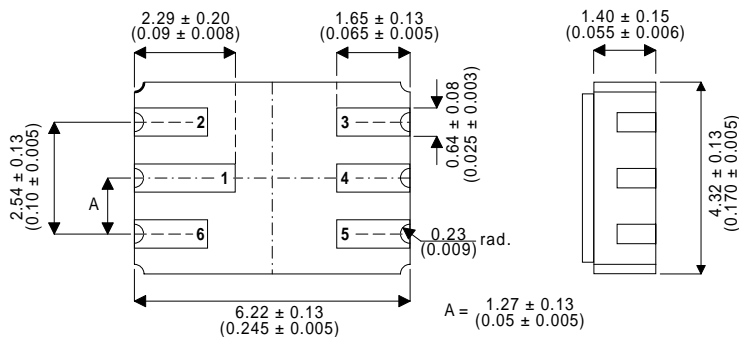


HIGH VOLTAGE, MEDIUM POWER, NPN DUAL TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA
Dimensions in mm (inches)



LCC2 PACKAGE
Underside View

- | | |
|---------------------|---------------------|
| PAD 1 – Collector 1 | PAD 4 – Collector 2 |
| PAD 2 – Base 1 | PAD 5 – Emitter 2 |
| PAD 3 – Base 2 | PAD 6 – Emitter 1 |

FEATURES

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

APPLICATIONS:

Dual Hermetically sealed surface mount version of the popular 2N3700 for high reliability/ space applications requiring small size and low weight devices.

ABSOLUTE MAXIMUM RATINGS

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

| | | 2N3700 |
|-----------|---|------------------------|
| V_{CBO} | Collector – Base Voltage | 140V |
| V_{CEO} | Collector – Emitter Voltage ($I_B = 0$) | 80V |
| V_{EBO} | Emitter – Base Voltage ($I_B = 0$) | 7V |
| I_C | Collector Current | 1A |
| P_D | Per Device Dissipation | 350mW |
| P_D | Total Device Dissipation | 525mW |
| P_D | Derate above $25^{\circ}C$ (Per Device) | 2mW / $^{\circ}C$ |
| | (Total) | 3mW/ $^{\circ}C$ |
| R_{ja} | Thermal Resistance Junction to Ambient | 240 $^{\circ}C/W$ |
| T_{stg} | Storage Temperature | -65 to 200 $^{\circ}C$ |

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

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|------|------|------|---------|
| $V_{CEO(sus)}^*$ Collector – Emitter Sustaining Voltage ($I_B = 0$) | $I_C = 10mA$ | 80 | | | V |
| I_{CBO}^* Collector – Base Cut-off Current ($I_E = 0$) | $V_{CB} = 90V$ | | | 10 | nA |
| | $V_{CB} = 90V$ $T_{amb} = 150^{\circ}C$ | | | 10 | μA |
| I_{EBO}^* Emitter Cut-off Current ($I_C = 0$) | $V_{EB} = 5V$ | | | 10 | nA |
| $V_{CE(sat)}^*$ Collector – Emitter Saturation Voltage | $I_C = 150mA$ $I_B = 15mA$ | | | 0.2 | V |
| | $I_C = 500mA$ $I_B = 50mA$ | | | 0.5 | V |
| $V_{BE(sat)}^*$ Base – Emitter Saturation Voltage | $I_C = 150mA$ $I_B = 15mA$ | | | 1.1 | V |
| h_{FE}^* DC Current Gain ($V_{CE} = 10V$) | $I_C = 0.1mA$ $V_{CE} = 10V$ | 50 | | | - |
| | $I_C = 10mA$ $V_{CE} = 10V$ | 90 | | | - |
| | $I_C = 150mA$ $V_{CE} = 10V$ | 100 | | 300 | - |
| | $I_C = 500mA$ $V_{CE} = 10V$ | 50 | | | - |
| | $I_C = 1A$ $V_{CE} = 10V$ | 15 | | | - |
| | $I_C = 150mA$ $V_{CE} = 10V$ | | | | - |
| $V_{(BR)CBO}$ Collector-base Breakdown Voltage ($I_E = 0$) | $I_C = 100\mu A$ | 140 | | | V |
| $V_{(BR)EBO}$ Emitter-base Breakdown Voltage ($I_C = 0$) | $I_E = 100\mu A$ | 7 | | | V |

* Pulse test $t_p = 300\mu s$, $\delta \leq 1\%$

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

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|------|------|------|------|
| f_T Transition Frequency | $I_C = 50mA$ $V_{CE} = 10V$ $f = 20MHz$ | 100 | | 200 | MHz |
| h_{fe} Small Signal Current Gain | $I_C = 1mA$ $V_{CE} = 5V$ $f = 1kHz$ | 80 | | 400 | - |
| C_{EBO} Emitter-base Capacitance | $I_C = 0$ $V_{EB} = 0.5V$ $f = 1MHz$ | | | 60 | pF |
| C_{CBO} Collector-base Capacitance | $I_C = 0$ $V_{CB} = 10V$ $f = 1MHz$ | | | 12 | pF |
| r_{bb} ${}^1C_{b'c}$ Feedback time constant | $I_C = 10mA$ $V_{CB} = 10V$ $f = 4MHz$ | 25 | | 400 | ps |