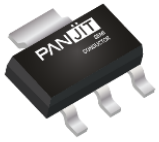
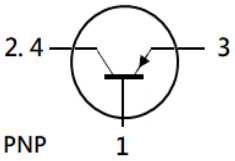
BCP53-16-AU

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

Voltage	-100V	Current	-1A

SOT-223





Pin Assignment:
1. Base
2.4. Collector
3. Emitter

Features

- Silicon PNP epitaxial type
- Low $V_{CE(SAT)}$ -0.4V(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
- NPN complement : BCP56-16-AU

Mechanical Data

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

Maximum Ratings and Thermal Characteristics (T_A=25°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≦10sec	P_D	2.6	W
	Steady State		1.4	
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Thermal Resistance Junction to Ambient (Note 2)	t≦10sec	$R_{\theta JA}$	48	°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= -10mA	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	-	-90	-150	mV
		I_C= -500mA, I_B= -50mA	-	-260	-400	
		I_C= -1A, I_B= -100mA		-430	-600	
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

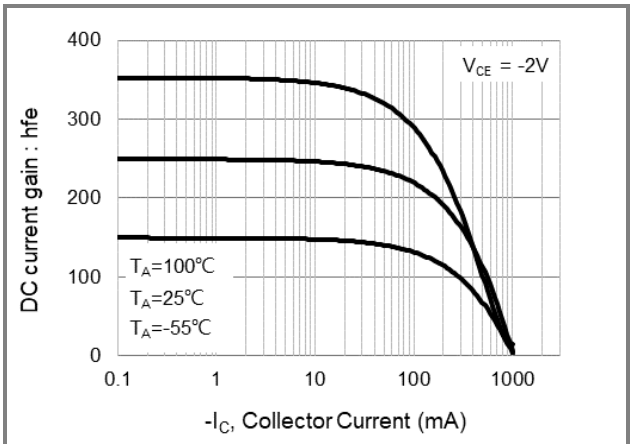

Fig.1 DC Current Gain

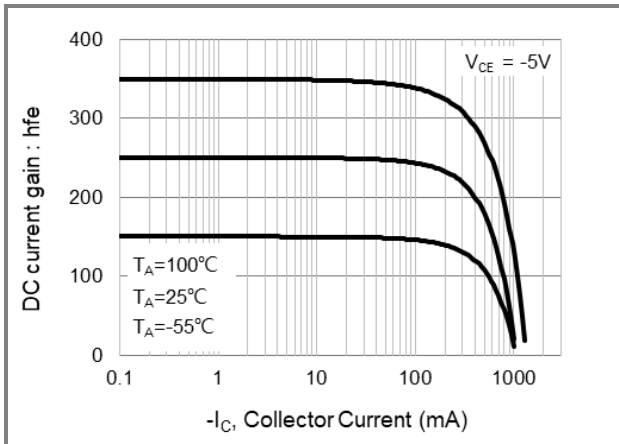

Fig.2 DC Current Gain

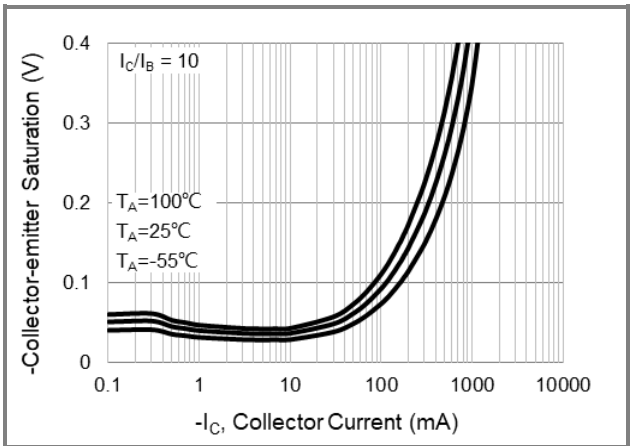

Fig.3 Collector-Emitter Saturation Voltage

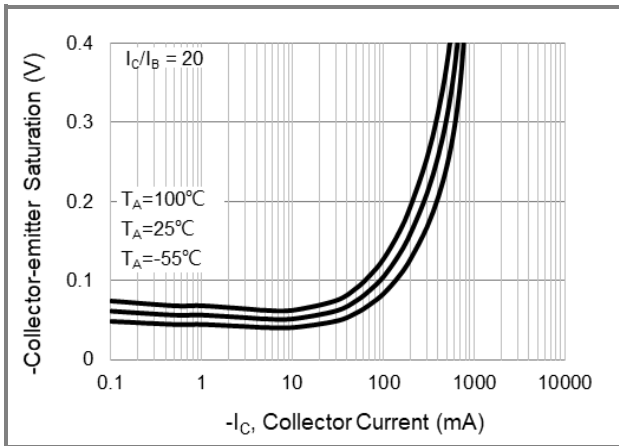

Fig.4 Collector-Emitter Saturation Voltage

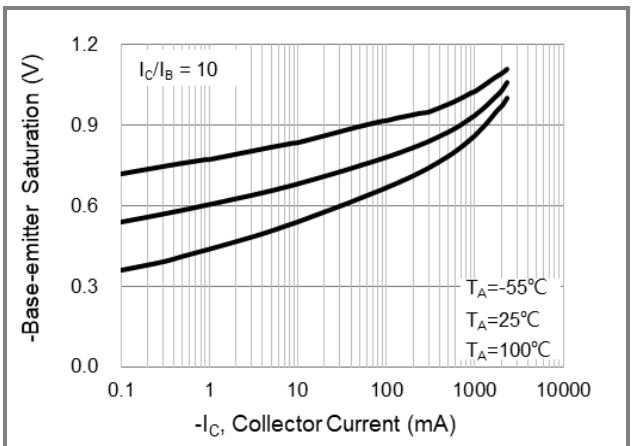

Fig.5 Base-Emitter Saturation Voltage

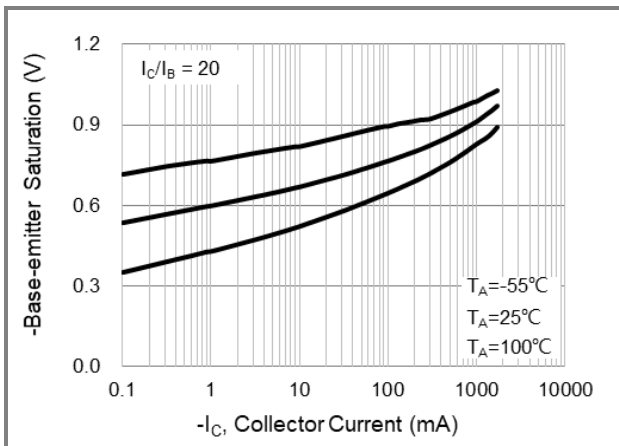

Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

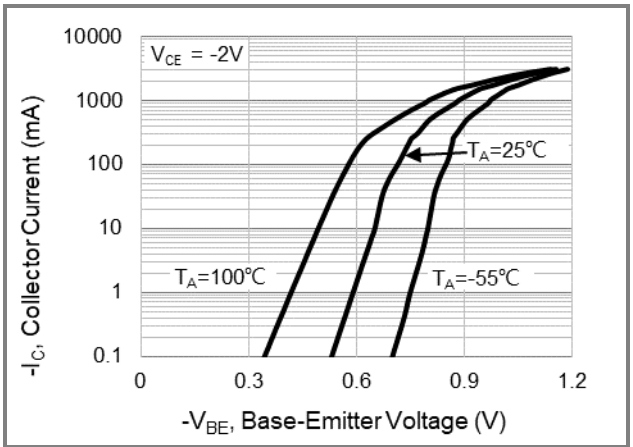

Fig.7 Base-Emitter Turn-On Voltage

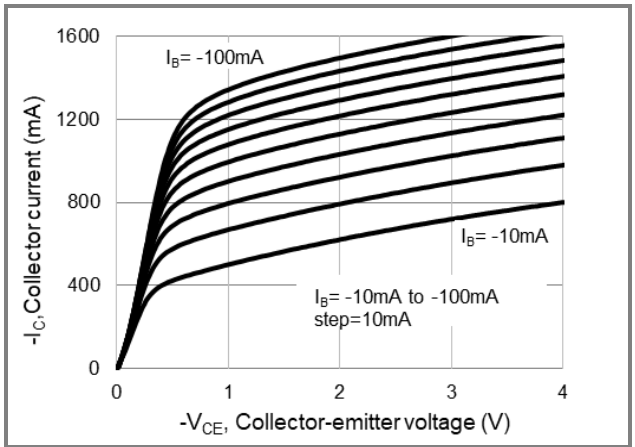

Fig.8 Collector Current

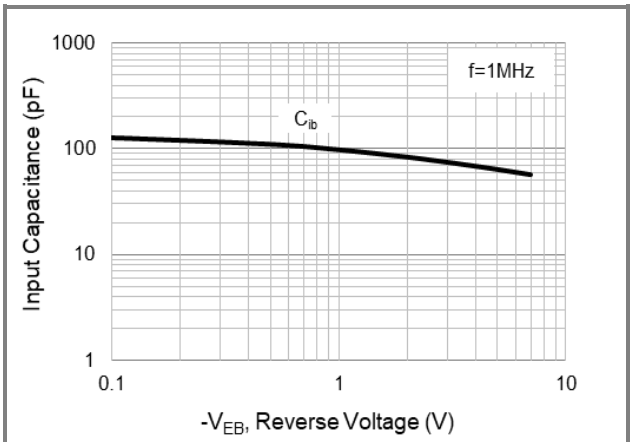

Fig.9 Input Capacitance

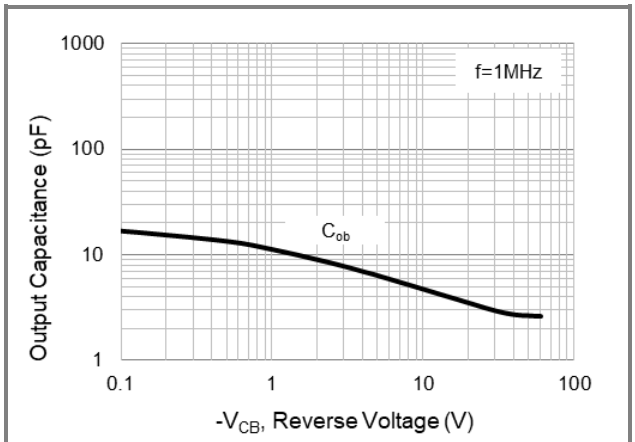

Fig.10 Output Capacitance

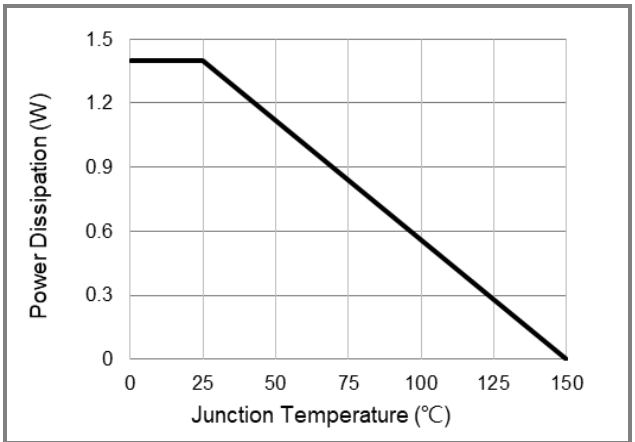

Fig.11 Power Derating Curve

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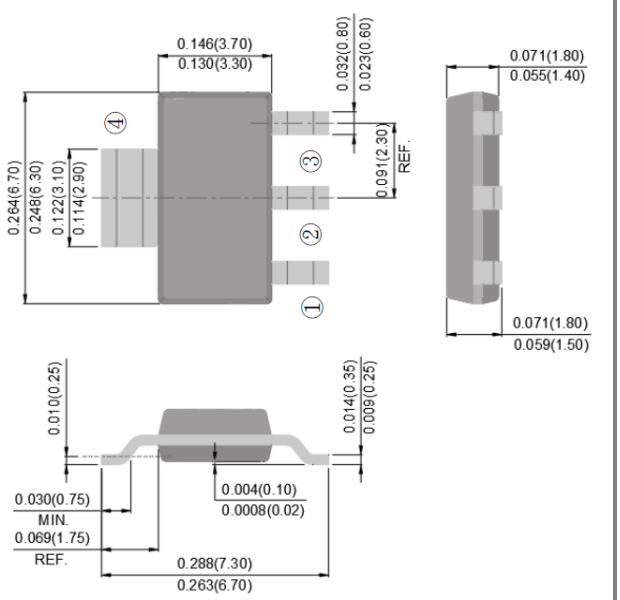
Product and Packing Information

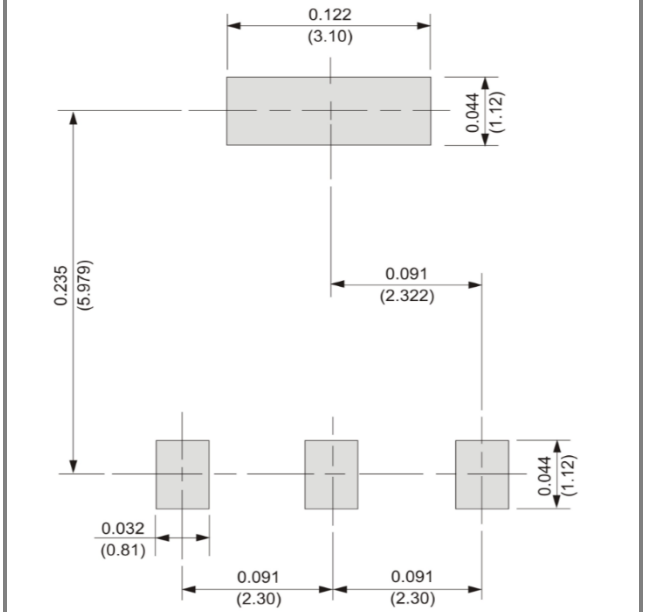
Part No.	Package Type	Packing Type	Marking
BCP53-16-AU	SOT-223	2.5K pcs / 13” reel	9110DW

Packaging Information & Mounting Pad Layout

SOT-223 Dimension — Unit: inch(mm)



SOT-223 Pad Layout — Unit: inch(mm)



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