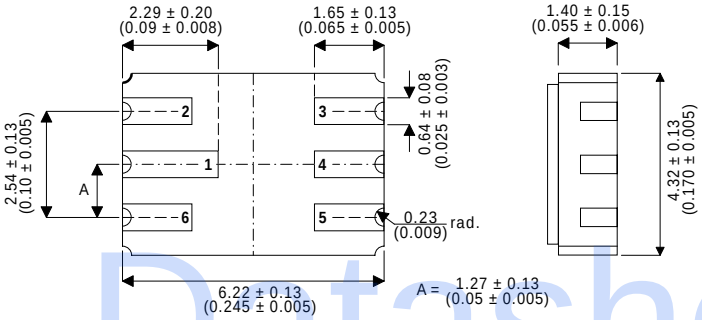
2N3700DCSM

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°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°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

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

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ELECTRICAL CHARACTERISTICS (per Device) (T_{case} = 25°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°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°C	40			-
$V_{(BR)CBO}$	Collector-base Breakdown Voltage (I_E = 0)	I_C = 100µA	140			V
$V_{(BR)EBO}$	Emitter-base BreakdownVoltage (I_C = 0)	I_E = 100µA	7			V

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

DYNAMIC CHARACTERISTICS (T_{case} = 25°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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