

BCA52-16-AU

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

Voltage

-60V

Current

-1A

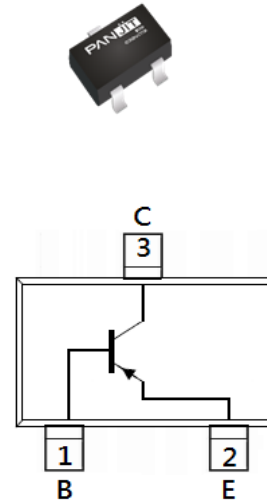
Features

- Silicon PNP epitaxial type
- Low $V_{CE(SAT)}$ -0.5V(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 : BCA55-16-AU

Mechanical Data

- Case : SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0084 grams

SOT-23



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

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	
Emitter-Base Voltage	V_{EBO}	-5	
Collector Current (DC)	I_C	-1	A
Collector Current (Pulse)	I_{CM}	-2	
Base Current (DC)	I_B	-0.1	
Base Current (Pulse)	I_{BM}	-0.2	
Power Dissipation	P_D	0.83	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Resistance From Junction to Ambient ^(Note 2)	$R_{\theta JA}$	150	$^\circ\text{C/W}$

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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	-60	-	-	V
Collector-Base Breakdown Voltage	BV _{CBO}	I _C = -0.1mA, I _E = 0A	-60	-	-	
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = -0.1mA, I _C = 0A	-5	-	-	
Collector Cutoff Current	I _{CBO}	V _{CB} = -60V, I _E = 0A	-	-	-100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} = -5V, I _C = 0A	-	-	-100	
Collector-Emitter Cutoff Current	I _{CES}	V _{CES} = -60V, I _E = 0A	-	-	-100	
ON Characteristics						
DC Current Gain ^(Note 1)	h _{FE}	V _{CE} = -2V, I _C = -5mA	63	-	-	-
		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	-	-	-200	mV
		I _C = -500mA, I _B = -50mA	-	-	-500	
Base-Emitter Turn-On Voltage ^(Note 1)	V _{BE(ON)}	V _{CE} = -2V, I _C = -500mA	-	-	-1	V
Transition Frequency	f _T	V _{CE} = -10V, I _E = -50mA	-	180	-	MHz
Base input Capacitance	C _{IB}	V _{EB} = -0.5V, f=1MHz	-	126	-	pF
Collector Output Capacitance	C _{OB}	V _{CB} = -10V, f=1MHz	-	9	-	

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

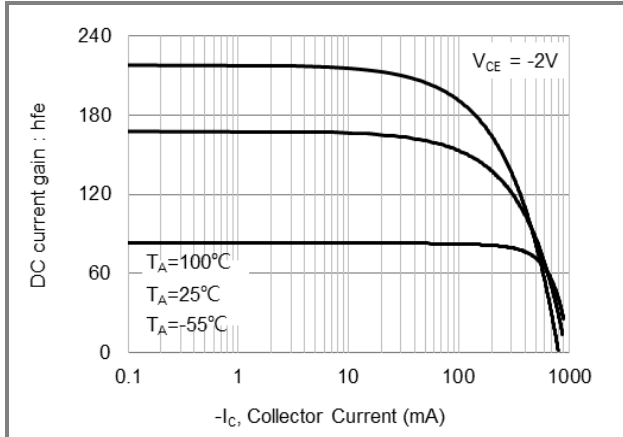


Fig.1 DC Current Gain

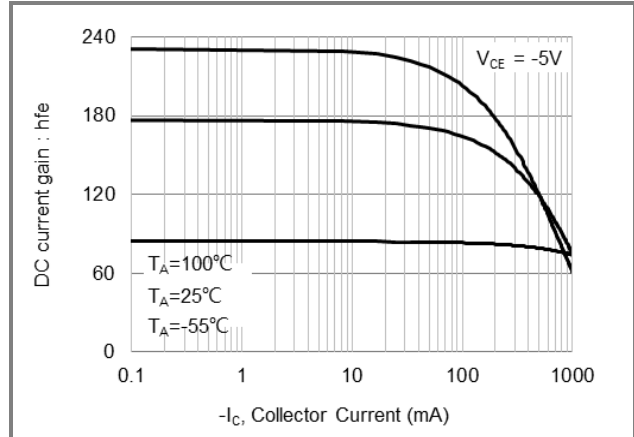


Fig.2 DC Current Gain

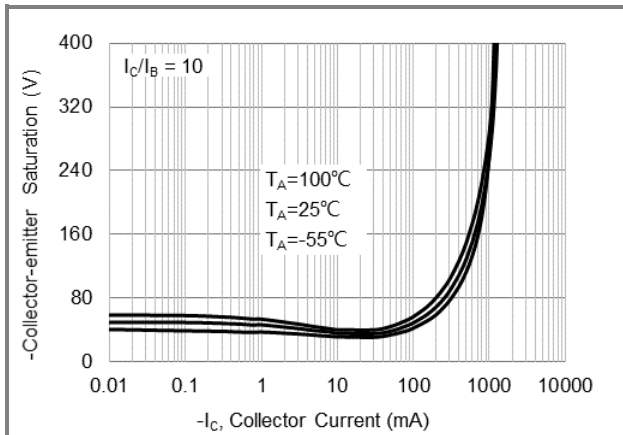


Fig.3 Collector-Emitter Saturation Voltage

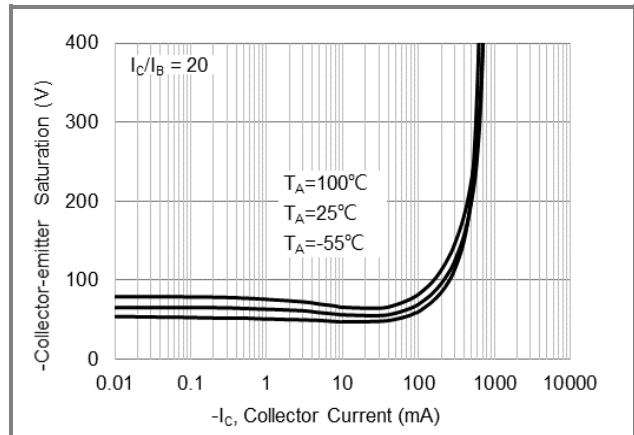


Fig.4 Collector-Emitter Saturation Voltage

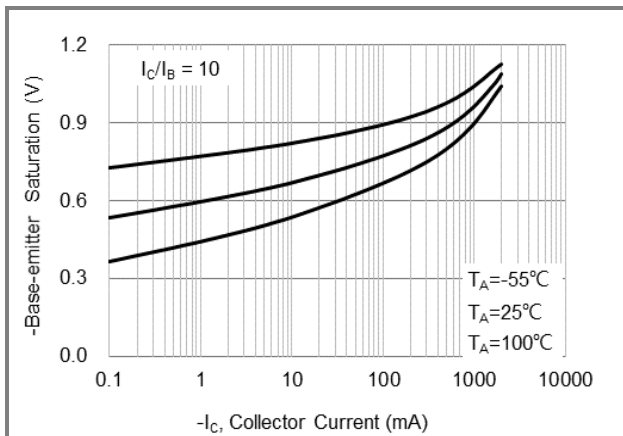


Fig.5 Base-Emitter Saturation Voltage

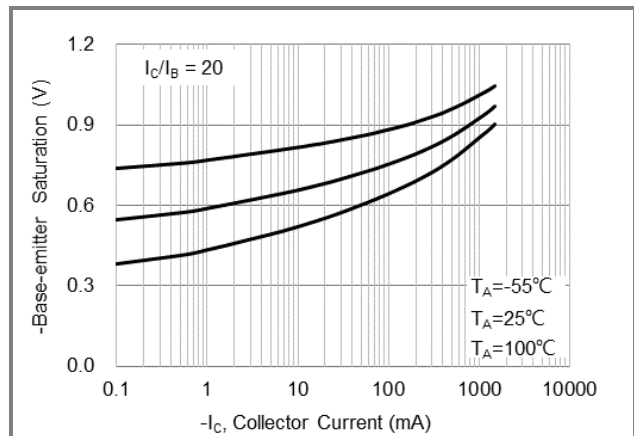


Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

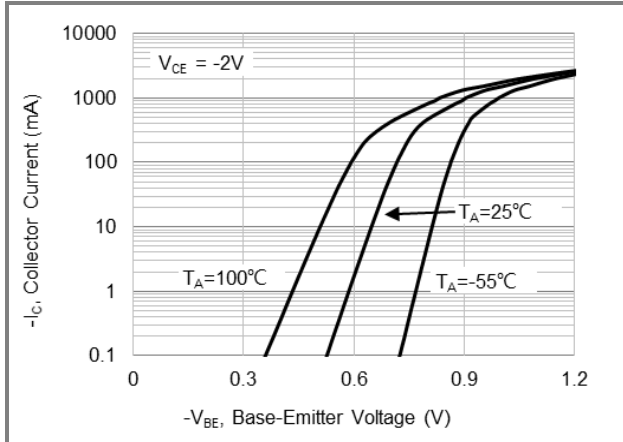


Fig.7 Base-Emitter Turn-On Voltage

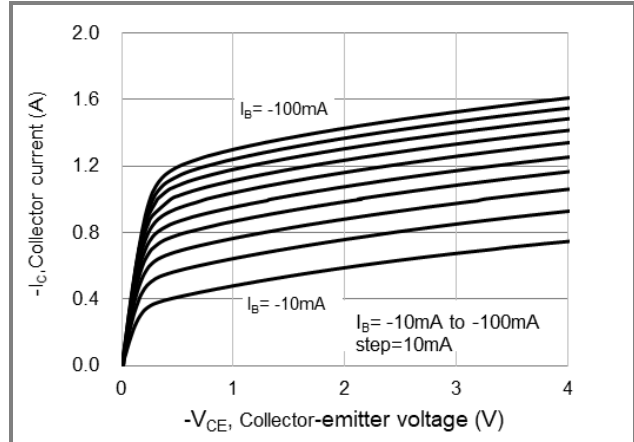


Fig.8 Collector Current

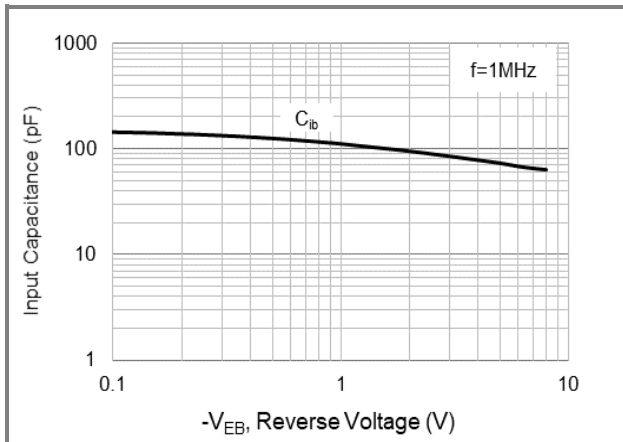


Fig.9 Input Capacitance

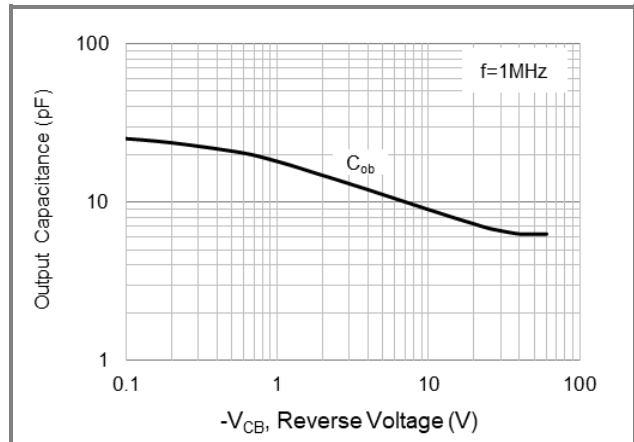


Fig.10 Output Capacitance

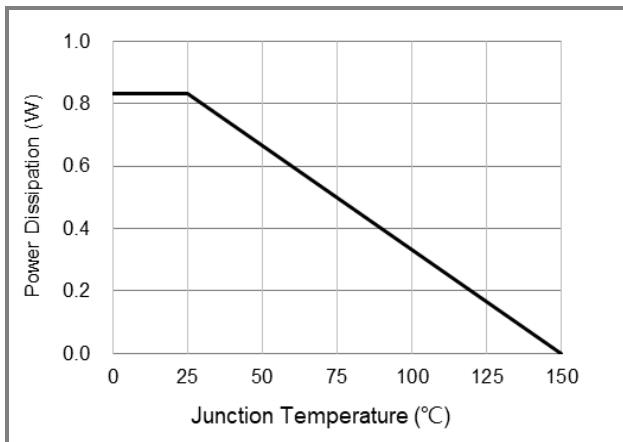


Fig.11 Power Derating Curve

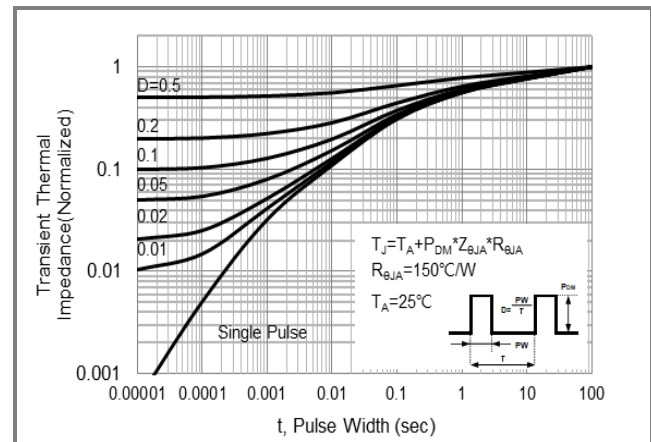


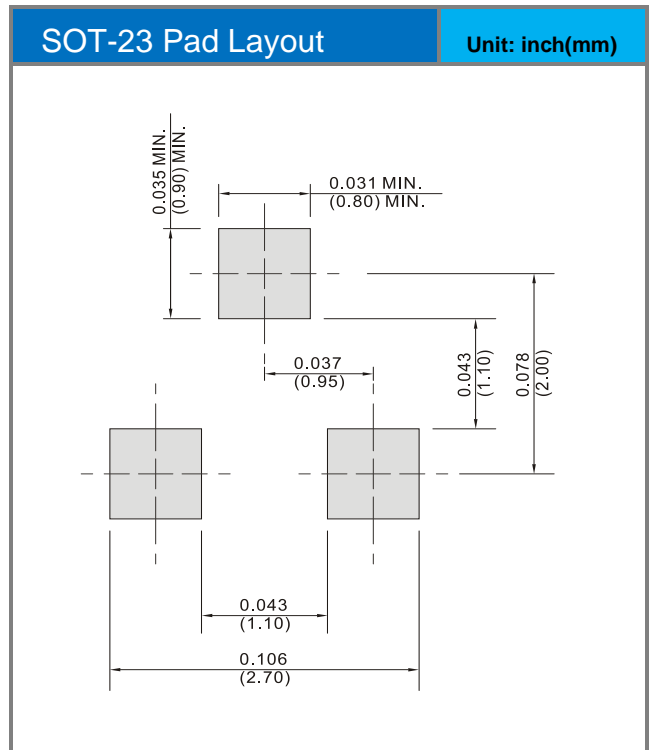
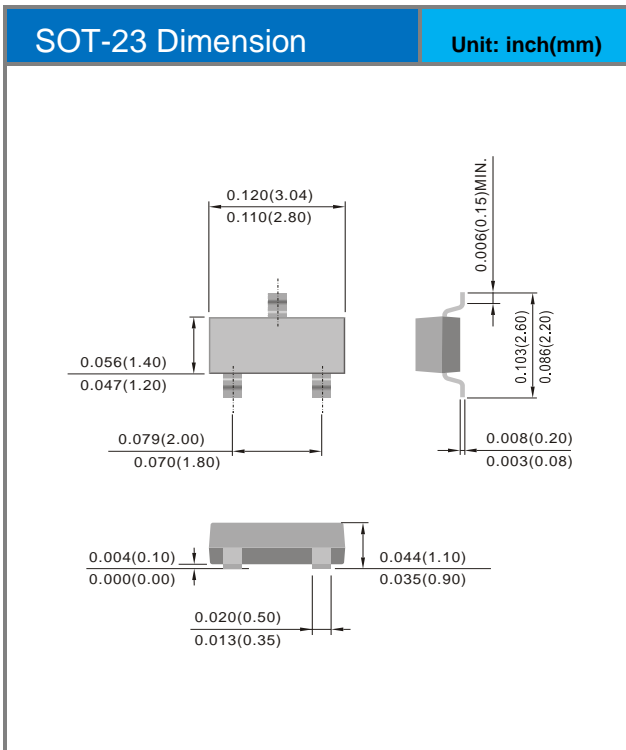
Fig.12 Normalized Transient Thermal Impedance

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
BCA52-16-AU	SOT-23	3K pcs / 7" reel	52M

Packaging Information & Mounting Pad Layout



BCA52-16-AU

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