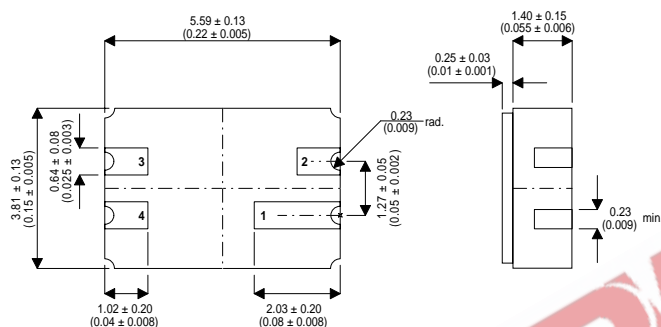


# HIGH VOLTAGE, MEDIUM POWER, NPN TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

## MECHANICAL DATA

Dimensions in mm (inches)



## LCC3 PACKAGE Underside View

PAD 1 – Collector      PAD 3 – N/C  
PAD 2 – Emitter      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.

## ABSOLUTE MAXIMUM RATINGS

		2N3439CSM4	2N3440CSM4
$V_{CBO}$	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 $T_{amb} = 25^\circ\text{C}$ with product mounted on a suitable PCB to provide a heat path.	0.5W	0.5W
$T_{stg}$	Storage Temperature.	$-65$ to $+200^\circ\text{C}$	
$T_j$	Maximum Junction Temperature.	$+200^\circ\text{C}$	

## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>CEO(sus)</sub> * Collector – Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 50mA 2N3439CSM4R 2N3440CSM4R	350 250			V
I <sub>CEX</sub> * Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	2N3439CSM4R 2N3440CSM4R			500 500	μA
I <sub>CBO</sub> * Collector – Base Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 360V 2N3439CSM4R V <sub>CB</sub> = 250V 2N3440CSM4R			20 20	μA
I <sub>CEO</sub> * Collector – Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 300V 2N3439CSM4R V <sub>CE</sub> = 200V 2N3440CSM4R			20 50	μA
I <sub>EBO</sub> * Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 6V			20	μA
V <sub>CE(sat)</sub> * Collector – Emitter Saturation Voltage	I <sub>C</sub> = 50mA I <sub>B</sub> = 4mA			0.5	V
V <sub>BE(sat)</sub> * Base – Emitter Saturation Voltage	I <sub>C</sub> = 50mA I <sub>B</sub> = 4mA			1.3	
h <sub>FE</sub> * DC Current Gain	I <sub>C</sub> = 20mA V <sub>CE</sub> = 10V 2N3439CSM4R only I <sub>C</sub> = 20mA V <sub>CE</sub> = 10V	40 30			—

\* Pulse test t<sub>p</sub> = 300μs, δ ≤ 2%

## DYNAMIC CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
f <sub>T</sub> Transition Frequency	I <sub>C</sub> = 10mA V <sub>CE</sub> = 10V f = 5MHz	15			MHz
C <sub>ob</sub> Output Capacitance	V <sub>CB</sub> = 10V f = 10MHz			10	pF
h <sub>fe</sub> Small Signal Current Gain	I <sub>C</sub> = 5mA V <sub>CE</sub> = 10V f = 1kHz	25			