

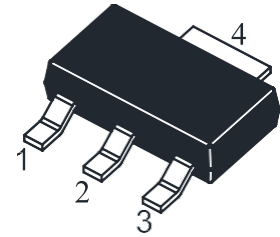
## NPN Silicon Epitaxial Planar Transistors

### Features

- AEC-Q101 Qualified
- Halogen and Antimony Free(HAF), RoHS compliant

### Mechanical Data

- SOT-223 Plastic Package
- Mounting position: Any



1.Base 2.Collector 3.Emitter 4. Collector  
SOT-223 Plastic Package

Absolute Maximum Ratings (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	Value	Unit
Collector Base Voltage	V <sub>CBO</sub>	100	V
Collector Emitter Voltage	V <sub>CEO</sub>	80	V
Emitter Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	1	A
Peak Collector Current	I <sub>CM</sub>	1.5	A
Peak Base Current	I <sub>BM</sub>	0.2	A
Total Power Dissipation	P <sub>tot</sub>	1.33	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	- 65 to + 150	°C

Thermal Characteristics			
Parameter	Symbol	Value	Unit
Thermal Resistance Junction to Ambient <sup>1)</sup>	R <sub>thJA</sub>	94	°C/W

<sup>1)</sup> Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.

Electrical Characteristics (T <sub>A</sub> = 25°C unless otherwise noted)					
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V <sub>CE</sub> = 2 V, I <sub>C</sub> = 5 mA at V <sub>CE</sub> = 2 V, I <sub>C</sub> = 500 mA at V <sub>CE</sub> = 2 V, I <sub>C</sub> = 150 mA ABCP56-10Q ABCP56-16Q	h <sub>FE</sub>	25 25 63 100	-	- - 160 250	-
Collector Base Cutoff Current at V <sub>CB</sub> = 30 V	I <sub>CBO</sub>	-	-	100	nA
Emitter Base Cutoff Current at V <sub>EB</sub> = 5 V	I <sub>EBO</sub>	-	-	100	nA
Collector Base Breakdown Voltage at I <sub>C</sub> = 100 μA	V <sub>(BR)CBO</sub>	100	-	-	V
Collector Emitter Breakdown Voltage at I <sub>C</sub> = 1 mA	V <sub>(BR)CEO</sub>	80	-	-	V
Emitter Base Breakdown Voltage at I <sub>E</sub> = 100 μA	V <sub>(BR)EBO</sub>	5	-	-	V
Collector Emitter Saturation Voltage at I <sub>C</sub> = 0.5 A, I <sub>B</sub> = 50 mA	V <sub>CE(sat)</sub>	-	-	500	mV
Base Emitter Saturation Voltage at I <sub>C</sub> = 0.5 A, I <sub>B</sub> = 50 mA	V <sub>BE(sat)</sub>	-	-	1.1	V
Base Emitter Voltage at V <sub>CE</sub> = 2 V, I <sub>C</sub> = 0.5 A	V <sub>BE</sub>	-	-	1	V
Transition Frequency at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 100 MHz	f <sub>T</sub>	-	130	-	MHz

## Typical Characteristics Curves

Fig. 1 Output Characteristics Curve

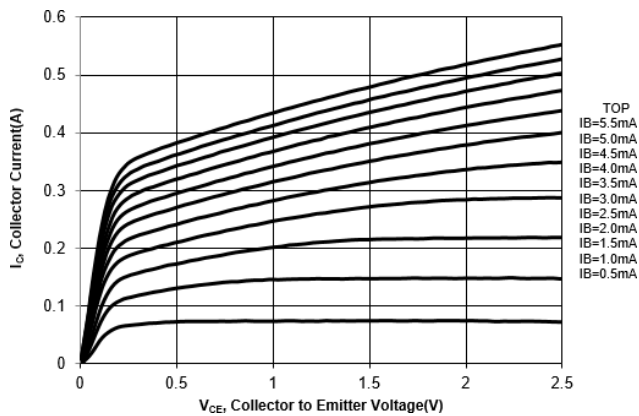


Fig. 2 Collector Current vs. Base to Emitter Voltage

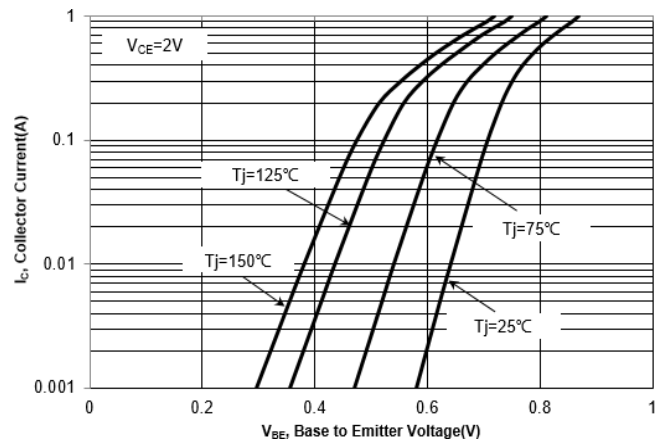


Fig. 3 DC Current Gain vs. Collector Current

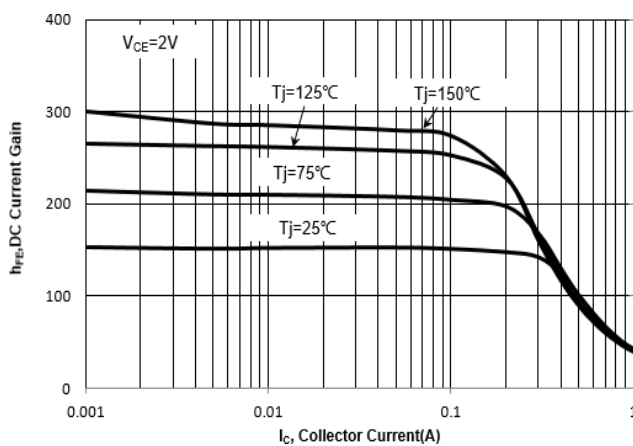


Fig. 4 VBE(sat) vs. Collector Current

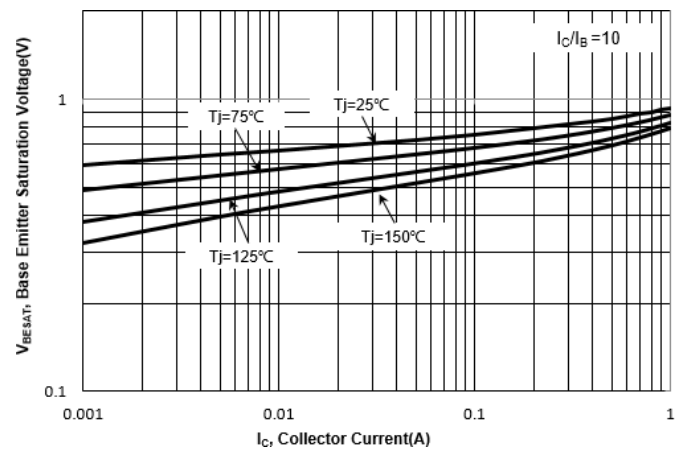


Fig. 5 VCE(sat) vs. Collector Current

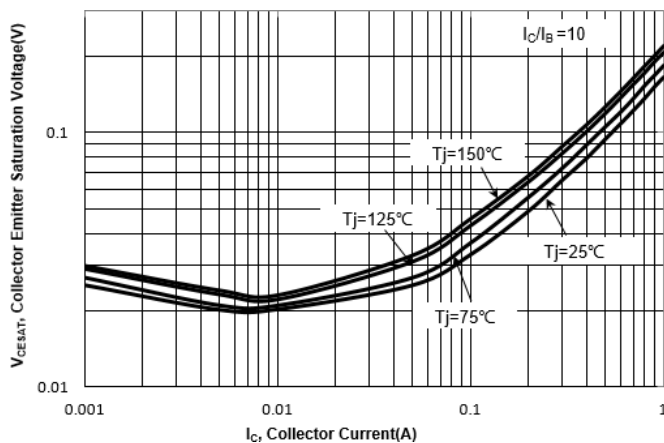


Fig. 6 Output Capacitance

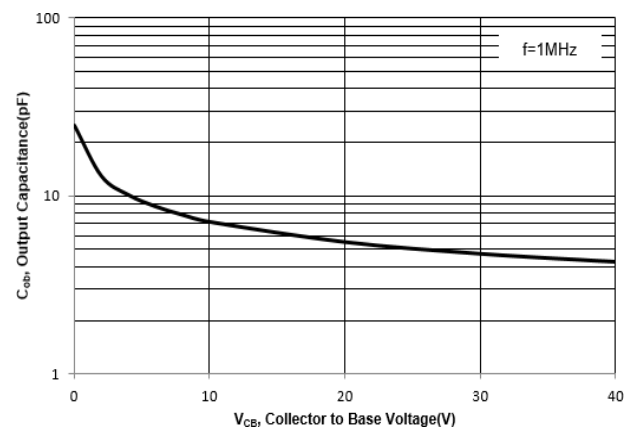
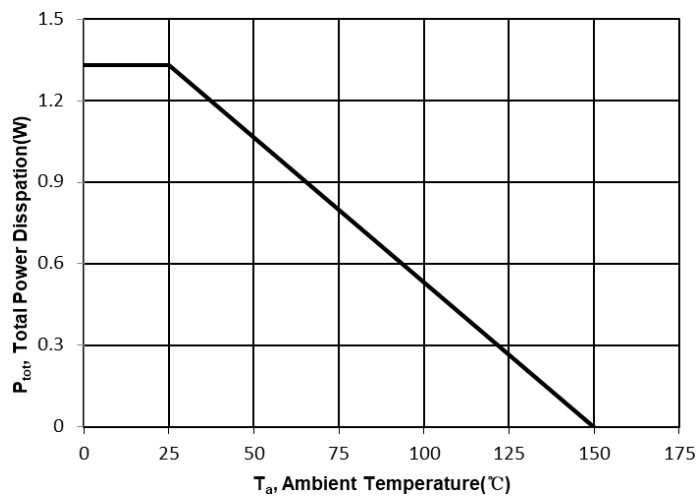
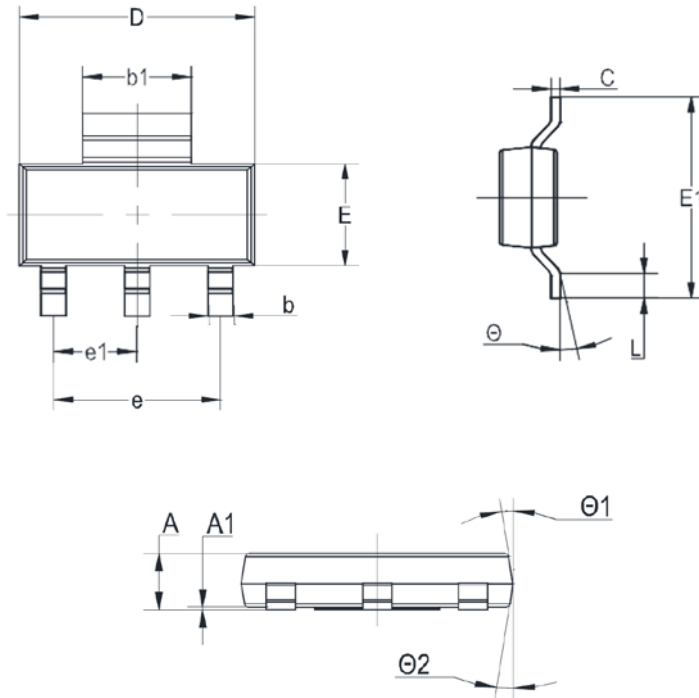


Fig. 7 Power Derating Curve



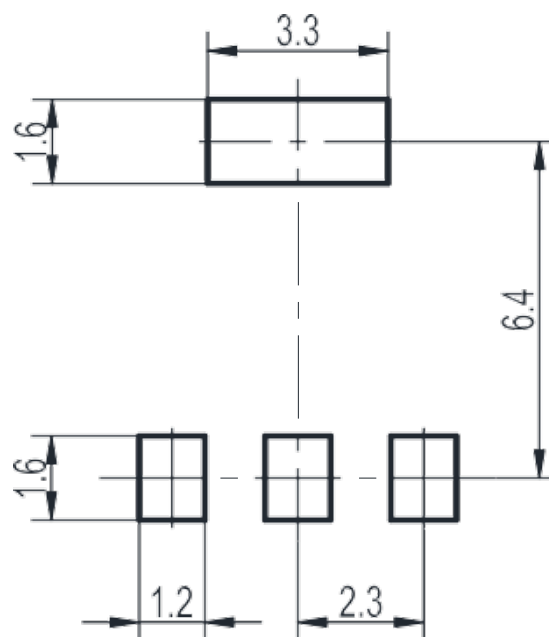
## Package Outline Dimensions (Unit: millimeters)

### SOT-223



SYMBOL	MILLIMETER		
	MIN	TYP	MAX
A	1.5	/	1.8
A1	/	/	0.1
b	0.6	/	0.8
b1	2.9	/	3.1
C	0.22	/	0.32
D	6.3	/	6.7
E	3.3	/	3.7
E1	6.7	/	7.3
e	/	/	4.6
e1	/	/	2.3
L	0.7	/	1.1
$\Theta$	0°	/	10°
$\Theta1$	0°	/	7°
$\Theta2$	0°	/	7°

## Recommended Soldering Footprint (Unit: millimeters)

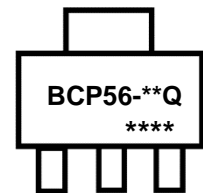


## Packing Information

Package	Tape Width	Pitch		Reel Size		Per Reel Packing Quantity
SOT-223	mm	mm	inch	mm	inch	
	12	$8 \pm 0.1$	$0.315 \pm 0.004$	330	13	3000

## Marking information

" BCP56-\*\*Q " = Part No. (" \* " = HFE grouping Code)  
 " \*\*\*\* " = Date Code Marking  
 Font type: Arial



## Revision History

Version	Date	Major Changes
Rev.A	2025.01.19	Official Release

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