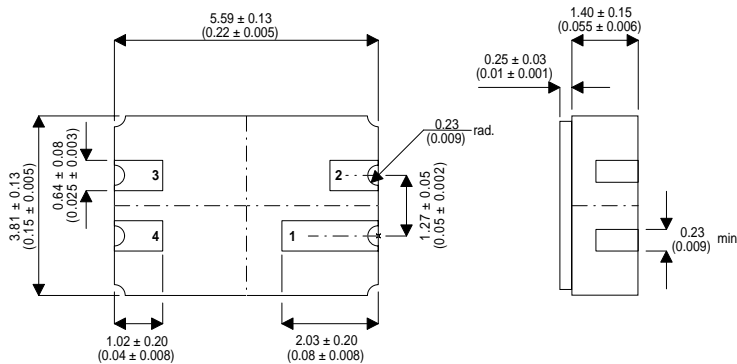


**GENERAL PURPOSE NPN TRANSISTOR
IN A HERMETICALLY SEALED
CERAMIC SURFACE MOUNT PACKAGE
FOR HIGH RELIABILITY APPLICATIONS**

MECHANICAL DATA

Dimensions in mm (inches)



**SOT 23 CERAMIC
(LCC3 PACKAGE)**

PAD 1 = Collector PAD 3 = Emitter
PAD 2 = No Collection PAD 4 = Base

$V_{CEO} = 45V$

$I_C = 500mA$

FEATURES

- SILICON PLANAR EPITAXIAL NPN TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^\circ C$ unless otherwise stated)

| | | |
|----------------|---|------------------------|
| V_{CBO} | Collector - Base Voltage | 50V |
| V_{CEO} | Collector - Emitter Voltage | 45V |
| V_{EBO} | Emitter - Base Voltage | 5V |
| I_C | Collector Current | 500mA |
| P_D | Total Device Dissipation | 350mW |
| P_D | Derate above $50^\circ C$ | $2.0mW / ^\circ C$ |
| R_{ja} | Thermal Resistance Junction to Ambient | $350^\circ C / W$ |
| T_{stg}, T_j | Storage Temperature, Operating Temp Range | -55 to $200^\circ C$ |

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|--|-----------------------------|------|------|---------|
| V_{CES}^* | Collector – Emitter Sustaining Voltage | $V_{BE} = 0$ | 50 | | V |
| V_{CEO}^* | Collector – Base Voltage | $I_C = 10mA$ | 45 | | |
| V_{EBO}^* | Emitter – Base Breakdown Voltage | $I_E = 10\mu A$ $I_C = 0$ | 5 | | |
| I_{CBO}^* | Collector – Base Cut-off Current | $I_E = 0$ $V_{CB} = 20V$ | | 100 | nA |
| | | $T_C = 150^{\circ}C$ | | 5 | μA |
| I_{EBO}^* | Emitter Base Cut-off Current | $V_{BE} = 0.5V$ $I_C = 0$ | | 10 | μA |
| $V_{CE(sat)}^*$ | Collector – Emitter Saturation Voltage | $I_C = 500mA$ $I_B = 50mA$ | | 0.62 | V |
| $V_{BE(sat)}^*$ | Base – Emitter Saturation Voltage | $I_C = 500mA$ $I_B = 50mA$ | | 1.2 | |
| h_{FE}^* | DC Current Gain | $I_C = 100mA$ $V_{CE} = 1V$ | 100 | 600 | — |
| | | $I_C = 300mA$ $V_{CE} = 1V$ | 70 | | |
| | | $I_C = 500mA$ $V_{CE} = 1V$ | 40 | | |

* Pulse test $t_p = 300\mu s$, $\delta \leq 2\%$

DYNAMIC CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

| Parameter | Test Conditions | Min | | | | |
|-----------|----------------------|--|--|-----|--|-----|
| f_T | Transition Frequency | $I_C = 10mA$ $V_{CE} = 5V$ $f = 35MHz$ | | 100 | | MHz |
| C_{ob} | Output Capacitance | $V_{CB} = 10V$ $I_E = 0$ $f = 1.0MHz$ | | 8 | | pF |



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