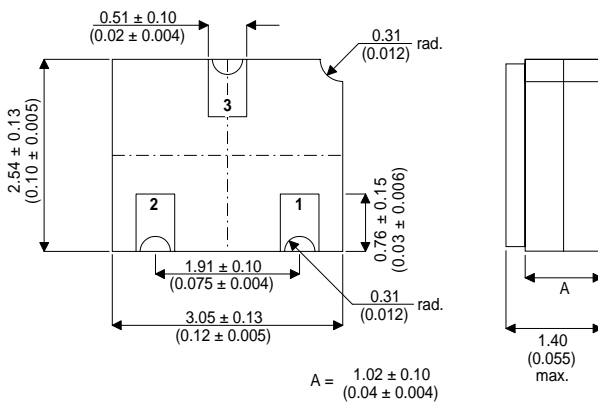# SEME LAB

2N4393CSM

SMALL SIGNAL
N–CHANNEL J–FET 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 – Source   PAD 2 – Drain   PAD 3 – Gate

FEATURES

- **HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)**
- **CECC SCREENING OPTIONS**
- **SPACE QUALITY LEVELS OPTIONS**

APPLICATIONS:

Hermetically sealed surface mount version of the popular 2N4393 for high reliability / space applications requiring small size and low weight devices.

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

V_{GD}	Gate – Drain Voltage	–35V
V_{GS}	Gate – Source Voltage	–35V
I_G	Gate Current	50mA
P_D	Power Dissipation	350mW
	Derate	2.8mW / °C
T_j	Operating Junction Temperature Range	–55 to 175°C
T_{stg}	Storage Temperature Range	–55 to 175°C

2N4393CSM

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC CHARACTERISTICS							
$V_{(BR)GSS}$	Gate – Source Breakdown Voltage	$V_{DS} = 0V$	$I_G = -1\mu A$	−35	−55		V
$V_{GSS(off)}$	Gate – Source Cut–off Voltage	$V_{DS} = 20V$	$I_D = 1nA$	−0.5		−3	
I_{DSS*}	Saturation Current	$V_{DS} = 20V$	$V_{GS} = 0V$	5		30	mA
I_{GSS}	Gate Reverse Current	$V_{GS} = -20V$			−5	−100	pA
		$V_{DS} = 0V$	$T_{amb} = 125°C$		−3	−200	nA
$I_{D(off)}$	Drain Cut–off Current	$V_{DS} = 20V$	$V_{GS} = -5V$		5	100	pA
		$V_{DS} = 10V$	$V_{GS} = -5V$ $T_{amb} = 125°C$		3	200	nA
$V_{DS(on)}$	Drain – Source On Voltage	$V_{GS} = 0V$	$I_D = 3mA$		0.25	0.4	V
$R_{DS(on)}$	Drain – Source On Resistance	$V_{GS} = 0V$	$I_D = 1mA$			100	Ω
DYNAMIC CHARACTERISTICS							
$R_{DS(on)}$	Drain – Source On Resistance	$V_{GS} = 0V$ $f = 1kHz$	$I_D = 0mA$			100	Ω
C_{ISS}	Common – Source Input Capacitance	$V_{DS} = 20V$ $f = 1MHz$	$V_{GS} = 0V$		13	16	pF
C_{RSS}	Common – Source Reverse Transfer Capacitance	$V_{DS} = 0V$ $f = 1MHz$	$V_{GS} = -5V$		4	5	pF
$\bar{e}_n$	Equivalent Input Noise Voltage	$V_{DG} = 10V$ $f = 1kHz$	$I_D = 10mA$		3.0		$\frac{nV}{\sqrt{Hz}}$
t_r	Rise Time					5	nS
$t_{d(on)}$	Turn-on Time	$V_{DD} = 10V$ $V_{GS} = 0V$	$I_D = 3mA$ $V_{GS(off)} = 5V$			15	
t_f	Fall Time					30	
$t_{d(off)}$	Turn-off Time					50	