



## BC856AW ~ BC859CW

### PNP GENERAL PURPOSE TRANSISTORS

**VOLTAGE** 30/45/65 Volts **POWER** 250 mWatts

**SOT-323**

Unit : inch(mm)

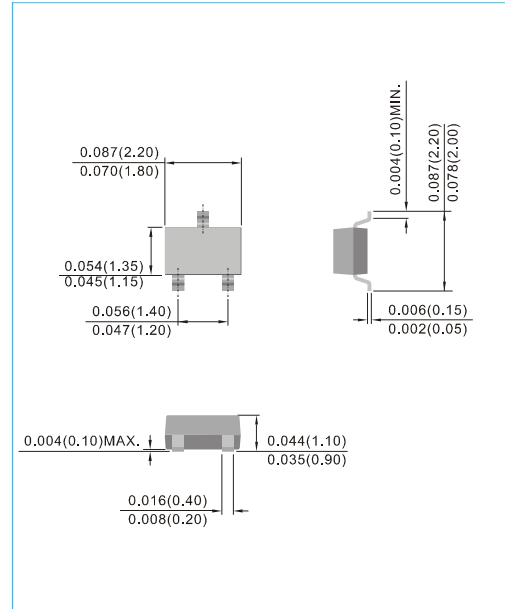
#### FEATURES

- General purpose amplifier applications
- PNP epitaxial silicon, planar design
- Collector current  $I_C = 100\text{mA}$
- Complimentary (NPN) Devices : BC846AW/BC847AW/BC848AW/BC849BW Series
- Lead free in comply with EU RoHS 2011/65/EU directives
- Green molding compound as per IEC61249 Std. . (Halogen Free)

#### MECHANICAL DATA

- Case: SOT-323, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0002 ounce, 0.005 gram

Device Marking:			
BC856AW=56A	BC857AW=57A	BC858AW=58A	
BC856BW=56B	BC857BW=57B	BC858BW=58B	BC859BW=59B
	BC857CW=57C	BC858CW=58C	BC859CW=59C



### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Units
Collector - Emitter Voltage	$V_{CEO}$	-65 -45 -30 -30	V
Collector - Base Voltage	$V_{CBO}$	-80 -50 -30 -30	V
Emitter - Base Voltage	$V_{EBO}$	6 6 -5 -5	V
Collector Current - Continuous	$I_C$	-100	mA
Max. Power Dissipation (Note 1)	$P_{TOT}$	250	mW
Storage Temperature Range	$T_{STG}$	-55 to 150	°C
Junction Temperature Range	$T_J$	-55 to 150	°C

Note : 1. Transistor mounted on FR-5 board 1 x 0.75 x 0.062 in.

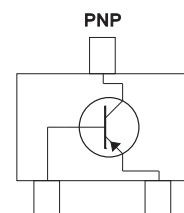


Fig.35



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### THERMAL CHARACTERISTICS

PARAMETER	Symbol	Value	Units
Thermal Resistance (Note 2) (Note 3)	$R_{\theta JA}$ $R_{\theta JC}$	500 200	$^{\circ}\text{C/W}$

Note : 2.Mounted on an FR4 PCB, single-sided copper, mini pad.

3.Mounted on an FR4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area

### ELECTRICAL CHARACTERISTICS ( $T_J=25^{\circ}\text{C}$ , unless otherwise noted)

PARAMETER	Symbol	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage ( $I_C=-10\text{mA}$ , $I_B=0$ )	$V_{(BR)CEO}$	-65 -45 -30	-	-	V
Collector - Base Breakdown Voltage ( $I_C=-10\mu\text{A}$ , $I_E=0$ )	$V_{(BR)CBO}$	-80 -50 -30	-	-	V
Emitter-Base Breakdown Voltage ( $I_E=-1\mu\text{A}$ , $I_C=0$ )	$V_{(BR)EBO}$	-5.0	-	-	V
Emitter-Base Cutoff Current ( $V_{EB}=-5\text{V}$ )	$I_{EBO}$	-	-	-100	nA
Collector-Base Cutoff Current ( $V_{CB}=-30\text{V}$ , $I_E=0$ )	$I_{CBO}$	-	-	-15 -4.0	nA $\mu\text{A}$
DC Current Gain ( $I_C=-10\mu\text{A}$ , $V_{CE}=-5\text{V}$ )	$h_{FE}$	-	90 150 270	-	-
DC Current Gain ( $I_C=-2.0\text{mA}$ , $V_{CE}=-5\text{V}$ )	$h_{FE}$	110 200 420	180 290 520	220 450 800	-
Collector - Emitter Saturation Voltage ( $I_C=-10\text{mA}$ , $I_B=-0.5\text{mA}$ ) ( $I_C=-100\text{mA}$ , $I_B=-5.0\text{mA}$ )	$V_{CE(SAT)}$	- -	- -	-0.3 -0.65	V
Base - Emitter Saturation Voltage ( $I_C=-10\text{mA}$ , $I_B=-0.5\text{mA}$ ) ( $I_C=-100\text{mA}$ , $I_B=-5.0\text{mA}$ )	$V_{BE(SAT)}$	- -	-0.7 -0.9	- -	V
Base - Emitter Voltage ( $I_C=-2\text{mA}$ , $V_{CE}=-5.0\text{V}$ ) ( $I_C=-10\text{mA}$ , $V_{CE}=-5.0\text{V}$ )	$V_{BE(ON)}$	-0.60 -	- -	-0.75 -0.82	V
Collector - Base Capacitance ( $V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ )	$C_{CB}$	-	-	4.5	pF
Current-Gain-Bandwidth Product ( $I_C=-10\text{mA}$ , $V_{CE}=-5.0\text{V}$ , $f=100\text{MHz}$ )	F.	-	200	-	$\text{MHz}$



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### ELECTRICAL CHARACTERISTICS CURVES

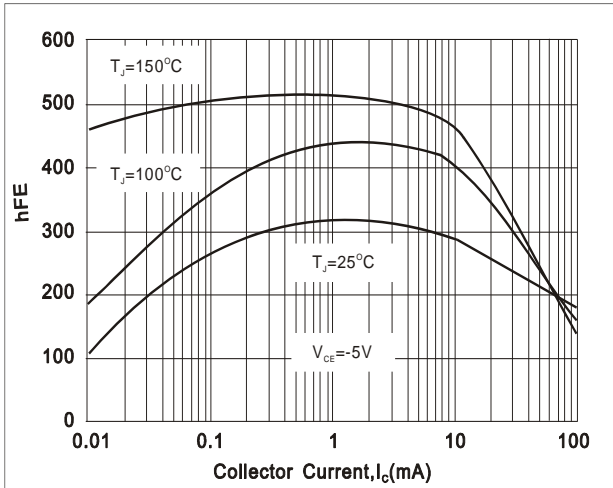


Fig.1- TYPICAL  $h_{FE}$  vs. Collector Current

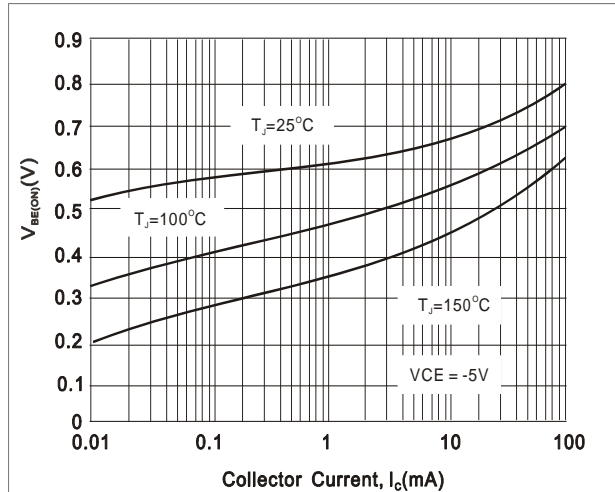


Fig.2- TYPICAL  $V_{BE(ON)}$  vs. Collector Current

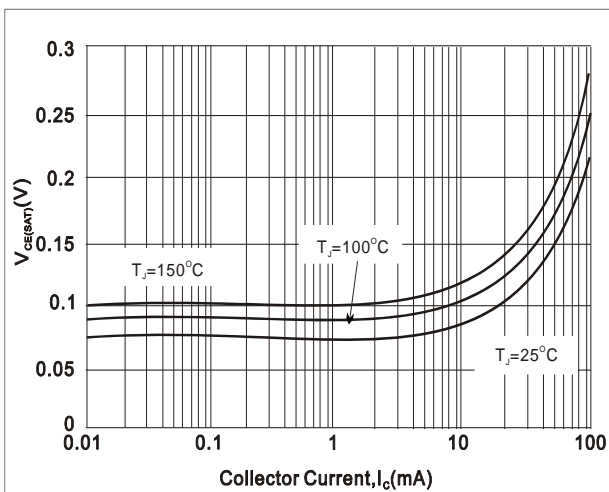


Fig.3- TYPICAL  $V_{CE(SAT)}$  vs. Collector Current

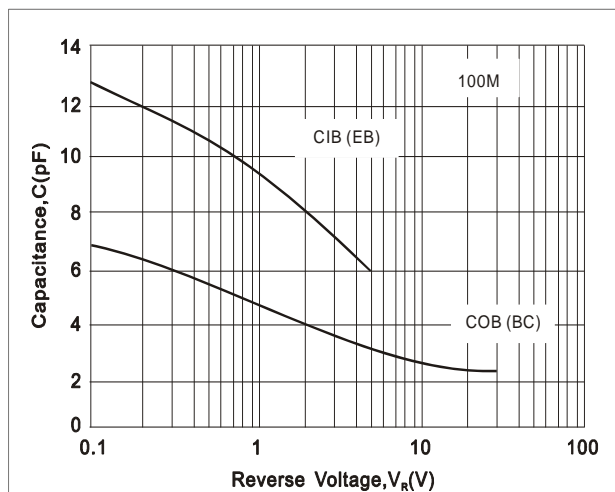
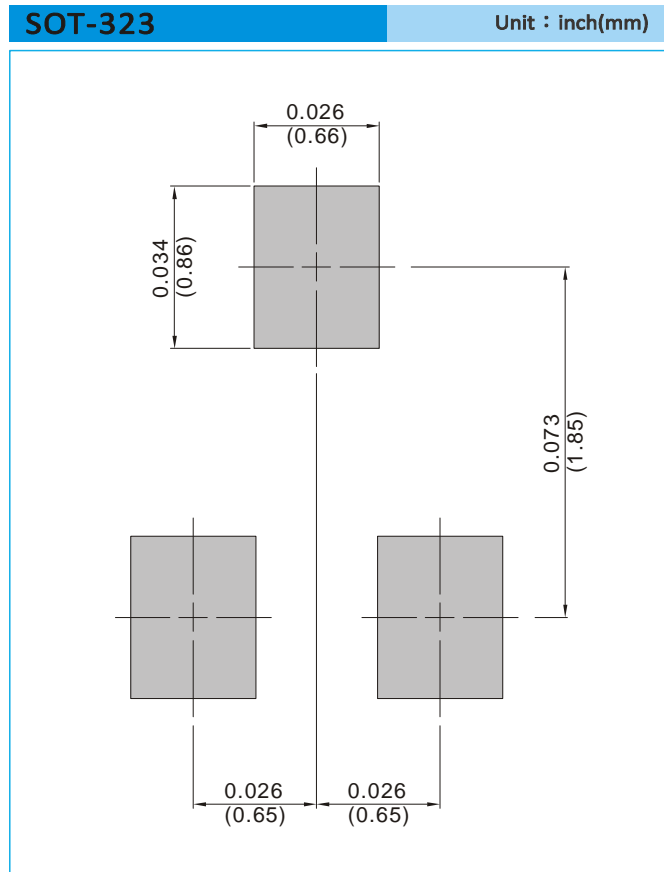


Fig.4- TYPICAL CAPACITANCES vs. REVERSE VOLTAGE



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### MOUNTING PAD LAYOUT



### ORDER INFORMATION

- Packing information  
T/R - 12K per 13" plastic Reel  
T/R - 3K per 7" plastic Reel



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### Part No\_packing code\_Version

BC856AW\_R1\_00001

BC856AW\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



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