



# BC856-AU SERIES

## PNP GENERAL PURPOSE TRANSISTORS

**VOLTAGE** 30/45/65 Volt **POWER** 330 mWatt

**SOT-23** Unit : inch(mm)

### FEATURES

- General Purpose Amplifier Applications
- Collector Current  $I_C = -100\text{mA}$
- Acquire quality system certificate : TS16949
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

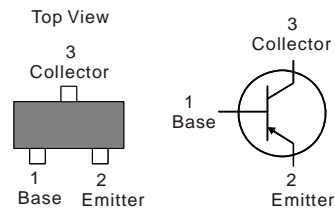
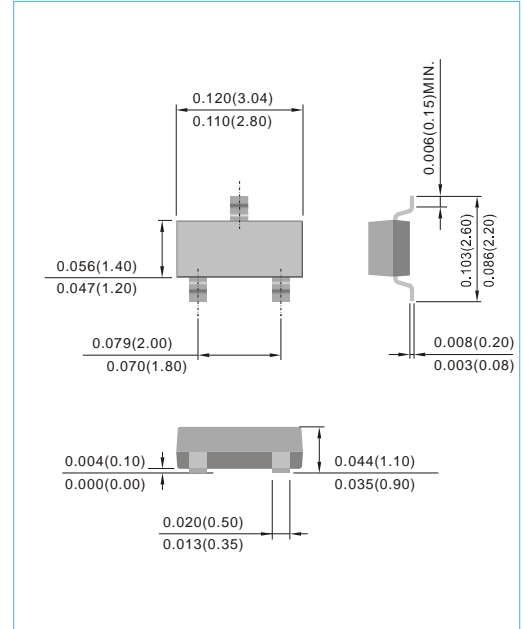
Case: SOT-23

Terminals: Solderable per MIL-STD-750, Method 2026

Approx. Weight: 0.0003 ounces, 0.008 grams

Marking:

Device Marking:			
BC856A-AU=56A	BC857A-AU=57A	BC858A-AU=58A	
BC856B-AU=56B	BC857B-AU=57B	BC858B-AU=58B	BC859B-AU=59B
	BC857C-AU=57C	BC858C-AU=58C	BC859C-AU=59C



### ABSOLUTE RATINGS

Parameter	Symbol	BC856-AU	BC857-AU	BC858-AU	BC859-AU	Units
Collector - Emitter Voltage	$V_{CEO}$	-65	-45	-30		V
Collector - Base Voltage	$V_{CBO}$	-80	-50	-30		V
Emitter - Base Voltage	$V_{EBO}$	-5				V
Collector Current - Continuous	$I_C$	-100				mA
Peak Collector Current	$I_{CM}$	-200				mA
Max Power Dissipation (Note1)	$P_{TOT}$	330				mW
Typical Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	375				$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-50 to 150				$^{\circ}\text{C}$

#### NOTES :

1. Transistor mounted on FR-4 board  $8\text{ cm}^2$ .



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## ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage BC856A-AU,B-AU BC857A-AU,B-AU,C-AU BC858A-AU,B-AU,C-AU,BC859B-AU,C-AU	$V_{(BR)CEO}$	$I_{C}=-10mA, I_{B}=0$	-65 -45 -30	-	-	V
Collector - Base Breakdown Voltage BC856A-AU,B-AU BC857A-AU,B-AU,C-AU BC858A-AU,B-AU,C-AU,BC859B-AU,C-AU	$V_{(BR)CBO}$	$I_{C}=-10\mu A, I_{E}=0$	-80 -50 -30	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_{E}=-1\mu A, I_{C}=0$	-5	-	-	V
Emitter-Base Cutoff Current	$I_{EBO}$	$V_{EB}=-5V$	-	-	-100	nA
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=-30V, I_{E}=0$ $V_{CB}=-30V, I_{E}=0, T_{J}=150^{\circ}C$	-	-	-15 -4	nA $\mu A$
DC Current Gain BC856A-AU,BC857A-AU,BC858A-AU BC856B-AU,BC857B-AU,BC858B-AU,BC859B-AU BC857C-AU,BC858C-AU,BC859C-AU	$h_{FE}$	$I_{C}=-10\mu A, V_{CE}=-5V$	-	90 150 270	-	-
DC Current Gain BC856A-AU,BC857A-AU,BC858A-AU BC856B-AU,BC857B-AU,BC858B-AU,BC859B-AU BC857C-AU,BC858C-AU,BC859C-AU	$h_{FE}$	$I_{C}=-2mA, V_{CE}=-5V$	110 220 420	180 290 520	220 475 800	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_{C}=-10mA, I_{B}=-0.5mA$ $I_{C}=-100mA, I_{B}=-5mA$	-	-	-0.3 -0.65	V
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_{C}=-10mA, I_{B}=-0.5mA$ $I_{C}=-100mA, I_{B}=-5mA$	-	-0.7 -0.9	-	V
Base - Emitter On Voltage	$V_{BE(ON)}$	$I_{C}=-2mA, V_{CE}=-5V$ $I_{C}=-10mA, V_{CE}=-5V$	-0.6 -	-	-0.75 -0.82	V
Collector - Base Capacitance	$C_{CB}$	$V_{CB}=-10V, I_{E}=0, f=1MHz$	-	-	4.5	pF
Current-Gain-Bandwidth Product	$F_T$	$I_{C}=-10mA, V_{CE}=-5V, f=100MHz$	-	200	-	MHz



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## ELECTRICAL CHARACTERISTICS CURVES

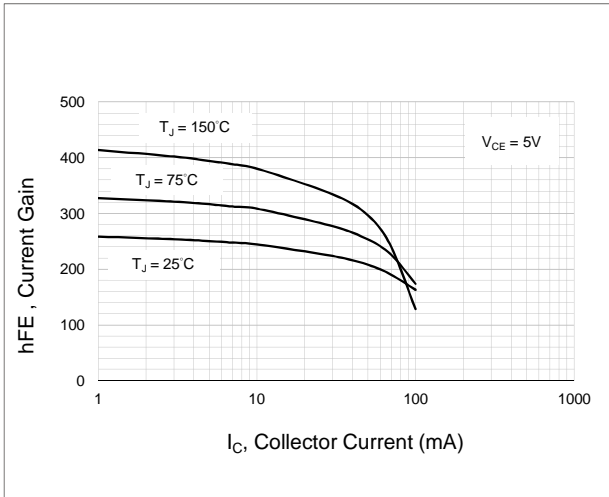


Fig.1- TYPICAL  $h_{FE}$  vs. Collector Current

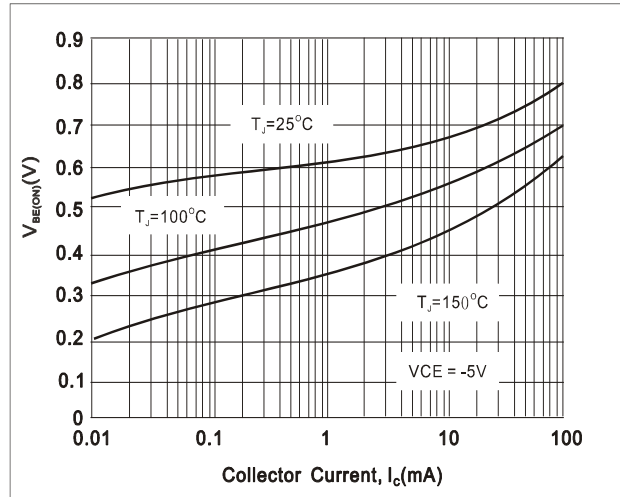


Fig.2- TYPICAL  $V_{BE(ON)}$  vs. Collector Current

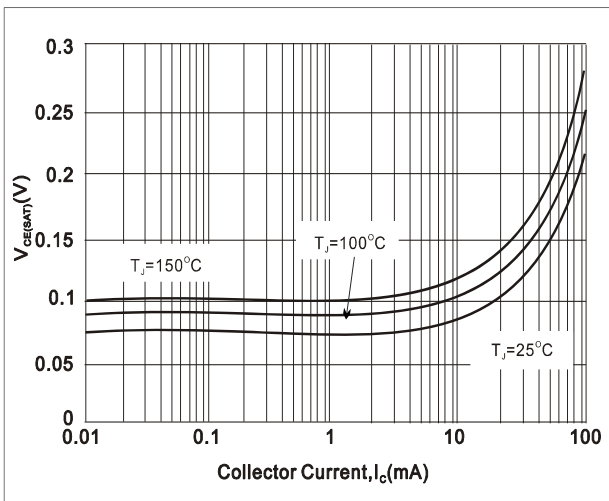


Fig.3- TYPICAL  $V_{CE(SAT)}$  vs. Collector Current

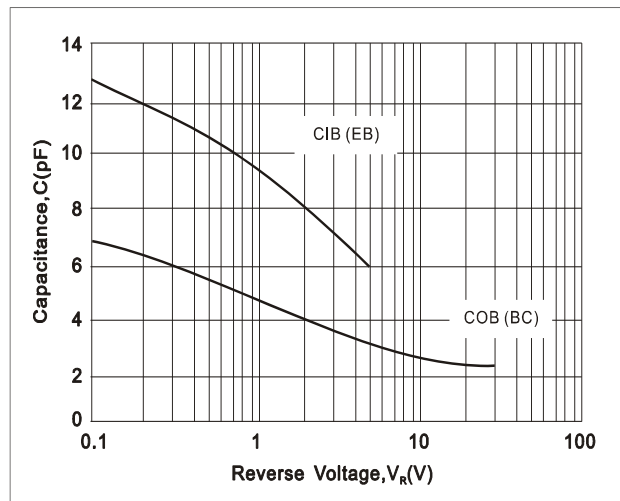


Fig.4- TYPICAL CAPACITANCES vs. REVERSE VOLTAGE



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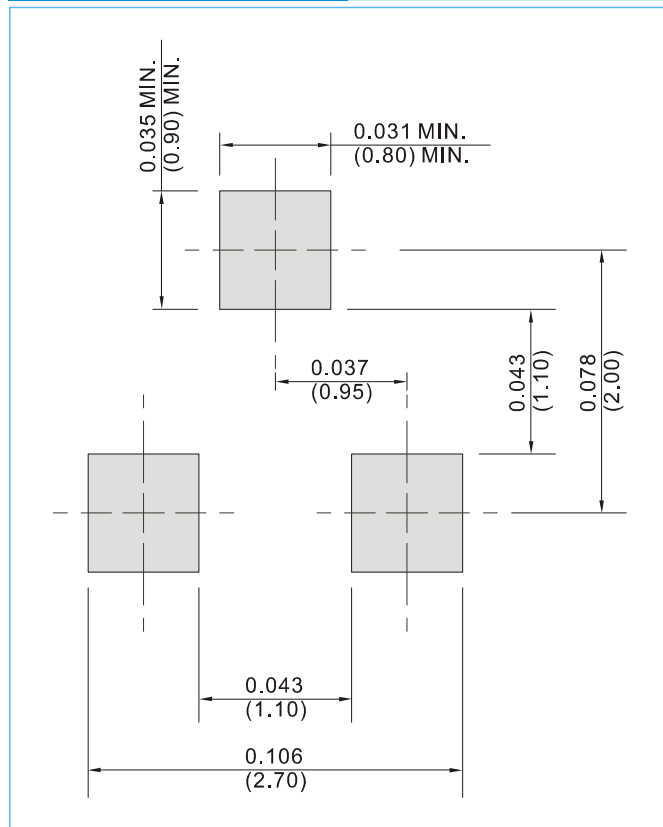
## PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
BC856A-AU_R1_000A1	SOT-23	3K pcs / 7" reel	56A	Halogen free
BC856A-AU_R2_000A1	SOT-23	12K pcs / 13" reel	56A	Halogen free

## MOUNTING PAD LAYOUT

**SOT-23**

Unit : inch(mm)





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