

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

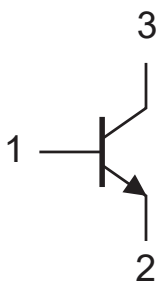
| Parameter | Symbol | Rating | Unit |
|---------------------------|-----------|--------|------|
| Collector-Base Voltage | V_{CBO} | 40 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_C | 1 | A |
| Power Dissipation | P_D | 300 | mW |

Thermal characteristics

| Parameter | Symbol | Rating | Unit |
|---|---------------|----------|------|
| Junction Temperature Range | T_j | -55~+150 | °C |
| Storage Temperature Range | T_{stg} | -55~+150 | °C |
| Thermal Resistance from Junction to Ambient | $R_{th(J-A)}$ | 417 | °C/W |

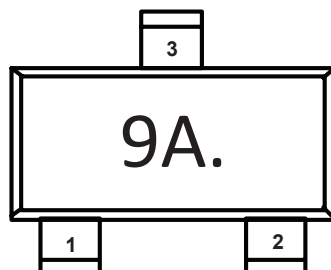
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <100ppm antimony compounds.

Internal Structure



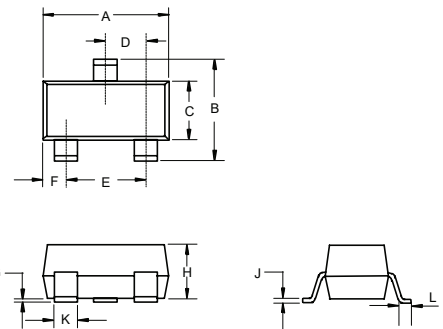
- 1.BASE
- 2.EMITTER
- 3.COLLECTOR

Marking Code



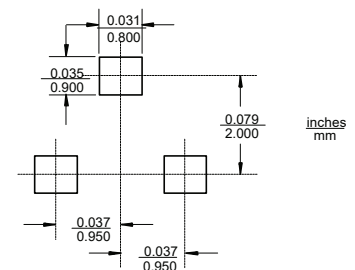
NPN General Purpose Amplifier

SOT-23



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|------|------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.110 | 0.120 | 2.80 | 3.04 | |
| B | 0.083 | 0.104 | 2.10 | 2.64 | |
| C | 0.047 | 0.055 | 1.20 | 1.40 | |
| D | 0.034 | 0.041 | 0.85 | 1.05 | |
| E | 0.067 | 0.083 | 1.70 | 2.10 | |
| F | 0.018 | 0.024 | 0.45 | 0.60 | |
| G | 0.0004 | 0.006 | 0.01 | 0.15 | |
| H | 0.035 | 0.043 | 0.90 | 1.10 | |
| J | 0.003 | 0.007 | 0.08 | 0.18 | |
| K | 0.012 | 0.020 | 0.30 | 0.51 | |
| L | 0.007 | 0.020 | 0.20 | 0.50 | |

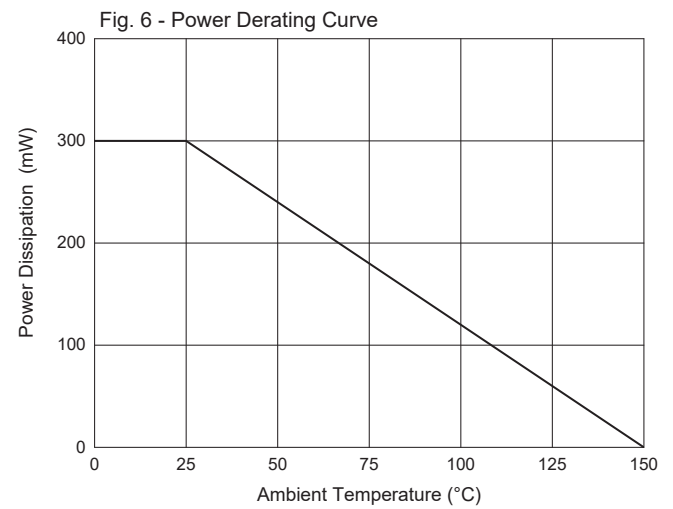
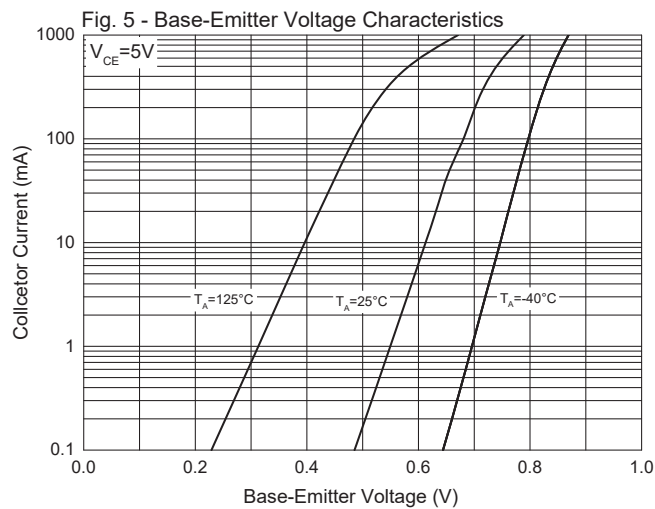
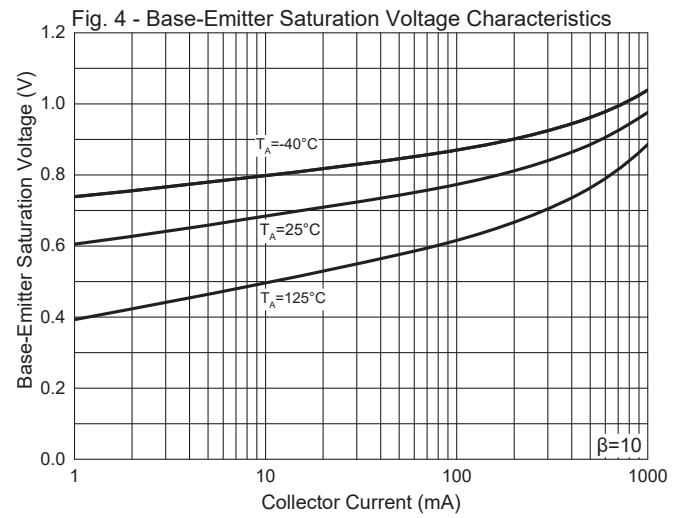
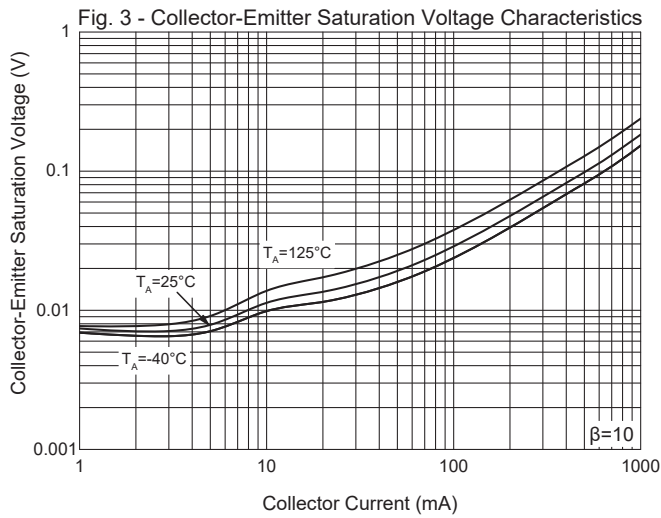
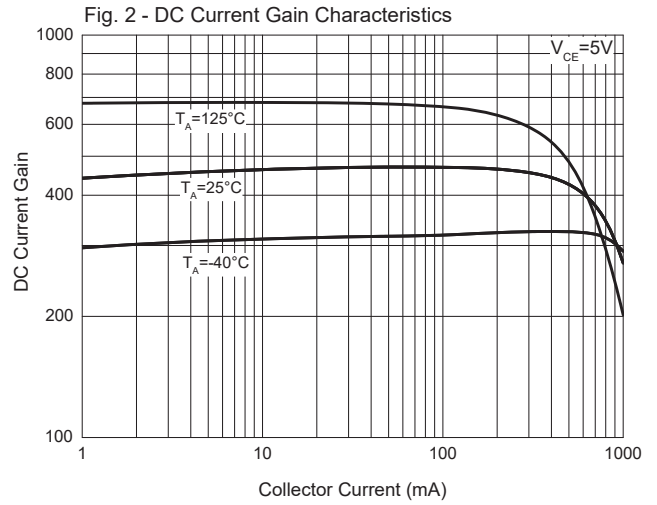
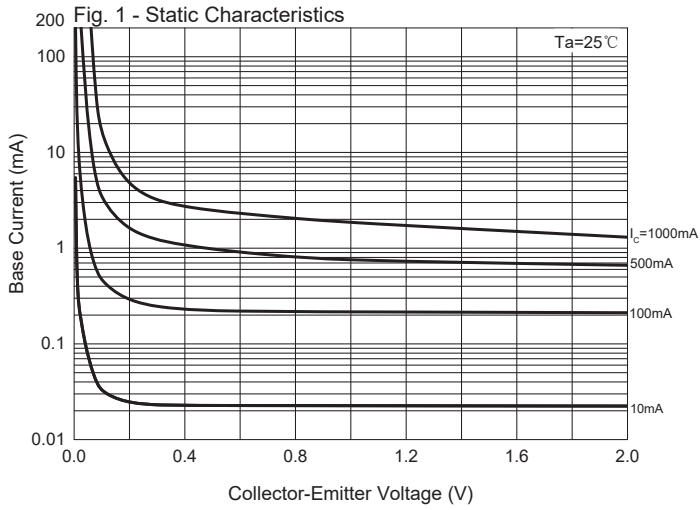
Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

| Parameter | Symbol | Min | Typ | Max | Units | Conditions |
|--------------------------------------|----------------------|-----|-----|-----|-------|--|
| Collector-Base Breakdown Voltage | V _{(BR)CBO} | 40 | | | V | I _C =10μA, I _E =0 |
| Collector-Emitter Breakdown Voltage | V _{(BR)CEO} | 40 | | | V | I _C =1mA, I _B =0 |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | 6 | | | V | I _E =10μA, I _C =0 |
| Collector-Base Cutoff Current | I _{CBO} | | | 0.1 | μA | V _{CB} =40V, I _E =0 |
| Collector-Emitter Cutoff Current | I _{CEO} | | | 0.1 | μA | V _{CE} =30V, I _B =0 |
| Emitter-Base Cutoff Current | I _{EBO} | | | 0.1 | μA | V _{EB} =5V, I _C =0 |
| DC Current Gain | h _{FE(1)} | 300 | | | | V _{CE} =5V, I _C =1mA |
| | h _{FE(2)} | 300 | | 900 | | V _{CE} =5V, I _C =500mA |
| | h _{FE(3)} | 200 | | | | V _{CE} =5V, I _C =1A |
| Collector-Emitter Saturation Voltage | V _{CE(sat)} | | | 0.2 | V | I _C =100mA, I _B =1mA |
| | | | | 0.3 | V | I _C =500mA, I _B =50mA |
| | | | | 0.5 | V | I _C =1A, I _B =100mA |
| Base-Emitter Saturation Voltage | V _{BE(sat)} | | | 1.2 | V | I _C =1A, I _B =100mA |
| Base-Emitter Voltage | V _{BE} | | | 1.1 | V | V _{CE} =5V, I _C =1A |
| Transition Frequency | f _T | 150 | | | MHz | V _{CE} =10V, I _C =50mA, f=100MHz |
| Output Capacitance | C _{ob} | | | 10 | pF | V _{CB} =10V, I _E =0, f=1MHz |

Curve Characteristics



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| FMMT491BHE3-TP | Tape&Reel: 3Kpcs/Reel |

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