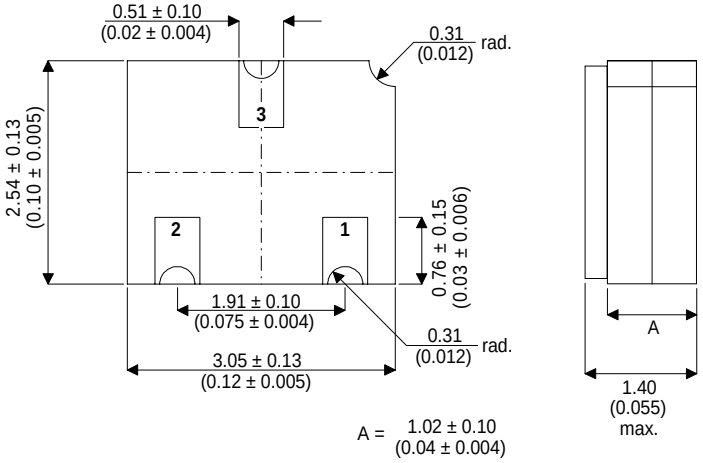
2N3700CSM

HIGH VOLTAGE, MEDIUM POWER, NPN TRANSISTOR FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA
Dimensions in mm (inches)



FEATURES

- **SILICON PLANAR EPITAXIAL NPN TRANSISTOR**
- **HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)**
- **CECC SCREENING OPTIONS**
- **SPACE QUALITY LEVELS OPTIONS**
- **HIGH VOLTAGE**

APPLICATIONS:

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

LCC1 CERAMIC PACKAGE

Underside View

PAD 1 – Emitter PAD 2 – Base PAD 3 – Collector

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage (I_E = 0)	140V
V_{CEO}	Collector – Emitter Voltage (I_B = 0)	80V
V_{EBO}	Emitter – Base Voltage (I_C = 0)	7V
I_C	Collector Current	1A
P_D	Total Power Dissipation ($T_{amb} \leq 25°C$)	0.5W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	350°C/W
T_{stg}	Storage Temperature	–65 to 200°C

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Document Number 5594
Issue 1

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
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	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_C = 100µA	140			V
	(I_E = 0)					
$V_{(BR)EBO}$	Emitter-base BreakdownVoltage	I_E = 100µA	7			V
	(I_C = 0)					

* 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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