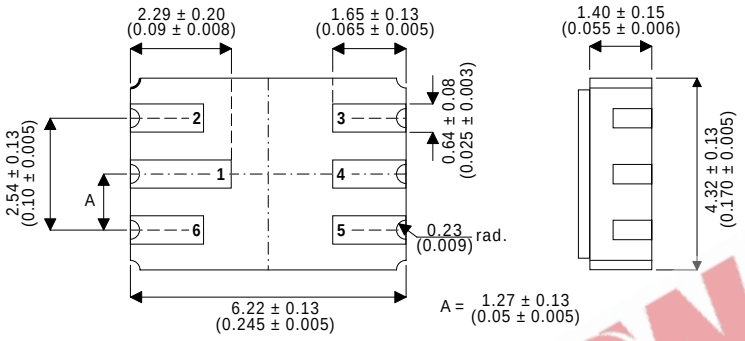
SEME LAB

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 2 – Base 1
PAD 3 – Base 2
PAD 4 – Collector 2
PAD 5 – Emitter 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)

		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°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_{case} = 25°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	V_{CB} = 90V				10	nA
	(I_E = 0)	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	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 = 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		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
$r_{bb}'C_{b'c}$	Feedback time constant	I_C = 10mA	V_{CB} = 10V	f = 4MHz	25		400	ps