

Features

- Low Collector-Emitter Saturation Voltage
- Halogen Free. "Green" Device (Note 1)
- 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} | -5 | V |
| Collector Current | I_C | -2 | A |
| Power Dissipation | P_D | 500 | mW |

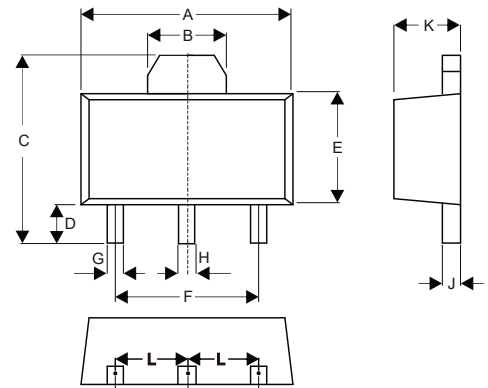
Thermal characteristics

| 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 | $R_{th(J-A)}$ | 250 | °C/W |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

**PNP
Low $V_{CE(sat)}$
Transistor**

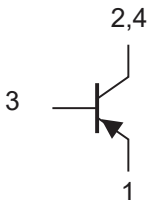
SOT-89



DIMENSIONS

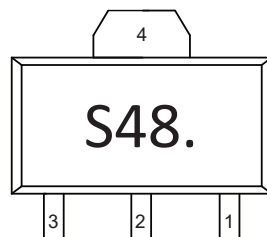
| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.169 | 0.185 | 4.30 | 4.70 | |
| B | 0.061 | | 1.55 | | TYP. |
| C | 0.154 | 0.171 | 3.91 | 4.35 | |
| D | 0.031 | 0.047 | 0.80 | 1.20 | |
| E | 0.089 | 0.104 | 2.25 | 2.65 | |
| F | 0.118 | | 3.00 | | TYP. |
| G | 0.013 | 0.020 | 0.33 | 0.52 | |
| H | 0.015 | 0.021 | 0.38 | 0.53 | |
| J | 0.014 | 0.017 | 0.35 | 0.44 | |
| K | 0.055 | 0.063 | 1.40 | 1.60 | |
| L | 0.059 | | 1.50 | | TYP. |

Internal Structure

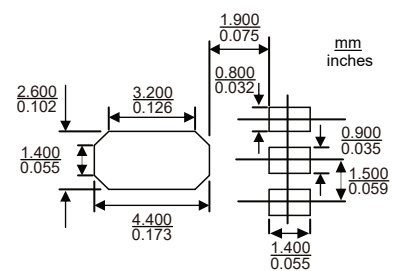


3.BASE
2,4.COLLECTOR
1.EMITTER

Marking Code



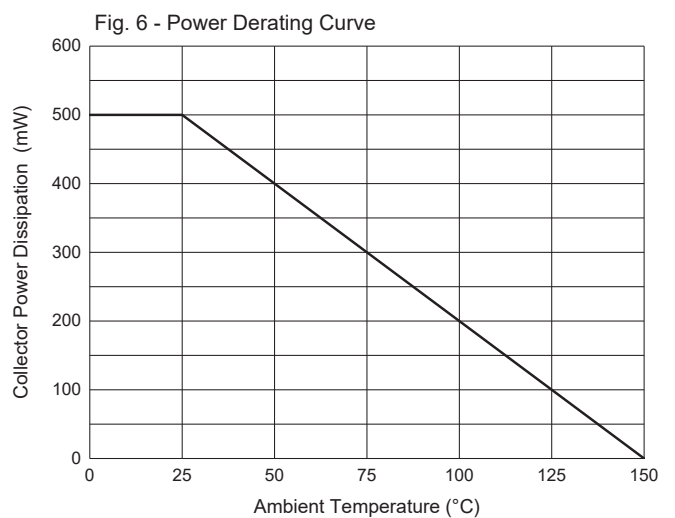
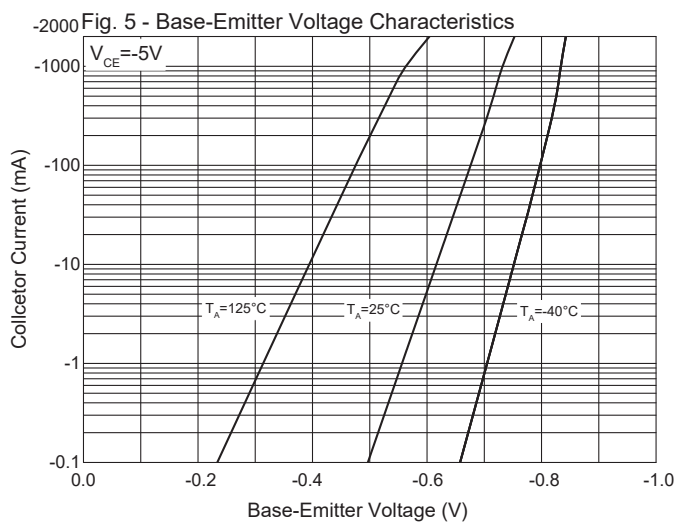
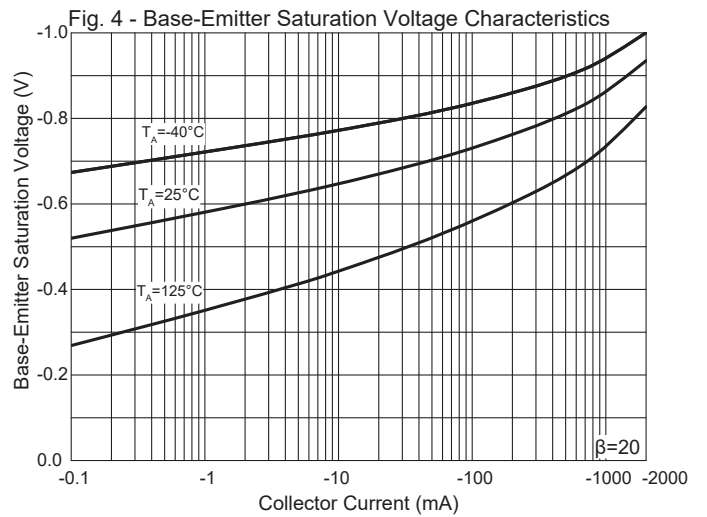
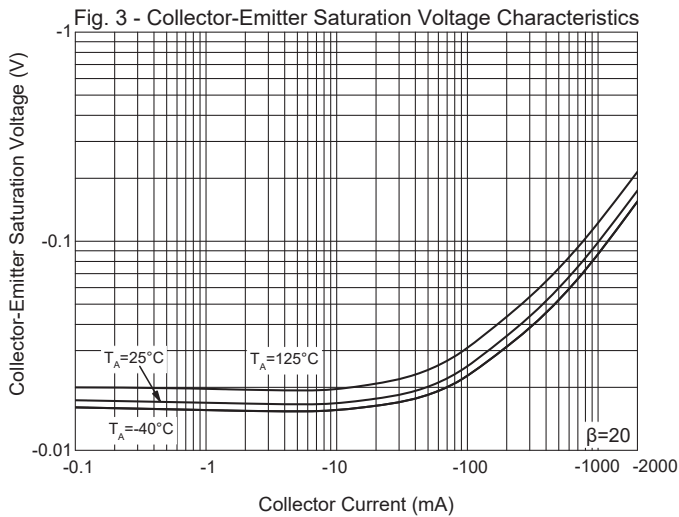
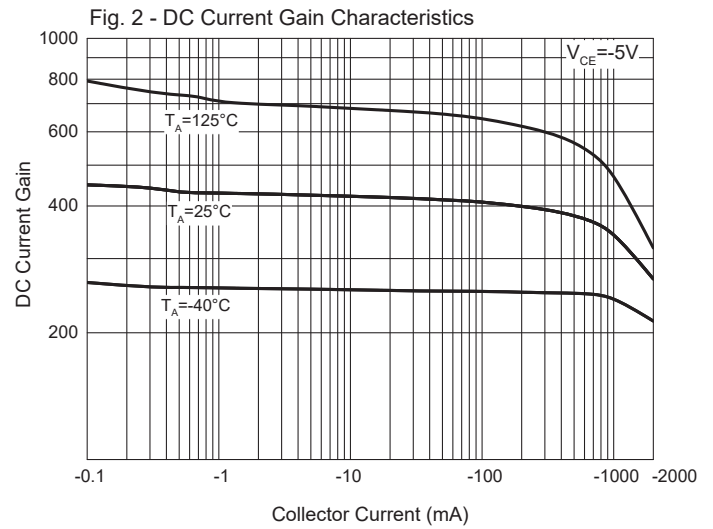
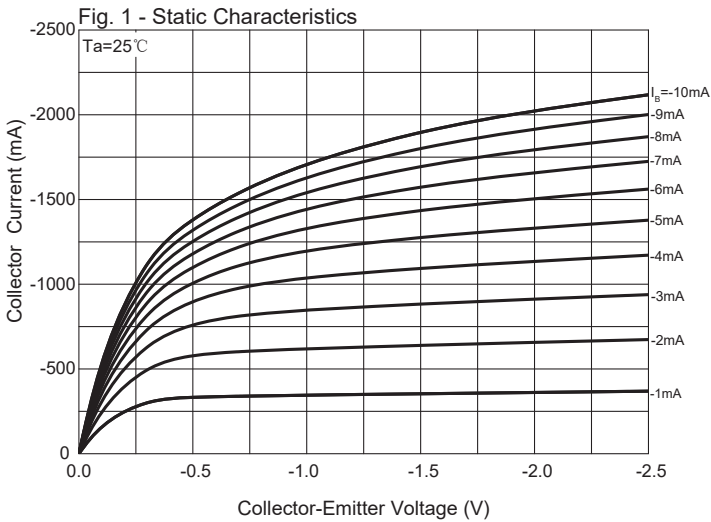
Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter | Symbol | Min | Typ | Max | Units | Conditions |
|--------------------------------------|----------------|-----|-----|------|-------|-------------------------------------|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -40 | | | V | $I_C=-100\mu A, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -40 | | | V | $I_C=-10mA, I_B=0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5 | | | V | $I_E=-100\mu A, I_C=0$ |
| Collector-Base Cutoff Current | I_{CBO} | | | -100 | nA | $V_{CB}=-40V, I_E=0$ |
| Emitter-Base Cutoff Current | I_{EBO} | | | -100 | nA | $V_{EB}=-5V, I_C=0$ |
| Collector-Emitter Cutoff Current | I_{CEO} | | | -100 | nA | $V_{CE}=-30V, V_{BE}=0$ |
| DC Current Gain | $h_{FE(1)}$ | 300 | | | | $V_{CE}=-5V, I_C=-1mA$ |
| | $h_{FE(2)}$ | 215 | | | | $V_{CE}=-5V, I_C=-500mA$ |
| | $h_{FE(3)}$ | 145 | | | | $V_{CE}=-5V, I_C=-1A$ |
| | $h_{FE(4)}$ | 55 | | | | $V_{CE}=-5V, I_C=-2A$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)1}$ | | | -140 | mV | $I_C=-100mA, I_B=-5mA$ |
| | $V_{CE(sat)2}$ | | | -170 | mV | $I_C=-500mA, I_B=-50mA$ |
| | $V_{CE(sat)3}$ | | | -310 | mV | $I_C=-1A, I_B=-100mA$ |
| | $V_{CE(sat)4}$ | | | -630 | mV | $I_C=-2A, I_B=-200mA$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | | -1.2 | V | $I_C=-1A, I_B=-100mA$ |
| Base-Emitter Turn-on Voltage | $V_{BE(on)}$ | | | -1.1 | V | $I_C=-1A, V_{CE}=-5V$ |
| Transition Frequency | f_T | 100 | | | MHz | $V_{CE}=-10V, I_C=-100mA, f=100MHz$ |
| Collector Capacitance | C_{ob} | | | 30 | pF | $V_{CB}=-10V, I_E=0, f=1MHz$ |

Curve Characteristics



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 1Kpcs/Reel |

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