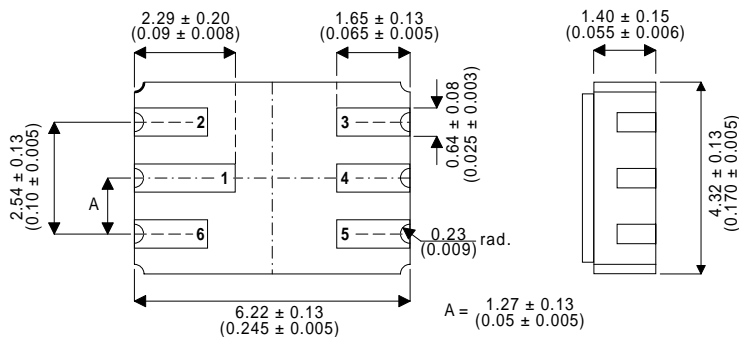


## HIGH VOLTAGE, MEDIUM POWER, NPN DUAL TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

**MECHANICAL DATA**  
Dimensions in mm (inches)



**FEATURES**

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

**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   |

**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)

		<b>2N3700</b>
$V_{CBO}$	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°C (Per Device)	2mW / °C
	(Total)	3mW/°C
$R_{ja}$	Thermal Resistance Junction to Ambient	240°C/W
$T_{stg}$	Storage Temperature	-65 to 200°C

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

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

\* Pulse test  $t_{\text{p}} = 300\mu\text{s}$ ,  $\delta \leq 1\%$

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

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