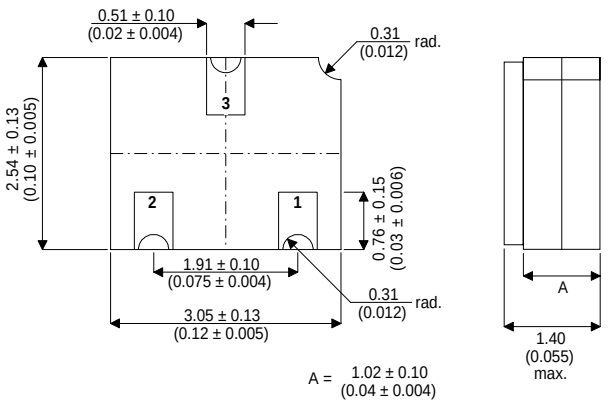
SEME LAB

2N930CSM

HIGH SPEED, MEDIUM POWER, NPN GENERAL PURPOSE TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA
Dimensions in mm (inches)



SOT23 CERAMIC
(LCC1 PACKAGE)

Underside View

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

FEATURES

- **SILICON PLANAR EPITAXIAL NPN TRANSISTOR**
- **HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)**
- **CECC SCREENING OPTIONS**

APPLICATIONS:

Hermetically sealed surface mount version of the popular 2N930 for high reliability applications requiring small size and low weight devices.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage		45V
V_{CEO}	Collector – Emitter Voltage		45V
V_{EBO}	Emitter – Base Voltage		5V
I_C	Collector Current		30mA
P_D	Total Device Dissipation	@ T_A =25°C	500mW
		Derate above 25°C	2.85mW / °C
P_D	Total Device Dissipation	@ T_C =25°C	1.16W
		Derate above 25°C	12mW / °C
T_{STG} , T_J	Operating and Storage Temperature Range		–65 to +175°C

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)CEO*}$	Collector – Emitter Breakdown Voltage	I_C = 10mA	I_B = 0	45			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 10µA	I_E = 0	80			
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 10µA	I_C = 0	5			
I_{CBO}	Collector – Base Cut-off Current	V_{CE} = 5V	I_B = 0			2	nA
		V_{CB} = 45V	I_E = 0			10	
		V_{CE} = 45V	V_{BE} = 0			10	
I_{EBO}	Emitter – Base Cut-off Current	V_{BE} = 5V	I_C = 0			10	nA
$V_{CE(sat)*}$	Collector – Emitter Saturation Voltage	I_C = 10mA				1	V
$V_{BE(sat)*}$	Base – Emitter Saturation Voltage	I_B = 0.5mA		0.7		0.9	
h_{FE}	DC Current Gain	V_{CE} = 10V	I_C = 500µA	150			—
		V_{CE} = 10V	I_C = 10mA*			600	
f_T	Current Gain Bandwidth Product	I_C = 500µA f = 30MHz	V_{CE} = 5V	30			MHz
C_{ob}	Output Capacitance	I_E = 0 f = 1MHz	V_{CB} = 5V			8	pF
h_{ib}	Input Impedance	I_E = 1mA		25		32	Ω
h_{rb}	Voltage Feedback Ratio	V_{CB} = 5V				600	x10^{-6}
h_{ob}	Output Admittance	f = 1kHz				1	µmhos
h_{fe}	Small Signal Current Gain	V_{CE} = 5V f = 1MHz	I_C = 0	150		600	—
NF	Noise Figure	V_{CE} = 5V R_S = 10kΩ f = 10Hz to 15.7kHz	I_C = 10µA			3	dB

* Pulse Test: $t_p \leq 300\mu s$, $\delta \leq 2\%$

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