



BC856 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 $I_C = -100\text{mA}$
- Complimentary (PNP) Devices : BC846/BC847/BC848/BC849 Series
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

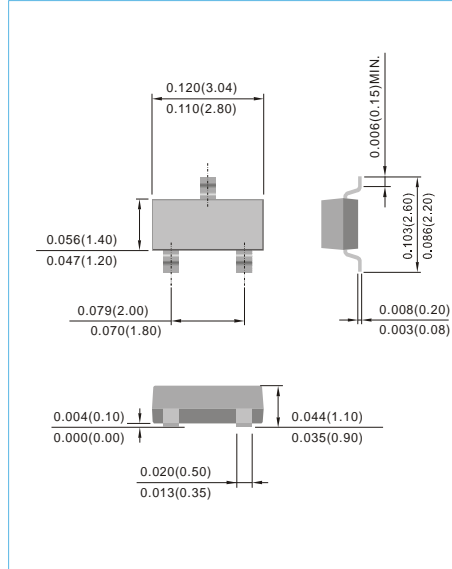
MECHANICAL DATA

Case: SOT-23

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

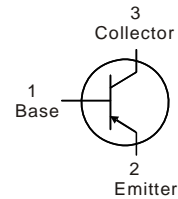
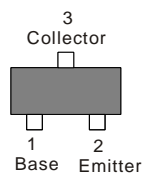
Approx. Weight: 0.0003 ounces, 0.008 grams

Marking:



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

Top View



ABSOLUTE RATINGS

| Parameter | Symbol | BC856 | BC857 | BC858 | BC859 | 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 cm^2 .



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ELECTRICAL CHARACTERISTICS

| Parameter | Symbol | Test Condition | MIN. | TYP. | MAX. | Units |
|--|---------------|---|-------------------|-------------------|-------------------|---------------|
| Collector - Emitter Breakdown Voltage BC856A,B BC857A,B,C BC858A,B,C,BC859B,C | $V_{(BR)CEO}$ | $I_C=-10mA, I_B=0$ | -65 -45 -30 | - | - | V |
| Collector - Base Breakdown Voltage BC856A,B BC857A,B,C BC858A,B,C,BC859B,C | $V_{(BR)CBO}$ | $I_C=-10\mu A, I_E=0$ | -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 μA |
| DC Current Gain BC856A,BC857A,BC858A BC856B,BC857B,BC858B,BC859B BC857C,BC858C,BC859C | h_{FE} | $I_C=-10\mu A, V_{CE}=-5V$ | - | 90 150 270 | - | - |
| DC Current Gain BC856A,BC857A,BC858A BC856B,BC857B,BC858B,BC859B BC857C,BC858C,BC859C | 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

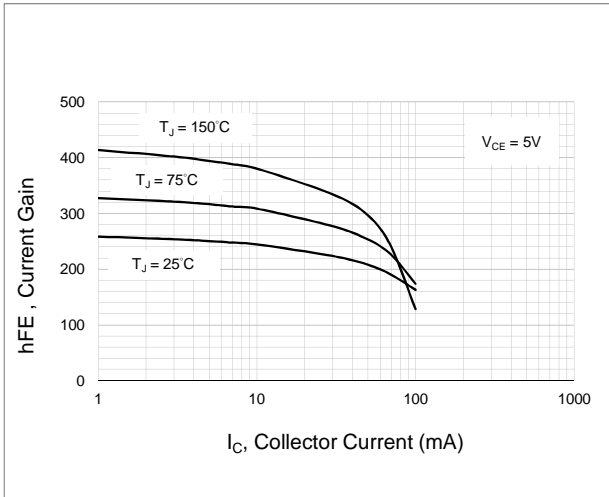


Fig.1- TYPICAL h_{FE} vs. Collector Current

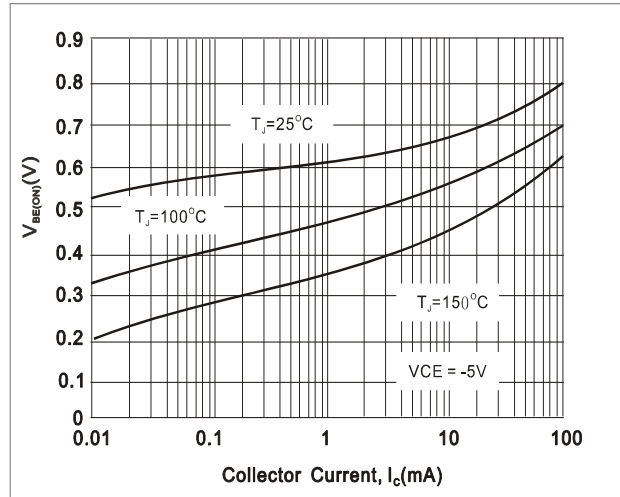


Fig.2- TYPICAL $V_{BE(ON)}$ vs. Collector Current

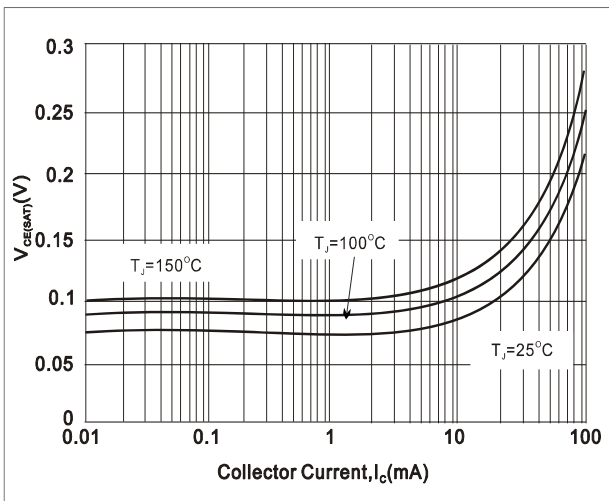


Fig.3- TYPICAL $V_{CE(SAT)}$ vs. Collector Current

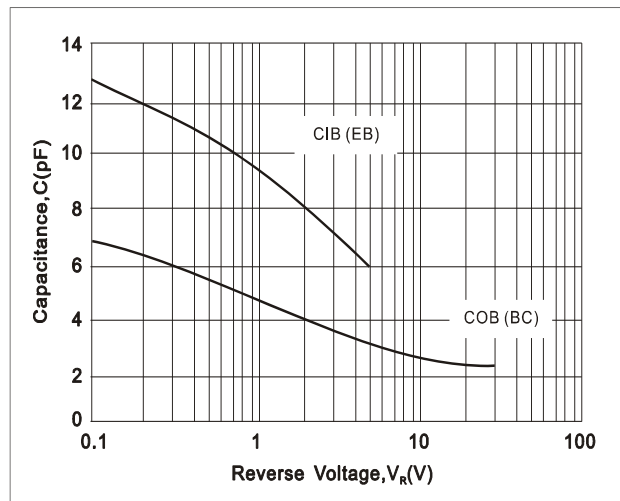


Fig.4- TYPICAL CAPACITANCES vs. REVERSE VOLTAGE



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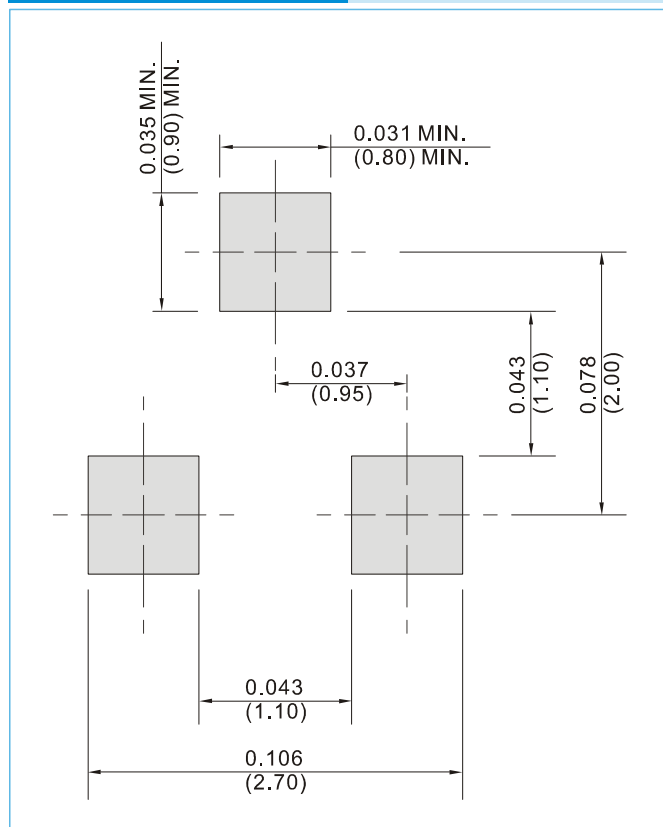
PART NO PACKING CODE VERSION

| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|----------------------|--------------|--------------------|---------|--------------|
| BC856A_R1_00001 | SOT-23 | 3K pcs / 7" reel | 56A | Halogen free |
| BC856A_R2_00001 | SOT-23 | 12K pcs / 13" reel | 56A | Halogen free |

MOUNTING PAD LAYOUT

SOT-23

Unit : inch(mm)





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