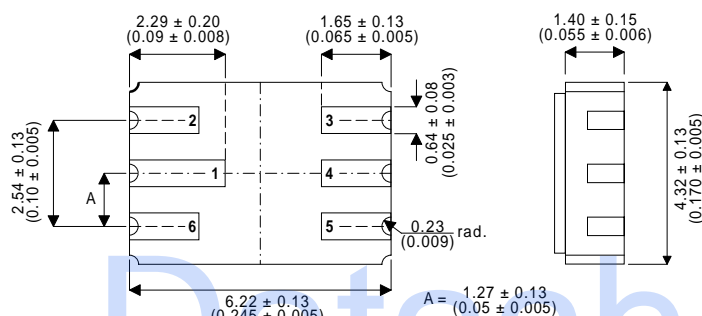


HIGH VOLTAGE, MEDIUM POWER, NPN DUAL TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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)

2N3700DCSM

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 $^{\circ}C$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{CEO}^* Collector – Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 30mA$	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 ($V_{CE} = 10V$)	$I_C = 0.1mA$	50			-
	$I_C = 10mA$	90			-
	$I_C = 150mA$	100		300	-
	$I_C = 500mA$	50			-
	$I_C = 1A$	15			-
	$I_C = 150mA$ $T_{amb} = -55^{\circ}C$	40			-
$V_{(BR)CBO}$ 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		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} $C_{b'c}$ Feedback time constant	$I_C = 10mA$ $V_{CB} = 10V$ $f = 4MHz$	25		400	ps

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