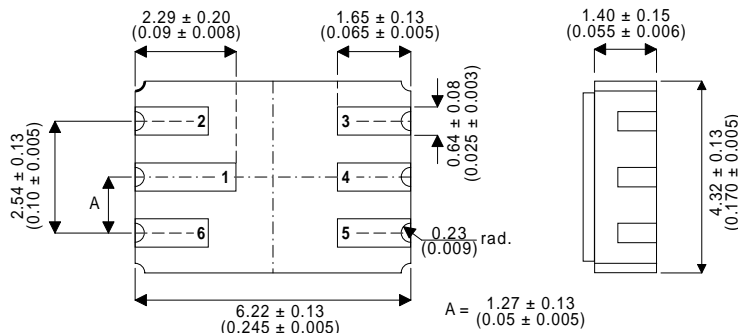


HIGH VOLTAGE, MEDIUM POWER, NPN DUAL TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA Dimensions in mm (inches)



LCC2 PACKAGE Underside View

PAD 1 – Collector 1 PAD 4 – Collector 2
PAD 2 – Base 1 PAD 5 – Emitter 2
PAD 3 – Base 2 PAD 6 – Emitter 1

FEATURES

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

APPLICATIONS:

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

ABSOLUTE MAXIMUM RATINGS

($T_{case} = 25^{\circ}C$ 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	7V
I_C	Collector Current	500mA	500mA
P_D	Per Device Dissipation	350mW	350mW
P_D	Total Device Dissipation	525mW	525mW
P_D	Derate above $25^{\circ}C$ (Per Device)	2mW / $^{\circ}C$	2mW / $^{\circ}C$
	(Total)	3mW / $^{\circ}C$	3mW / $^{\circ}C$
R_{ja}	Thermal Resistance Junction to Ambient	240 $^{\circ}C/W$	240 $^{\circ}C/W$
T_{stg}	Storage Temperature	-55 to 200 $^{\circ}C$	-55 to 200 $^{\circ}C$

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.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}^*$ Collector – Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 50mA$ 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 ($I_E = 0$)	$V_{CB} = 360V$ 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	$I_C = 20mA$ 2N3439	40		160	—
	$V_{CE} = 10V$ 2N3440				
	$I_C = 2mA$ 2N3439	30			—
	$V_{CE} = 10V$				

* 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	$V_{CB} = 10V$ $I_E = 0$ $f = 1.0MHz$			10	pF
h_{fe} Small Signal Current Gain	$I_C = 5mA$ $V_{CE} = 10V$ $f = 1kHz$	25			

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