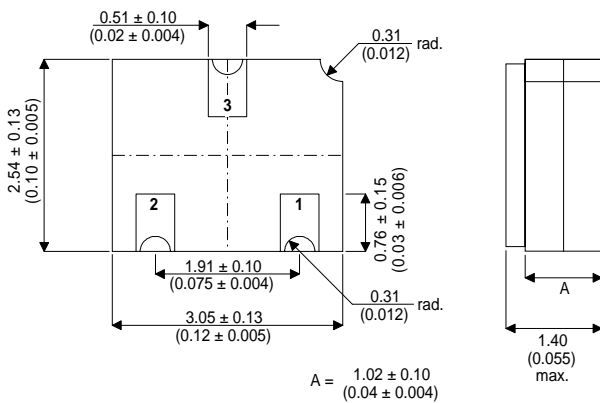


# HIGH SPEED, MEDIUM POWER, PNP SWITCHING TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

**MECHANICAL DATA**  
Dimensions in mm (inches)



**LCC1 PACKAGE  
(DSCC TYPE UB)**

**Underside View**

PAD 1 – Base    PAD 2 – Emitter    PAD 3 – Collector

**FEATURES**

- SILICON PLANAR EPITAXIAL PNP TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- JAN LEVEL SCREENING OPTIONS
- HIGH SPEED SATURATED SWITCHING

**APPLICATIONS:**

Hermetically sealed surface mount version of the popular 2N2907A for high reliability / space applications requiring small size and low weight devices.

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

$V_{CBO}$	Collector - Base Voltage	-60V
$V_{CEO}$	Collector - Emitter Voltage	-60V
$V_{EBO}$	Emitter - Base Voltage	-5V
$I_C$	Collector Current	600mA
$P_D$	Total Device Dissipation	350mW
$P_D$	Derate above 50°C	2.0mW / °C
$R_{ja}$	Thermal Resistance Junction to Ambient	350°C / W
$T_{stg}, T_j$	Storage Temperature, Operating Temp Range	-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.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}^*$ Collector – Emitter Sustaining Voltage	$I_C = 10mA$	-60			V
$V_{(BR)CBO}^*$ Collector – Base Breakdown Voltage	$I_C = 10\mu A$	-60			V
$V_{(BR)EBO}^*$ Emitter – Base Breakdown Voltage	$I_E = 10\mu A$ $I_C = 0$	-5			V
$I_{CEX}^*$ Collector Cut-off Current	$V_{CE} = 30V$ $V_{BE} = 0.5V$			50	nA
$I_{CBO}^*$ Collector – Base Cut-off Current	$I_E = 0$ $V_{CB} = 50V$ $T_C = 125^{\circ}C$			0.01 10	$\mu A$
$I_{EBO}$ Emitter Cut-off Current	$V_{EB} = 4V$			50	nA
$V_{CE(sat)}^*$ Collector – Emitter Saturation Voltage	$I_C = 150mA$ $I_B = 15mA$ $I_C = 500mA$ $I_B = 50mA$			-0.4 -1.6	V
$V_{BE(sat)}^*$ Base – Emitter Saturation Voltage	$I_C = 150mA$ $I_B = 15mA$ $I_C = 500mA$ $I_B = 50mA$			-1.3 -2.6	V
$h_{FE}^*$ DC Current Gain	$I_C = 0.1mA$ $V_{CE} = 10V$ $I_C = 1mA$ $V_{CE} = 10V$ $I_C = 10mA$ $V_{CE} = 10V$ $I_C = 150mA$ $V_{CE} = 10V$ $I_C = 500mA$ $V_{CE} = 10V$	75 100 100 100 50			— 300

\* 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	$I_C = 50mA$ $V_{CE} = 20V$ $f = 100MHz$	200			MHz
$C_{ob}$ Output Capacitance	$V_{CB} = 10V$ $I_E = 0$ $f = 1.0MHz$			8	pF
$C_{ib}$ Input Capacitance	$V_{BE} = 2V$ $I_C = 0$ $f = 1.0MHz$			30	pF

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$t_{on}$ Turn-on Time	$V_{CC} = 30V$		26	45	ns
$t_d$ Delay Time	$I_C = 150mA$		6.0	10	
$t_r$ Rise Time	$I_{B1} = 15mA$		20	40	
$t_{off}$ Turn-off Time	$V_{CC} = 6V$		70	100	ns
$t_s$ Storage Time	$I_C = 150mA$		50	80	
$t_f$ Fall Time	$I_{B1} = I_{B2} = 15mA$		20	30	

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