

Features

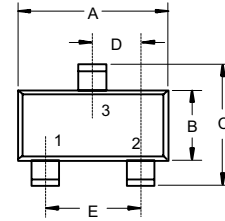
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy
- Halogen free available upon request by adding suffix "-HF"

Mechanical Data

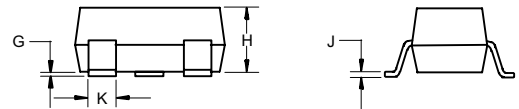
- Case: S O T - 5 2 3



SOT-523



1. Base
2. Emitter
3. Collector



| DIM | DIMENSIONS | | | | NOTE |
|-----|--------------|------|-------------|------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | .059 | .067 | 1.50 | 1.70 | |
| B | .030 | .033 | 0.75 | 0.85 | |
| C | .057 | .069 | 1.45 | 1.75 | |
| D | .020 Nominal | | 0.50Nominal | | |
| E | .035 | .043 | 0.90 | 1.10 | |
| G | .000 | .004 | .000 | .100 | |
| H | .028 | .031 | .70 | 0.80 | |
| J | .004 | .008 | .100 | .200 | |
| K | .010 | .014 | .25 | .35 | |

Maximum Ratings and Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter | Symbol | Value | Unit |
|------------------------------|-----------|---------|------------------|
| Collector-Base Voltage | V_{CBO} | -50 | V |
| Collector-Emitter Voltage | V_{CEO} | -50 | V |
| Emitter-Base voltage | V_{EBO} | -5 | V |
| Collector Current-Continuous | I_C | -100 | mA |
| Collector Dissipation | P_C | 150 | mW |
| Junction Temperature Range | T_J | -55~150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55~150 | $^\circ\text{C}$ |

| Parameter | Symbol | Min | Typ | Max | Unit |
|--|---------------|-----|-----|------|------------------|
| Collector-Base Breakdown Voltage ($I_C = -50\mu\text{A}$, $I_E = 0$) | $V_{(BR)CBO}$ | -50 | --- | --- | V |
| Collector-Emitter Breakdown Voltage ($I_C = -1\text{mA}$, $I_B = 0$) | $V_{(BR)CEO}$ | -50 | --- | --- | V |
| Emitter-Base Breakdown Voltage ($I_E = -50\mu\text{A}$, $I_C = 0$) | $V_{(BR)EBO}$ | -5 | --- | --- | V |
| Collector Cut-off Current ($V_{CB} = -50\text{V}$, $I_E = 0$) | I_{CBO} | --- | --- | -0.5 | μA |
| Emitter Cut-off Current ($V_{EB} = -4\text{V}$, $I_C = 0$) | I_{EBO} | --- | --- | -0.5 | μA |
| DC Current Gain ($V_{CE} = -5\text{V}$, $I_C = -1\text{mA}$) | h_{FE} | 100 | 250 | 600 | --- |
| Collector-Emitter Saturation Voltage ($I_C = -10\text{mA}$, $I_B = -1\text{mA}$) | $V_{CE(sat)}$ | --- | --- | -0.3 | V |
| Input Resistor | R_1 | 7 | 10 | 13 | $\text{K}\Omega$ |
| Transition Frequency ($V_{CE} = -10\text{V}$, $I_C = -5\text{mA}$, $f = 100\text{MHz}$) | f_T | --- | 250 | --- | MHz |

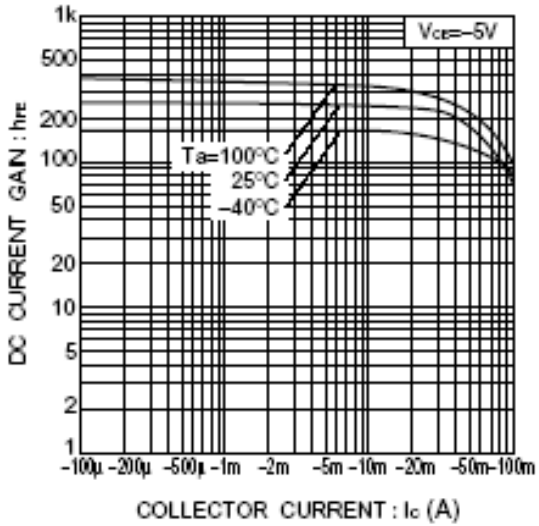


Fig.1 DC current gain vs. collector current

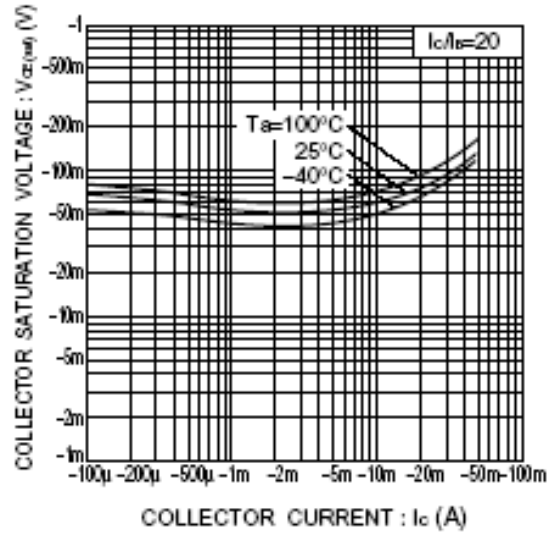


Fig.2 Collector-emitter saturation voltage vs. collector current