

Features

- Halogen Free. "Green" Device (Note 1)
- AEC-Q101 Qualified
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

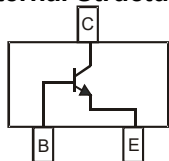
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Maximum Thermal Resistance: 625°C/W Junction to Ambient (Note2)

| Parameter | Symbol | Rating | Unit |
|--|-----------|--------|------|
| Collector-Base Voltage | V_{CBO} | 80 | V |
| BC846AWHE3, BC846BWHE3 | | 50 | |
| BC847AWHE3, BC847BWHE3, BC847CWHE3 BC848AWHE3, BC848BWHE3, BC848CWHE3 | | 30 | |
| Collector-Emitter Voltage | V_{CEO} | 65 | V |
| BC846AWHE3, BC846BWHE3 | | 45 | |
| BC847AWHE3, BC847BWHE3, BC847CWHE3 BC848AWHE3, BC848BWHE3, BC848CWHE3 | | 30 | |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| BC846AWHE3, BC846BWHE3 | | 6 | |
| BC847AWHE3, BC847BWHE3, BC847CWHE3 BC848AWHE3, BC848BWHE3, BC848CWHE3 | | 5 | |
| Collector Current | I_C | 100 | mA |
| Peak Collector Current | I_{CM} | 200 | mA |
| Peak Base Current | I_{BM} | 200 | mA |
| Power Dissipation | P_D | 200 | mW |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Device Mounted on an FR4 Printed Circuit Board.

Internal Structure

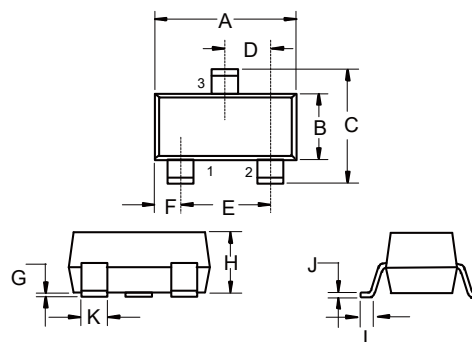


Marking:

BC846AWHE3:1A; BC846BWHE3:1B
BC847AWHE3:1E; BC847BWHE3:1F; BC847CWHE3:1G
BC848AWHE3:1J; BC848BWHE3:1K; BC848CWHE3:1L

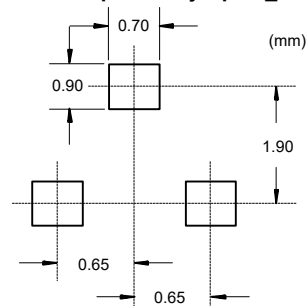
NPN General Purpose Transistors

SOT-323



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.071 | 0.087 | 1.80 | 2.20 | |
| B | 0.045 | 0.053 | 1.15 | 1.35 | |
| C | 0.083 | 0.096 | 2.10 | 2.45 | |
| D | 0.026 | | 0.65 | | TYP. |
| E | 0.047 | 0.055 | 1.20 | 1.40 | |
| F | 0.012 | 0.016 | 0.30 | 0.40 | |
| G | 0.000 | 0.004 | 0.00 | 0.10 | |
| H | 0.035 | 0.044 | 0.90 | 1.10 | |
| J | 0.002 | 0.010 | 0.05 | 0.25 | |
| K | 0.006 | 0.016 | 0.15 | 0.40 | |
| L | 0.010 | 0.018 | 0.26 | 0.46 | |

QseecqrcbAQmjbcPbAN_bAJ_wmsr



Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter | Symbol | Min | Typ | Max | Units | Conditions |
|--|---------------|-------------------|-------------------|-------------------|-------|---|
| Collector-Base Breakdown Voltage BC846AWHE3,BC846BWHE3 BC847AWHE3,BC847BWHE3,BC847CWHE3 BC848AWHE3,BC848BWHE3,BC848CWHE3 | $V_{(BR)CBO}$ | 80 50 30 | | | V | $I_C=10\mu A, I_E=0$ |
| Collector-Emitter Breakdown Voltage BC846AWHE3,BC846BWHE3 BC847AWHE3,BC847BWHE3,BC847CWHE3 BC848AWHE3,BC848BWHE3,BC848CWHE3 | $V_{(BR)CEO}$ | 65 45 30 | | | V | $I_C=10mA, I_B=0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 6 | | | V | $I_E=1\mu A, I_C=0$ |
| Collector-Base Cutoff Current BC846AWHE3,BC846BWHE3 BC847AWHE3,BC847BWHE3,BC847CWHE3 BC848AWHE3,BC848BWHE3,BC848CWHE3 | I_{CBO} | | | 100 | nA | $V_{CB}=70V, I_E=0$ $V_{CB}=50V, I_E=0$ $V_{CB}=30V, I_E=0$ |
| Emitter-Base Cutoff Current | I_{EBO} | | | 100 | nA | $V_{EB}=5V, I_C=0$ |
| DC Current Gain BC846AWHE3,BC847AWHE3,BC848AWHE3 BC846BWHE3,BC847BWHE3,BC848BWHE3 BC847CWHE3,BC848CWHE3 | $h_{FE(1)}$ | 110 200 420 | 180 290 520 | 220 450 800 | | $V_{CE}=5V, I_C=2mA$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | | 500 | mV | $I_C=100mA, I_B=5mA$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | | 1.1 | V | $I_C=100mA, I_B=5mA$ |
| Transition Frequency | f_T | 150 | | | MHz | $V_{CE}=5V, I_C=10mA, f=30MHz$ |
| Collector Capacitance | C_C | | | 4.5 | pF | $V_{CB}=10V, I_E=I_e=0, f=1MHz$ |

Curve Characteristics

Fig. 1 - Static Characteristics

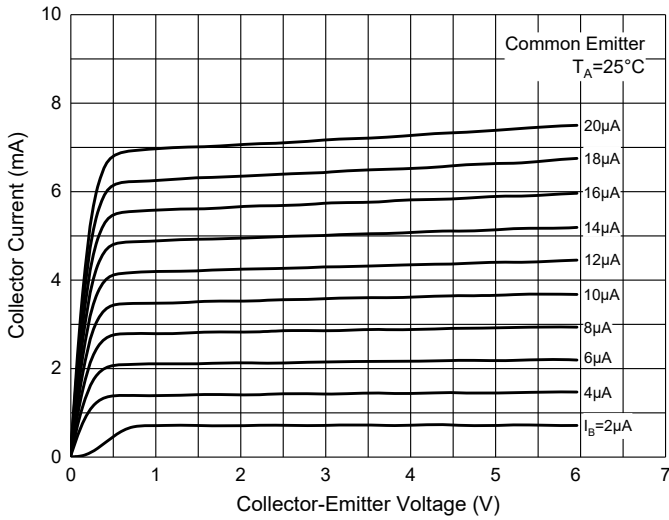


Fig. 2 - DC Current Gain Characteristics

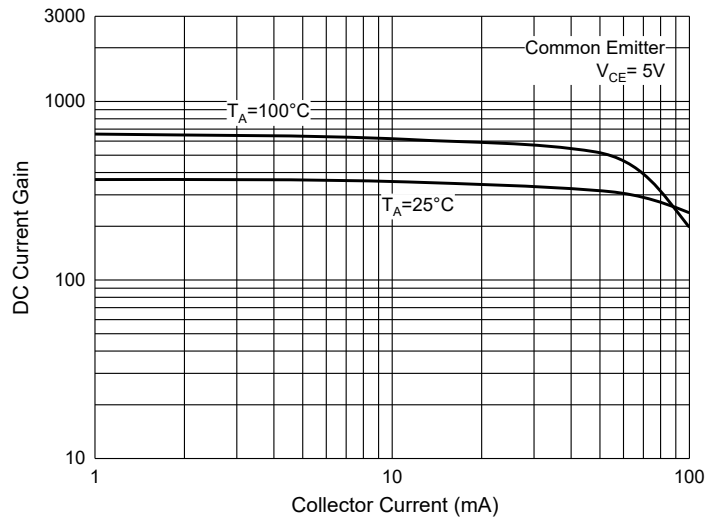


Fig. H - Base-Emitter Saturation Voltage Characteristics

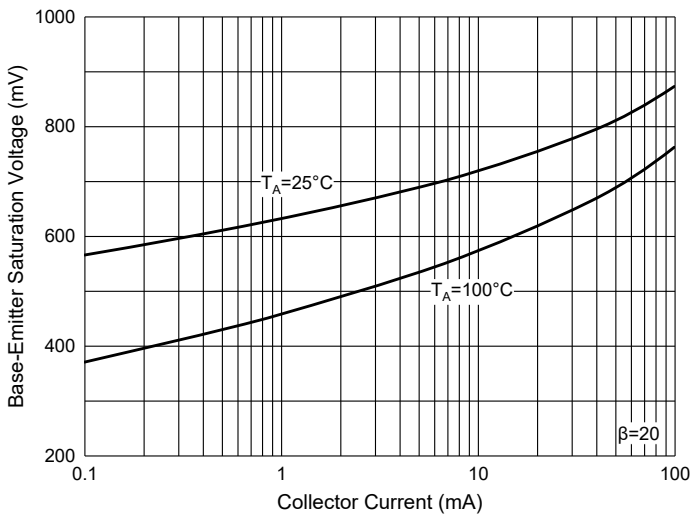


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

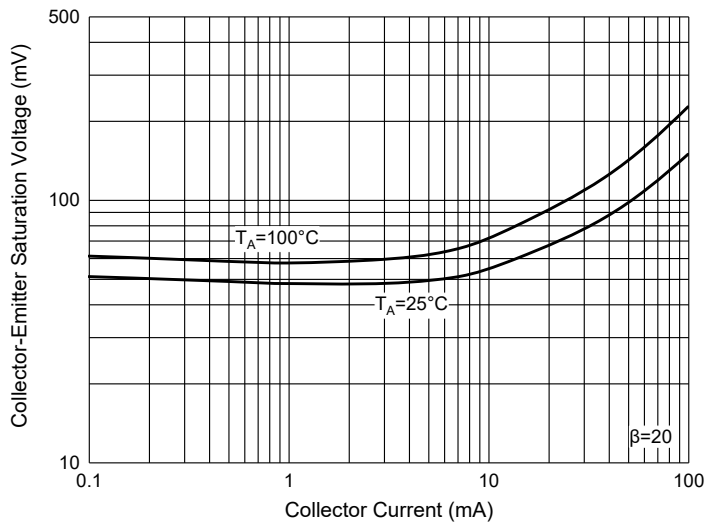


Fig. 5 - Base-Emitter Voltage Characteristics

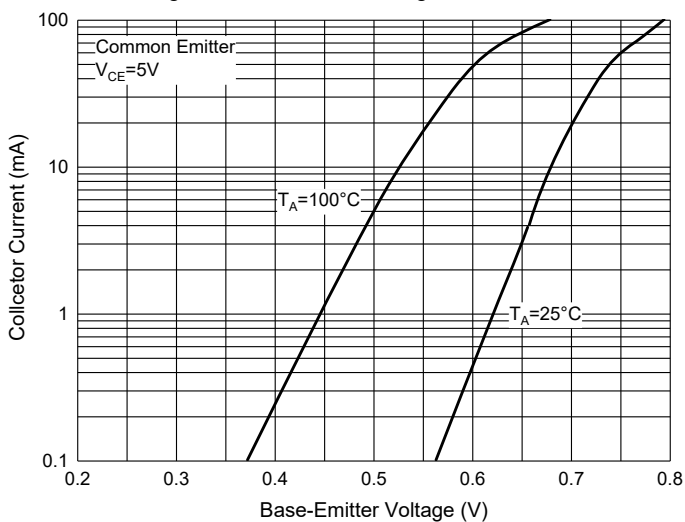
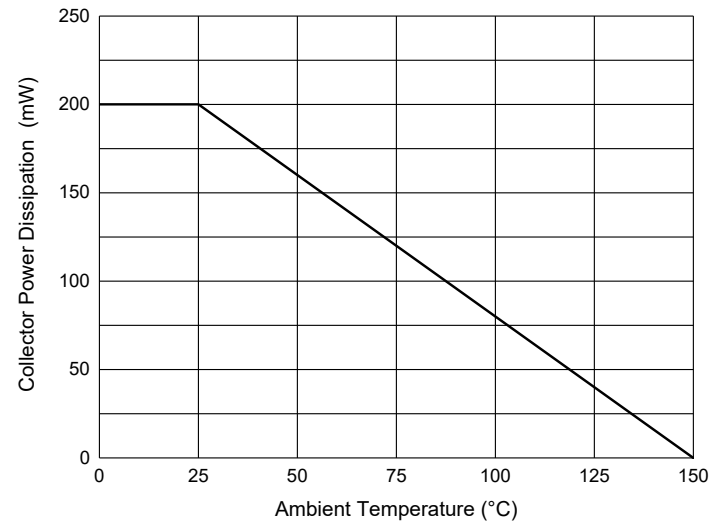


Fig. 6 - Collector Power Derating Curve



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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