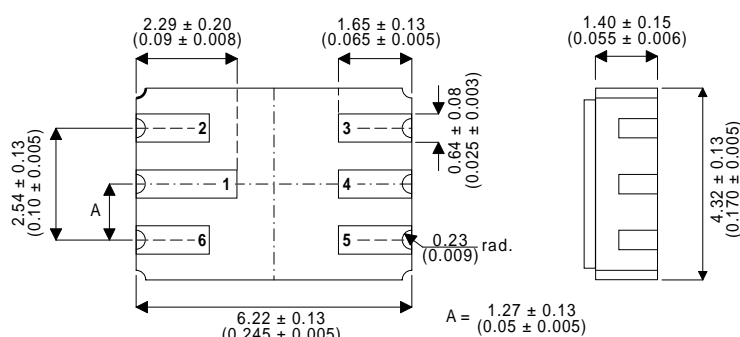


HIGH VOLTAGE, MEDIUM POWER, NPN DUAL TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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 $^{\circ}C$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO(sus)}}^*$ Collector – Emitter Sustaining Voltage ($I_{\text{B}} = 0$)	$I_{\text{C}} = 50\text{mA}$ 2N3439	350			V
	$I_{\text{C}} = 50\text{mA}$ 2N3440	250			
I_{CEO} Collector Cut-off Current ($I_{\text{B}} = 0$)	$V_{\text{CE}} = 300\text{V}$ 2N3439			20	μA
	$V_{\text{CE}} = 200\text{V}$ 2N3440			50	
I_{CEX}^* Collector Cut-off Current ($V_{\text{BE}} = -1.5\text{V}$)	$V_{\text{CE}} = 450\text{V}$ 2N3439			500	μA
	$V_{\text{CE}} = 300\text{V}$ 2N3440			500	
I_{CBO}^* Collector – Base Cut-off Current ($I_{\text{E}} = 0$)	$V_{\text{CB}} = 360\text{V}$ 2N3439			20	μA
	$V_{\text{CB}} = 250\text{V}$ 2N3440			20	
I_{EBO}^* Emitter Cut-off Current ($I_{\text{C}} = 0$)	$V_{\text{EB}} = 6\text{V}$			20	μA
$V_{\text{CE(sat)}}^*$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 4\text{mA}$			0.5	V
$V_{\text{BE(sat)}}^*$ Base – Emitter Saturation Voltage	$I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 4\text{mA}$			1.3	V
h_{FE}^* DC Current Gain	$I_{\text{C}} = 20\text{mA}$ 2N3439	40		160	—
	$V_{\text{CE}} = 10\text{V}$ 2N3440				
	$I_{\text{C}} = 2\text{mA}$ 2N3439	30			—
	$V_{\text{CE}} = 10\text{V}$				

* Pulse test $t_{\text{p}} = 300\mu\text{s}$, $\delta \leq 2\%$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
f_{T} Transition Frequency	$I_{\text{C}} = 10\text{mA}$ $V_{\text{CE}} = 10\text{V}$ $f = 5\text{MHz}$	15			MHz
C_{ob} Output Capacitance	$V_{\text{CB}} = 10\text{V}$ $I_{\text{E}} = 0$ $f = 1.0\text{MHz}$			10	pF
h_{fe} Small Signal Current Gain	$I_{\text{C}} = 5\text{mA}$ $V_{\text{CE}} = 10\text{V}$ $f = 1\text{kHz}$	25			

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