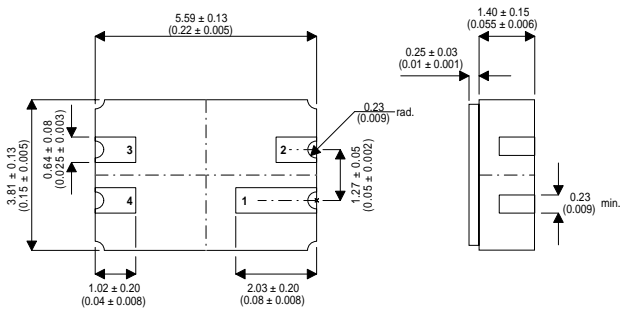


## HIGH VOLTAGE, MEDIUM POWER, NPN TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

**MECHANICAL DATA**  
Dimensions in mm (inches)



**LCC3 PACKAGE**  
**Underside View**

- PAD 1 – Collector
- PAD 2 – Emitter
- PAD 3 – N/C
- PAD 4 – Base

**FEATURES**

- Hermetic Ceramic 4 pin Surface Mount Package - LCC3
- High Voltage Small Signal Type
- Full Screening Options Available
- “R” Denotes Reverse Pinning

**APPLICATIONS:**

The 2N3439CSM4 and 2N3440CSM4 are high voltage silicon epitaxial planar transistors mounted in the popular 4 pin ceramic surface mount hermetically sealed package. These products are specifically intended for use in High reliability systems and can be ordered with a full range of screening options from standard Military (equivalent to CECC Full Assessment Level) through all options up to full space flight level.

<b>ABSOLUTE MAXIMUM RATINGS</b>		<b>2N3439CSM4</b>	<b>2N3440CSM4</b>
$V_{CBO}$	Collector – Base Voltage ( $I_E = 0$ )	450V	300V
$V_{CEO}$	Collector – Emitter Voltage ( $I_B = 0$ )	350V	250V
$V_{EBO}$	Emitter – Base Voltage ( $I_B = 0$ )	7V	7V
$I_C$	Collector Current.	1A	1A
$I_B$	Base Current.	0.5A	0.5A
$P_{tot}$	Total Power Dissipation at $T_{amb} = 25^\circ C$ with product mounted on a suitable PCB to provide a heat path.	0.5W	0.5W
$T_{stg}$	Storage Temperature.	-65 to +200°C	
$T_j$	Maximum Junction Temperature.	+200°C	

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$ * Collector – Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 50mA$ 2N3439CSM4R	350			V
	2N3440CSM4R	250			
$I_{CEX}$ * Collector Cut-off Current ( $V_{BE} = -1.5V$ )	2N3439CSM4R			500	$\mu A$
	2N3440CSM4R			500	
$I_{CBO}$ * Collector – Base Cut-off Current ( $I_E = 0$ )	$V_{CB} = 360V$ 2N3439CSM4R			20	$\mu A$
	$V_{CB} = 250V$ 2N3440CSM4R			20	
$I_{CEO}$ * Collector – Cut-off Current ( $I_B = 0$ )	$V_{CE} = 300V$ 2N3439CSM4R			20	$\mu A$
	$V_{CE} = 200V$ 2N3440CSM4R			50	
$I_{EBO}$ * Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 6V$			20	$\mu A$
$V_{CE(sat)}$ * Collector – Emitter Saturation Voltage	$I_C = 50mA$ $I_B = 4mA$			0.5	V
$V_{BE(sat)}$ * Base – Emitter Saturation Voltage	$I_C = 50mA$ $I_B = 4mA$			1.3	
$h_{FE}$ * DC Current Gain	$I_C = 20mA$ $V_{CE} = 10V$ 2N3439CSM4R only	40			—
	$I_C = 20mA$ $V_{CE} = 10V$	30			

\* Pulse test  $t_p = 300\mu s$ ,  $\delta \leq 2\%$

**DYNAMIC CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$f_T$ Transition Frequency	$I_C = 10mA$ $V_{CE} = 10V$ $f = 5MHz$	15			MHz
$C_{ob}$ Output Capacitance	$V_{CB} = 10V$ $f = 10MHz$			10	pF
$h_{fe}$ Small Signal Current Gain	$I_C = 5mA$ $V_{CE} = 10V$ $f = 1kHz$	25			