



BC846AS

NPN GENERAL PURPOSE TRANSISTORS

| | | | |
|----------------|----------------|--------------|------------------|
| VOLTAGE | 65 Volt | POWER | 150 mWatt |
|----------------|----------------|--------------|------------------|

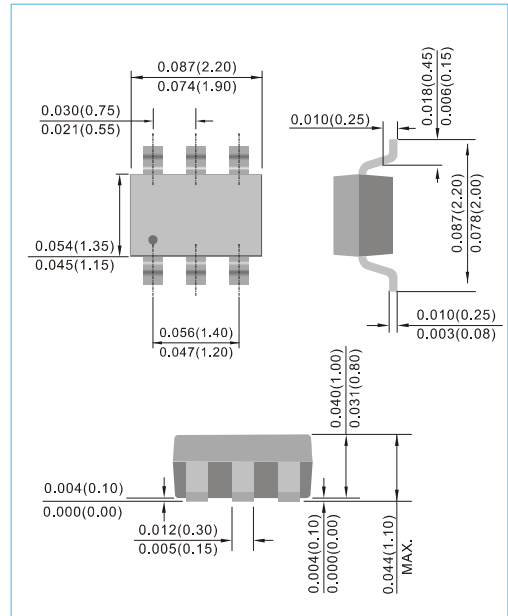
SOT-363 Unit : inch(mm)

FEATURES

- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- Collector current IC = 100mA
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case : SOT-363, Plastic
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0002 ounces, 0.006 grams
- Marking : 46A



ABSOLUTE RATINGS

| PARAMETER | Symbol | Value | Units |
|--------------------------------|------------------|-------|-------|
| Collector - Emitter Voltage | V _{CEO} | 65 | V |
| Collector - Base Voltage | V _{CBO} | 80 | V |
| Emitter - Base Voltage | V _{EBO} | 6.0 | V |
| Collector Current - Continuous | I _C | 100 | mA |

THERMAL CHARACTERISTICS

| PARAMETER | Symbol | Value | Units |
|--|------------------|------------|-------|
| Max Power Dissipation (Note 1) | P _{TOT} | 150 | mW |
| Thermal Resistance , Junction to Ambient | R _{θJA} | 833 | °C/W |
| Junction Temperature | T _J | -55 to 150 | °C |
| Storage Temperature | T _{STG} | -55 to 150 | °C |

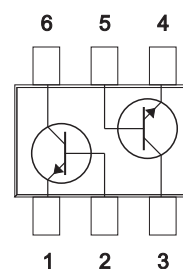
Note 1: Transistor mounted on FR-4 board 70 x 60 x 1mm .



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ELECTRICAL CHARACTERISTICS

| PARAMETER | Symbol | Test Condition | MIN. | TYP. | MAX. | Units |
|--|---------------|---|-----------|------------|--------------|-------|
| Collector - Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=10mA, I_B=0$ | 65 | - | - | V |
| Collector - Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0$ | 80 | - | - | V |
| Emitter - Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=1\mu A, I_C=0$ | 6.0 | - | - | V |
| Collector-Base Cutoff Current | I_{CBO} | $V_{CB}=30V, I_E=0$ | - | - | 15 | nA |
| DC Current Gain | h_{FE} | $I_C=10\mu A, V_{CE}=5V$ | - | 140 | - | - |
| DC Current Gain | h_{FE} | $I_C=2.0mA, V_{CE}=5V$ | 110 | 180 | 220 | - |
| Collector - Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$ | - | - | 0.25 0.6 | V |
| Base - Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$ | - | 0.7 0.9 | - | V |
| Base - Emitter Voltage | $V_{BE(ON)}$ | $I_C=2mA, V_{CE}=5.0V$ $I_C=10mA, V_{CE}=5.0V$ | 0.58 - | 0.66 - | 0.70 0.77 | V |
| Collector - Base Capacitance | C_{CBO} | $V_{CB}=1V, I_E=0, f=1MH$ | - | - | 4.5 | pF |





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ELECTRICAL CHARACTERISTICS CURVE

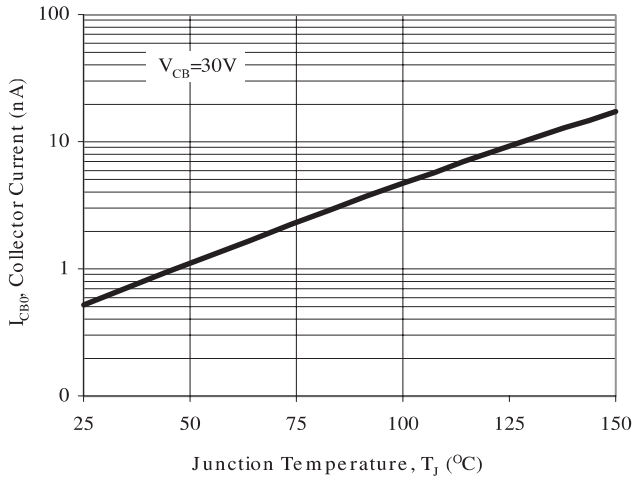


Fig. 1. Typical I_{CBO} vs. Junction Temperature

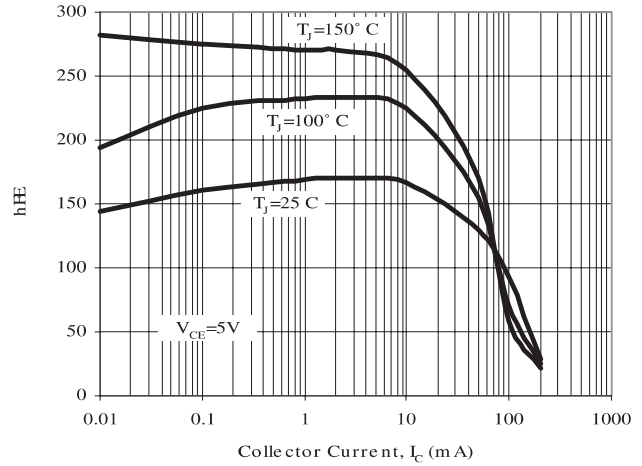


Fig. 2. Typical h_{FE} vs. Collector Current

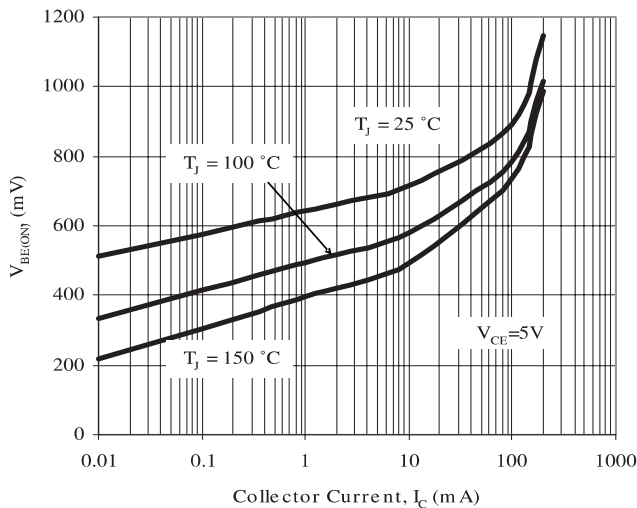


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

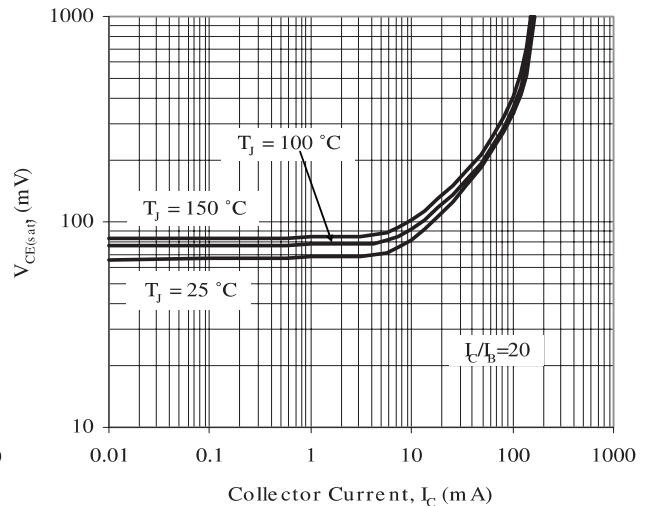


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

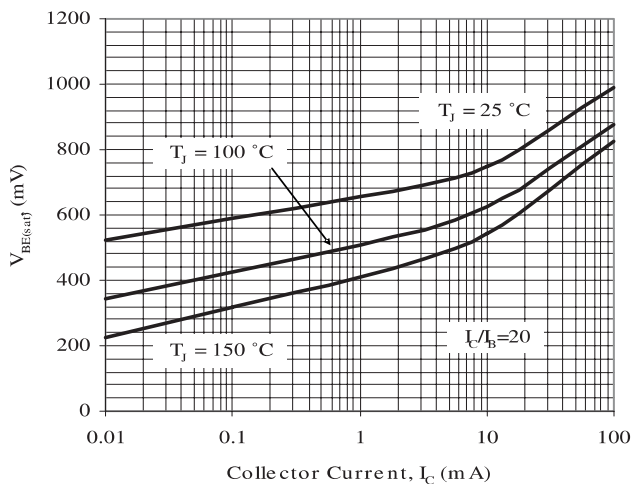


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

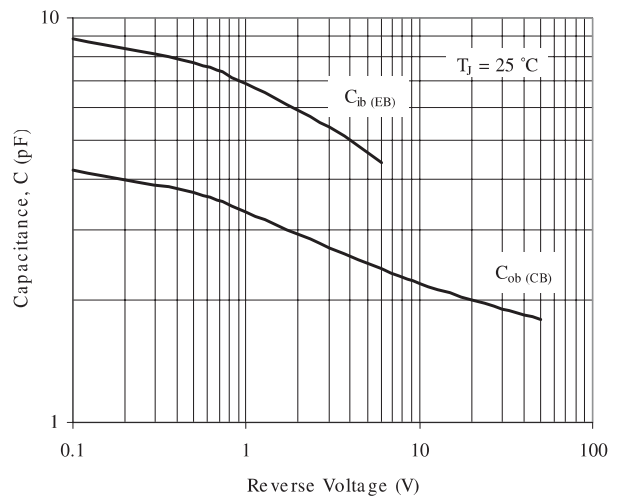
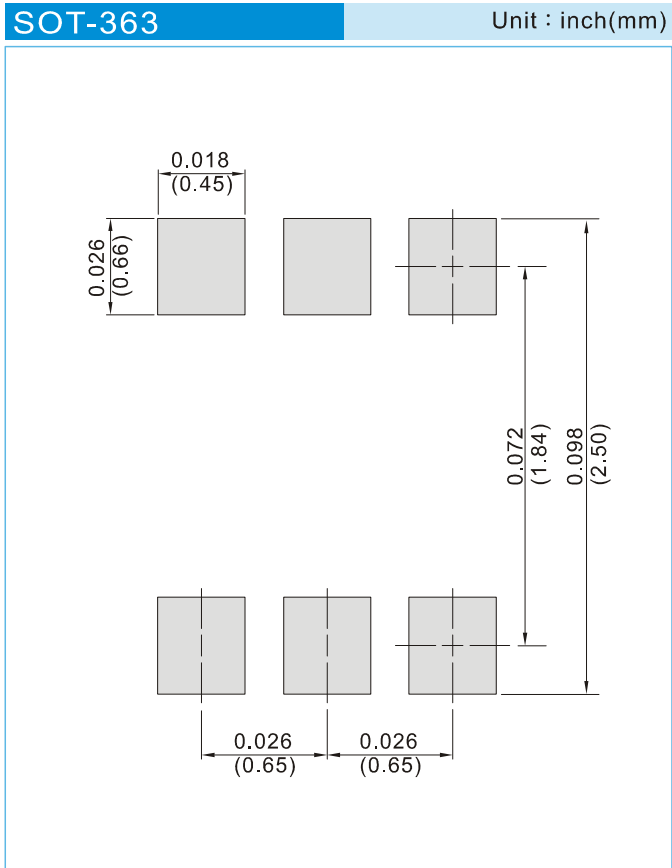


Fig. 6. Typical Capacitances vs. Reverse Voltage



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
T/R - 10K per 13" plastic Reel
T/R - 3K per 7" plastic Reel



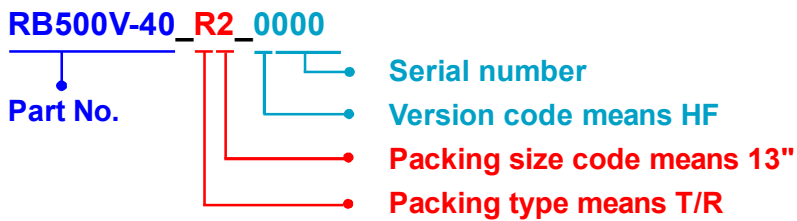
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Part No_packing code_Version

BC846AS_R1_00001

BC846AS_R2_00001

For example :



| Packing Code XX | | | | Version Code XXXXX | | |
|------------------------|----------------------|-------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type | 1 st Code | Packing size code | 2 nd Code | HF or RoHS | 1 st Code | 2 nd ~5 th Code |
| T/B | A | N/A | 0 | HF | 0 | serial number |
| T/R | R | 7" | 1 | RoHS | 1 | serial number |
| B/P | B | 13" | 2 | | | |
| T/P | T | 26mm | X | | | |
| TRR | S | 52mm | Y | | | |
| TRL | L | PBCU | U | | | |
| FORMING | F | PBCD | D | | | |



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