BCP56-16-AU

NPN Low Vce(sat) Transistor

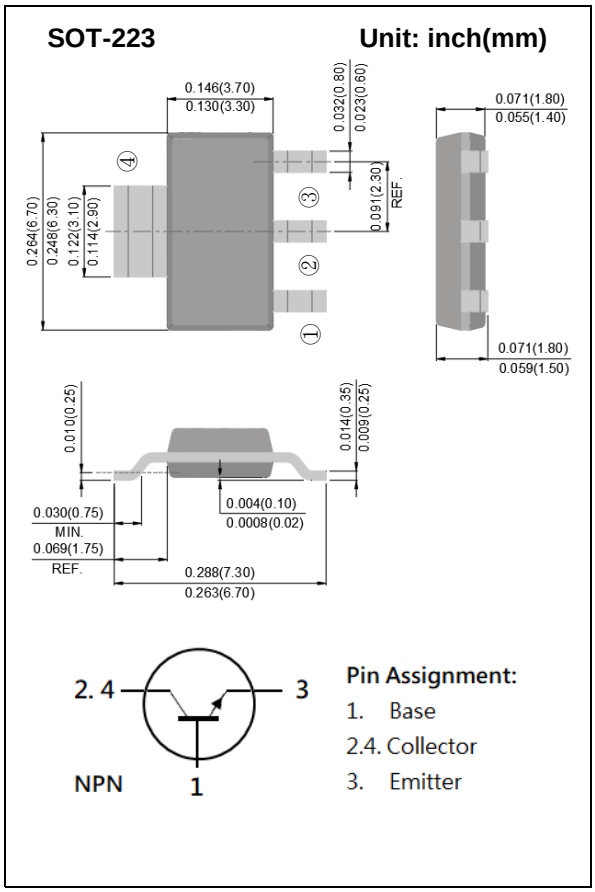
Voltage	100V	Current	1A

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 : 0.123 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)	$R_{\theta JA}$	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

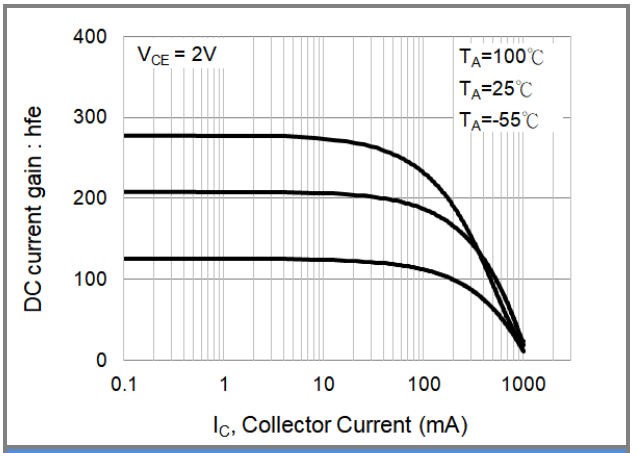

Fig.1 DC Current Gain

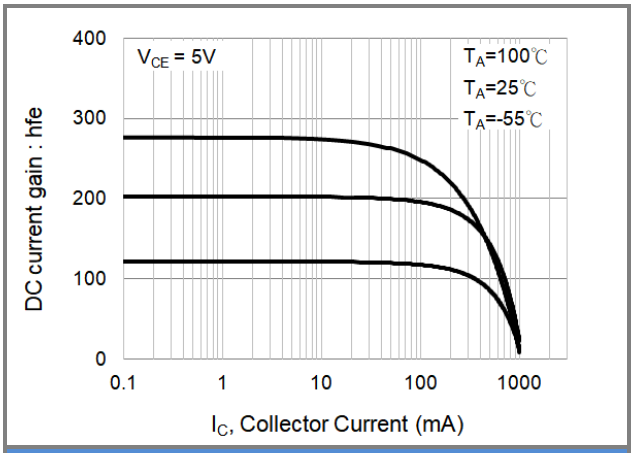

Fig.2 DC Current Gain

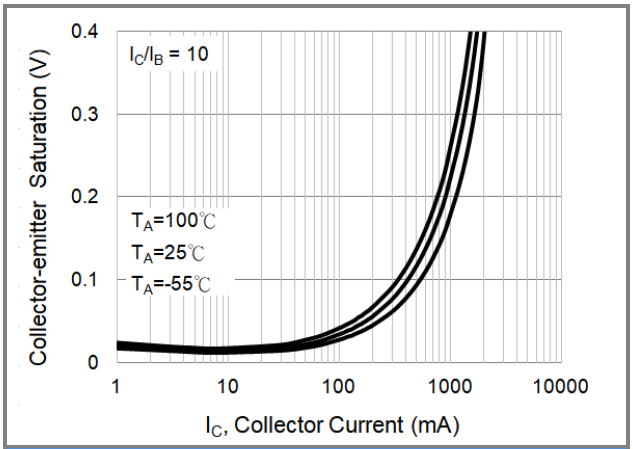

Fig.3 Collector-Emitter Saturation Voltage

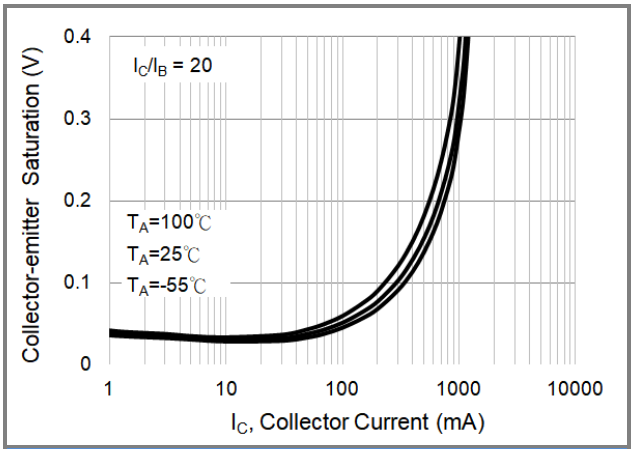

Fig.4 Collector-Emitter Saturation Voltage

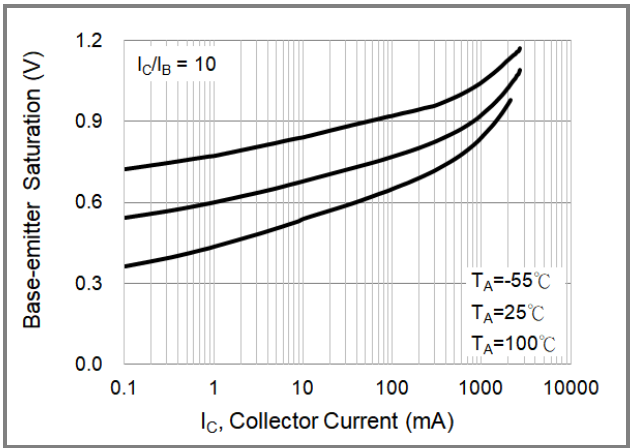

Fig.5 Base-Emitter Saturation Voltage

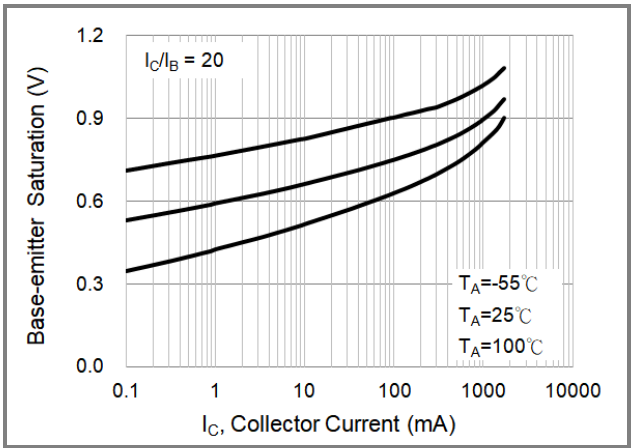

Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

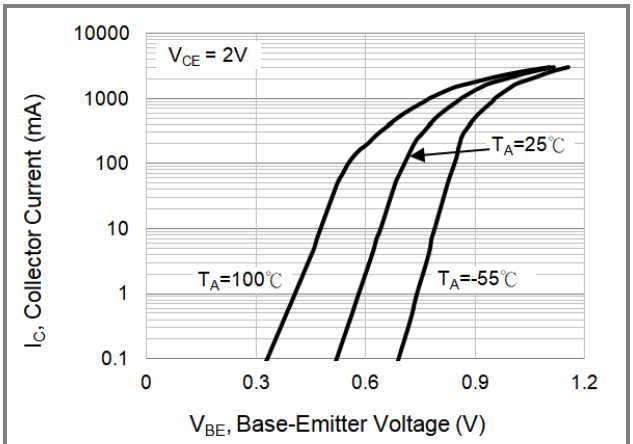

Fig.7 Base-Emitter Voltage

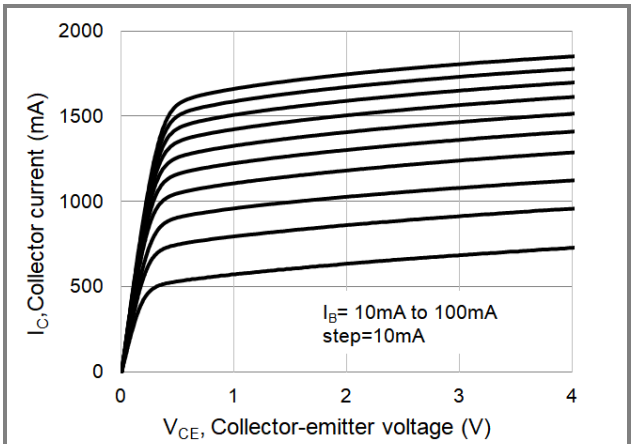

Fig.8 Collector Current

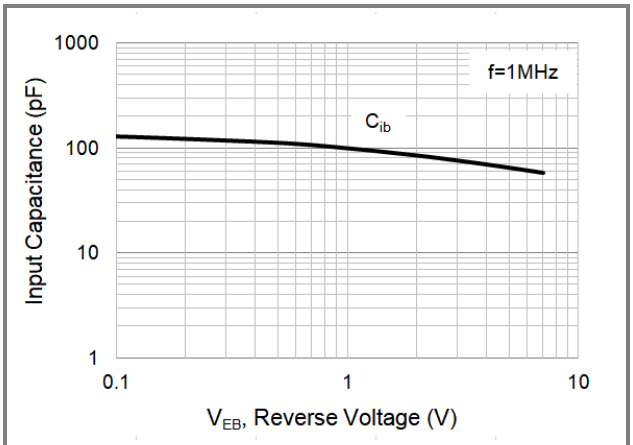

Fig.9 Input Capacitance

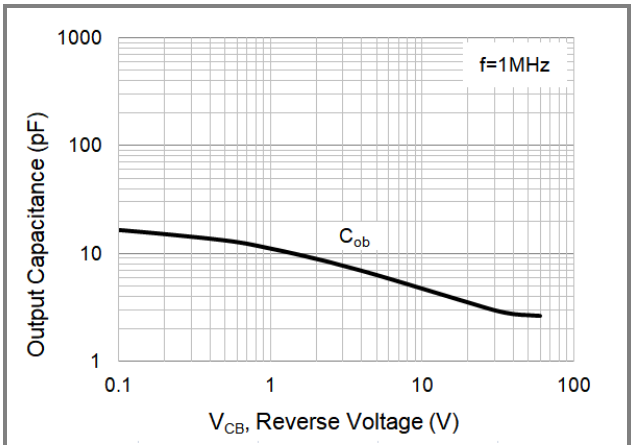

Fig.10 Output Capacitance

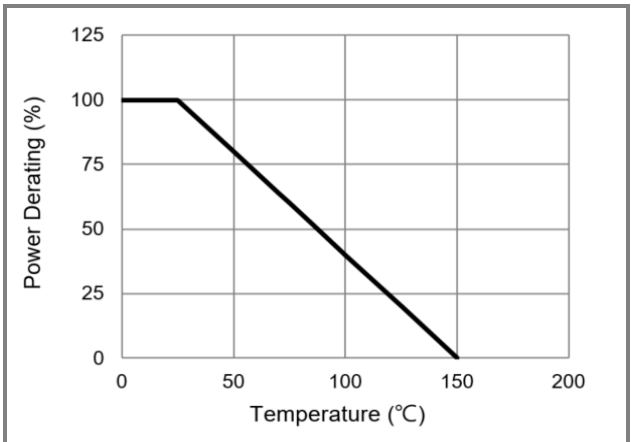

Fig.11 Power Derating Curve

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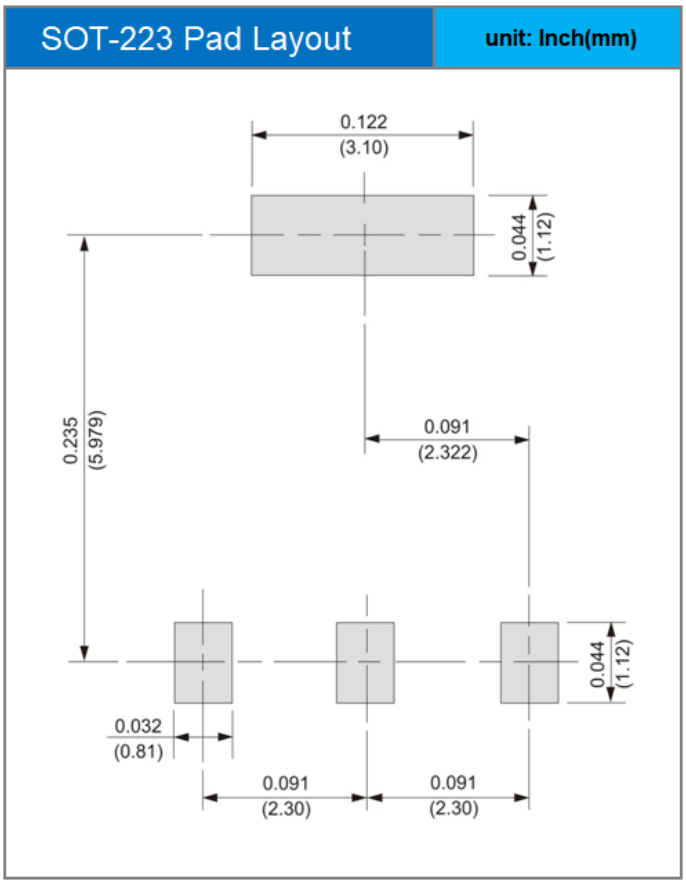
Product and Packing Information

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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