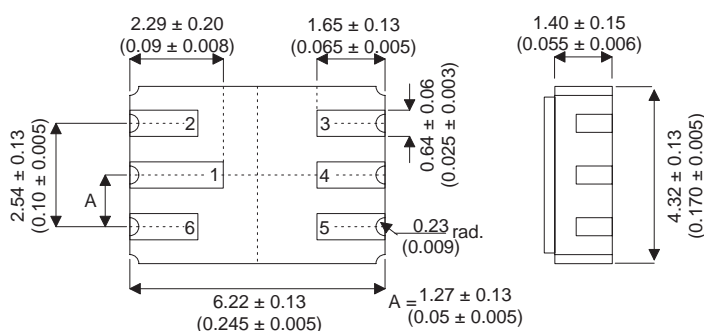


## DUAL HIGH SPEED, MEDIUM POWER, NPN SWITCHING TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE

### MECHANICAL DATA

Dimensions in mm (inches)



### FEATURES

- DUAL SILICON PLANAR EPITAXIAL DUAL NPN TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE
- SCREENING OPTIONS AVAILABLE

### 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

### APPLICATIONS:

Hermetically sealed dual surface mount dual version of the popular 2N2369A for high reliability / space applications requiring small size and low weight devices.

### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

		PER SIDE	TOTAL DEVICE
$V_{CBO}$	Collector – Base Voltage	40V	
$V_{CEO}$	Collector – Emitter Voltage	15V	
$V_{EBO}$	Emitter – Base Voltage	4.5V	
$I_C$	Collector Current	200mA	
$P_D$	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	360mW	500mW
	Derate above $25^\circ\text{C}$	2.06mW / $^\circ\text{C}$	2.85mW / $^\circ\text{C}$
$P_D$	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	680mW/ $^\circ\text{C}$	800mW/ $^\circ\text{C}$
	Derate above $25^\circ\text{C}$	3.88mW/ $^\circ\text{C}$	4.57mW/ $^\circ\text{C}$
$T_{STG}, T_J$	Operating and Storage Temperature Range	–65 to +200 $^\circ\text{C}$	

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** ( $T_A = 25^\circ\text{C}$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CEO}^*$ Collector – Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	15			V
$V_{(BR)CBO}$ Collector – Base Breakdown Voltage	$I_C = 10\mu\text{A}$ $I_E = 0$	40			V
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	4.5			V
$I_{CES}$ Collector – Emitter Cut-off Current	$V_{CE} = 20\text{V}$ $V_{BE} = 0$			0.40	$\mu\text{A}$
$I_{CBO}$ Collector – Base Cut-off Current	$V_{CB} = 20\text{V}$ $T_A = +150^\circ\text{C}$			30	
$V_{CE(sat)}^*$ Collector – Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 1\text{mA}$			0.20	V
	$T_A = +125^\circ\text{C}$			0.30	
	$I_C = 30\text{mA}$ $I_B = 3\text{mA}$			0.25	
	$I_C = 100\text{mA}$ $I_B = 10\text{mA}$			0.50	
$V_{BE(sat)}^*$ Base – Emitter Saturation Voltage	$I_C = 10\text{mA}$ $T_A = +25^\circ\text{C}$	0.70		0.85	V
	$I_B = 1\text{mA}$ $T_A = +125^\circ\text{C}$	0.59			
	$T_A = -55^\circ\text{C}$			1.02	
	$I_C = 30\text{mA}$ $I_B = 3\text{mA}$			1.15	
	$I_C = 100\text{mA}$ $I_B = 10\text{mA}$			1.60	
$h_{FE}^*$ Current Gain	$I_C = 10\text{mA}$ $V_{CE} = 0.35\text{V}$	40			—
	$T_A = -55^\circ\text{C}$	20			
	$I_C = 30\text{mA}$ $V_{CE} = 0.4\text{V}$	30			
	$I_C = 10\text{mA}$ $V_{CE} = 1.0\text{V}$			120	
	$I_C = 100\text{mA}$ $V_{CE} = 1\text{V}$	20			
$f_T$ Transition Frequency	$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $f = 100\text{MHz}$	500			MHz
$C_{ob}$ Output Capacitance	$V_{CB} = 5\text{V}$ $I_E = 0$ $f = 140\text{kHz}$			4	pF
$t_s$ Storage Time	$I_C = 10\text{mA}$ $I_{B1} = I_{B2} = 10\text{mA}$			13	ns
$t_{on}$ Turn-On Time	$I_C = 10\text{mA}$ $V_{CC} = 3\text{V}$			12	
$t_{off}$ Turn-Off Time	$I_{B1} = 3\text{mA}$ $I_{B2} = 1.5\text{mA}$			18	

\* Pulse Test:  $t_p \leq 300\mu\text{s}$ ,  $\delta \leq 2\%$ .