



# DATA SHEET

## BC856 SERIES

### PNP GENERAL PURPOSE TRANSISTORS

**VOLTAGE** 65/45/30 Volts **POWER** 225 mW

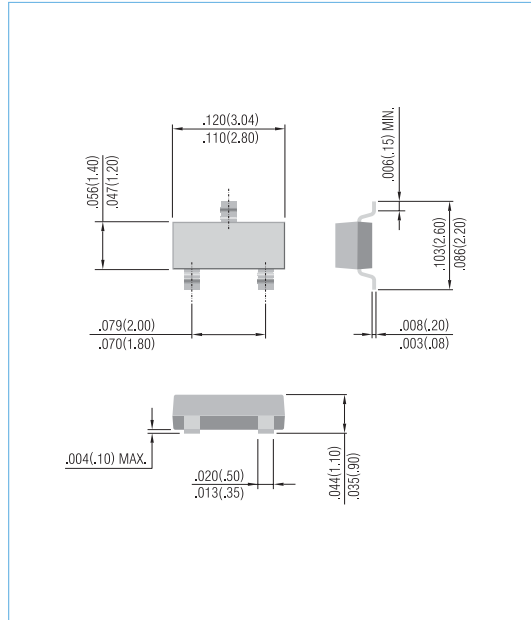
#### FEATURES

General Purpose Amplifier Applications  
 NPN Epitaxial Silicon, Planar Design  
 Collector Current  $I_C = -100\text{mA}$   
 Complimentary (PNP) Devices : BC846/BC847/BC848/BC849 Series  
 In compliance with EU RoHS 2002/95/EC directives

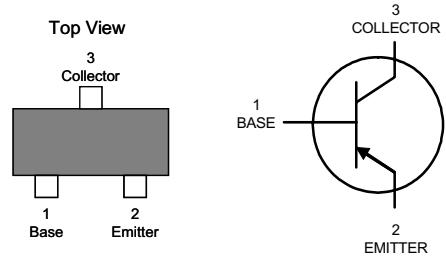
#### MECHANICAL DATA

Case: SOT-23  
 Terminals : Solderable per MIL-STD-750, Method 2026  
 Approx Weight: 0.008 grams  
 Device Marking :

SOT-23 Unit: inch ( mm )



BC856A=56A	BC857A=57A	BC858A=58A	
BC856B=56B	BC857B=57B	BC858B=58B	BC859B=59B
	BC857C=57C	BC858C=58C	BC859C=59C



#### ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	BC856	BC857	BC858	BC859	UNITS
Collector-Emitter Voltage	$V_{CE0}$	-65	-45	-30		V
Collector-Base Voltage	$V_{CB0}$	-80	-50	-30		V
Emitter-Base Voltage	$V_{EB0}$		-5			V
Collector Current-Continuous	$I_C$		-100			mA
Max Power Dissipation (Note 1)	$P_{TOT}$		225			mW
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$		-50 TO +150			°C



# BC856 SERIES

## THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	Value	UNIT
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	556	$^{\circ}\text{C}/\text{W}$

Note 1: Transistor mounted on FR-5 board 1.0 x 0.75 x 0.062 in. Minimum pad layout.

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector - Emitter Breakdown Voltage ( $I_C=10\text{mA}$ , $I_B=0$ )	BC856A,B	-65	-	-	V
	BC857A,B,C	$V_{(BR)CEO}$ -45	-	-	
	BC858A,B,C, BC859B,C	-30	-	-	
Collector - Base Breakdown Voltage ( $I_C=10\mu\text{A}$ , $I_E=0$ )	BC856A,B	-80	-	-	V
	BC857A,B,C	$V_{(BR)CBO}$ -50	-	-	
	BC858A,B,C, BC859B,C	-30	-	-	
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	nA
		$T_J=150\text{ }^{\circ}\text{C}$	-	-	-4.0
DC Current Gain ( $I_C=10\mu\text{A}$ , $V_{CE}=5\text{V}$ )	BC856A, BC857A, BC858A	-	90	-	-
	BC856B, BC857B, BC858B, BC859B	-	150	-	
	BC857C, BC858C, BC859C	-	270	-	
	$h_{FE}$				
( $I_C=2.0\text{mA}$ , $V_{CE}=5\text{V}$ )	BC856A, BC857A, BC858A	110	180	220	
	BC856B, BC857B, BC858B, BC859B	200	290	450	
	BC857C, BC858C, BC859C	420	520	800	
	$h_{FE}$				
Collector – Emitter Saturation Voltage ( $I_C=10\text{mA}$ , $I_B=0.5\text{mA}$ )	$V_{CE(SAT)}$	-	-	-0.3	V
		( $I_C=100\text{mA}$ , $I_B=5.0\text{mA}$ )	-	-	
Base – Emitter Saturation Voltage ( $I_C=10\text{mA}$ , $I_B=0.5\text{mA}$ )	$V_{BE(SAT)}$	-	-0.7	-	V
		( $I_C=100\text{mA}$ , $I_B=5.0\text{mA}$ )	-	-0.9	
Base – Emitter On Voltage ( $I_C=2.0\text{mA}$ , $V_{CE}=5.0\text{V}$ )	$V_{BE(ON)}$	-0.60	-	-0.75	V
		( $I_C=10\text{mA}$ , $V_{CE}=5.0\text{V}$ )	-	-	
Collector - Base Capacitance ( $V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ )	$C_{CB}$	-	-	4.5	pF
Current-Gain - Bandwidth Product ( $I_C=10\text{mA}$ , $V_{CE}=5.0\text{V}$ , $f=100\text{MHz}$ )	$F_T$	-	200	-	MHz



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## ELECTRICAL CHARACTERISTICS CURVES

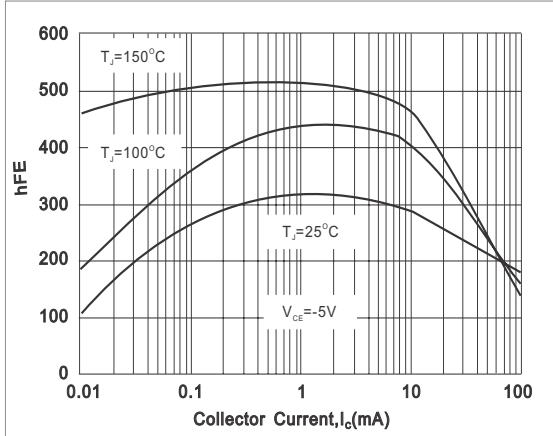


Fig.1- TYPICAL  $h_{FE}$  vs. Collector Current

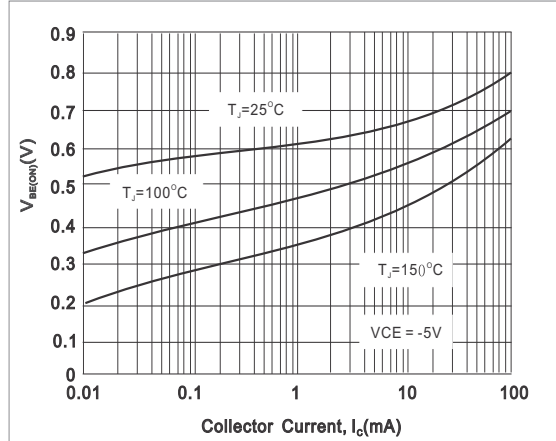


Fig.2- TYPICAL  $V_{BE(ON)}$  vs. Collector Current

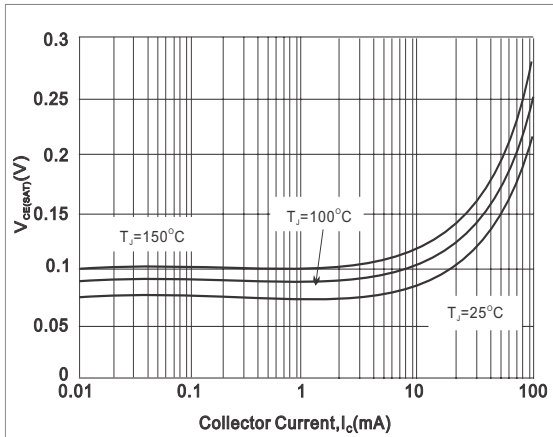


Fig.3- TYPICAL  $V_{CE(SAT)}$  vs. Collector Current

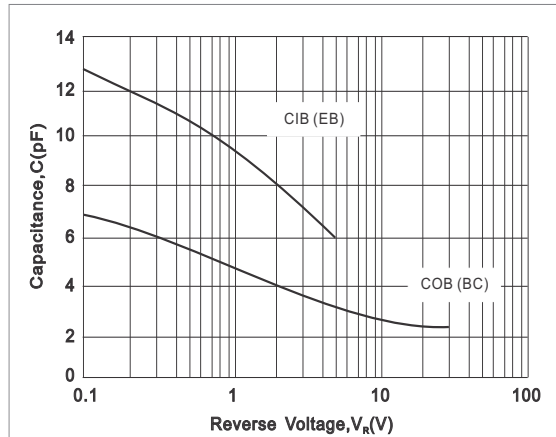


Fig.4- TYPICAL CAPACITANCES vs. REVERSE VOLTAGE

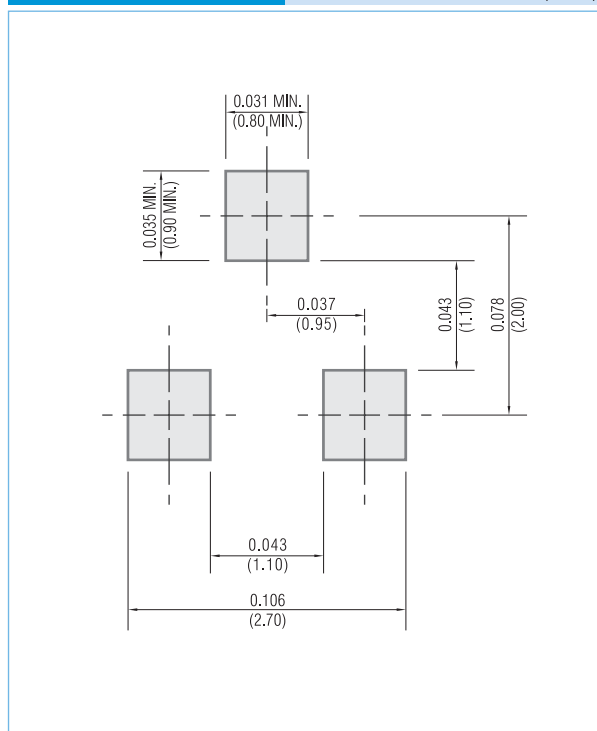


# BC856 SERIES

## MOUNTING PAD LAYOUT

SOT-23

Unit: inch ( mm )



## ORDER INFORMATION

- Packing information

T/R - 12K per 13" plastic Reel

T/R - 3K per 7" plastic Reel

## LEGAL STATEMENT

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