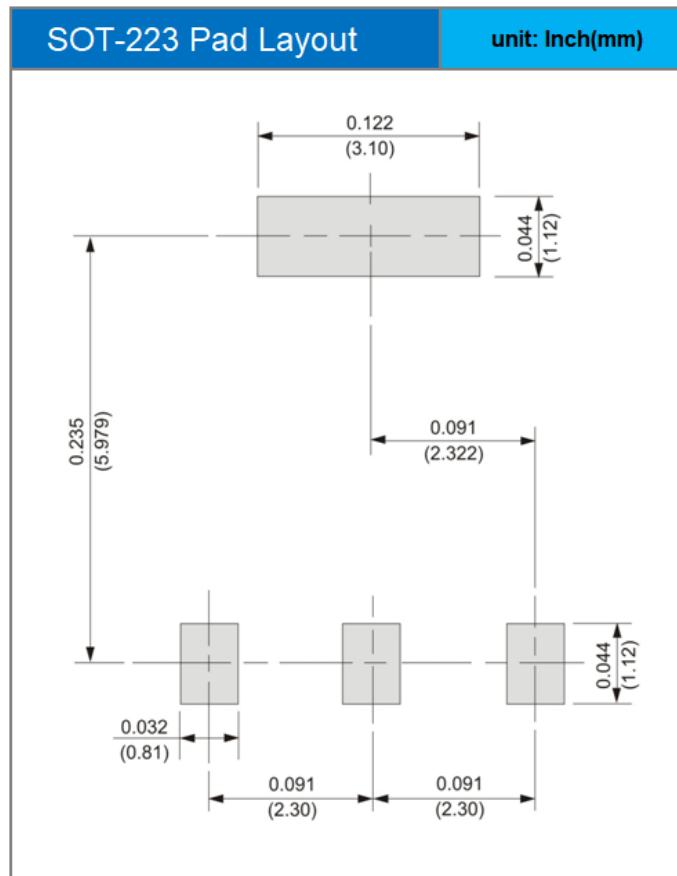
Fig.11 Power Derating Curve

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
BCP56-16-AU	SOT-223	2,500 pcs / 13" reel	8110DW

Mounting Pad Layout



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