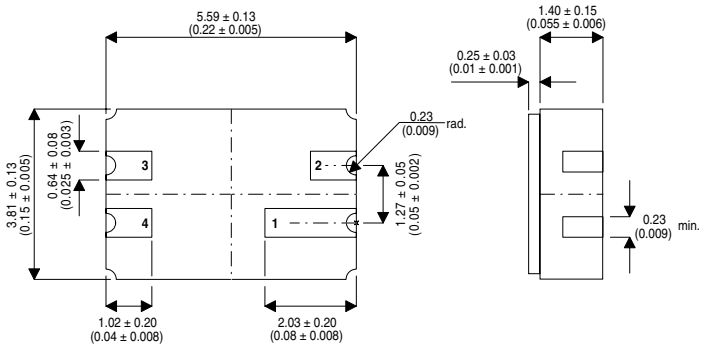
2N3439CSM4
2N3440CSM4

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 – Emitter
PAD 2 – N/C	PAD 4 – Base

FEATURES

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

APPLICATIONS:

Hermetically sealed surface mount version of the popular 2N3439 & 2N3440 for high reliability / space applications requiring small size and low weight devices.

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

		2N3439	2N3440
V_{CBO}	Collector – Base Voltage	450V	300V
V_{CEO}	Collector – Emitter Voltage (I_B = 0)	350V	250V
V_{EBO}	Emitter – Base Voltage (I_B = 0)	7V	
I_C	Collector Current	500mA	
P_D	Total Device Dissipation	350mW	
P_D	Derate above 50°C	2.0mW / °C	
R_{ja}	Thermal Resistance Junction to Ambient	350°C/W	
T_{stg}	Storage Temperature	–55 to 200°C	

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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Issue 1

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$*	Collector – Emitter Sustaining Voltage (I_B = 0)	I_C = 50mA	**2N3439**	350			V
		I_C = 50mA	**2N3440**	250			
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 300V	**2N3439**			20	µA
		V_{CE} = 200V	**2N3440**			50	
I_{CEX}	Collector Cut-off Current (V_{BE} = -1.5V)	V_{CE} = 450V	**2N3439**			500	µA
		V_{CE} = 300V	**2N3440**			500	
I_{CBO}	Collector – Base Cut-off Current (I_E = 0)	V_{CB} = 350V	**2N3439**			20	µA
		V_{CB} = 250V	**2N3440**			20	
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 6V				20	µA
$V_{CE(sat)}$*	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	V
h_{FE}*	DC Current Gain	I_C = 20mA, V_{CE} = 10V		40		160	—
		I_C = 2mA, V_{CE} = 10V	**2N3439 only**	30			—

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

DYNAMIC CHARACTERISTICS (T_{case} = 25°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 = 1MHz			10	pF
h_{fe}	Small Signal Current Gain	I_C = 5mA	V_{CE} = 10V	f = 1kHz	25			—

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