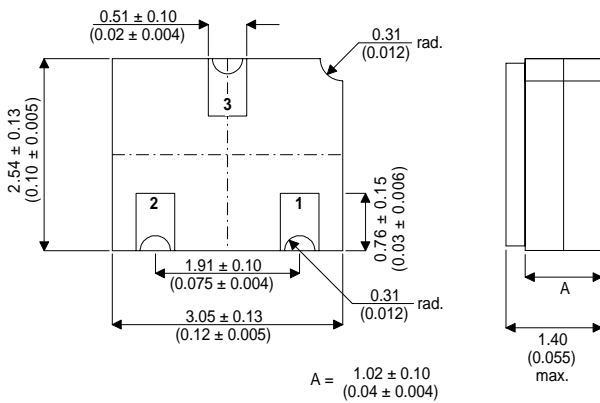


## HIGH SPEED, MEDIUM POWER, PNP GENERAL PURPOSE TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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



**SOT23 CERAMIC  
(LCC1 PACKAGE)**

**Underside View**

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

**FEATURES**

- SILICON PLANAR EPITAXIAL PNP TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- SCREENING OPTIONS AVAILABLE
- HIGH SPEED, LOW SATURATION SWITCH

**APPLICATIONS:**

Hermetically sealed surface mount version of the popular 2N2894 for high reliability applications requiring small size and low weight devices.

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

$V_{CBO}$	Collector – Base Voltage	-12V
$V_{CEO}$	Collector – Emitter Voltage	-12V
$V_{EBO}$	Emitter – Base Voltage	-4V
$I_C$	Collector Current	200mA
$P_D$	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	360mW
	Derate above $25^\circ\text{C}$	2.06mW / °C
$P_D$	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	1.2W
	Derate above $25^\circ\text{C}$	6.85mW / °C
$T_{STG}, T_J$	Operating and Storage Temperature Range	-65 to +200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CBO}^*$ Collector – Base Breakdown Voltage	$I_C = 10\mu\text{A}$ $I_E = 0$	- 12			V
$V_{(BR)CEO}$ Collector – Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	- 12			
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	- 4			
$I_{CBO}$ Collector Cut-off Current	$V_{CB} = -6\text{V}$ $T_{amb} = 125^\circ\text{C}$			- 10	nA
$I_{CES}$ Collector Cut-off Current	$V_{BE} = 0$ $V_{CE} = -6\text{V}$			- 80	
$V_{CE(sat)}$ Collector – Emitter Saturation Voltage	$I_C = -10\text{mA}$ $I_B = -1\text{mA}$			-0.15	V
	$I_C = -30\text{mA}$ $I_B = -3\text{mA}$			-0.20	
	$I_C = -100\text{mA}$ $I_B = -10\text{mA}$			- 0.50	
$V_{BE(sat)}$ Base – Emitter On Voltage	$I_C = -10\text{mA}$ $I_B = -1\text{mA}$	-0.78		-0.98	V
	$I_C = -30\text{mA}$ $I_B = -3\text{mA}$	-0.85		-1.2.	
	$I_C = -100\text{mA}$ $I_B = -10\text{mA}$			-1.7	
$h_{FE}$ DC Current Gain	$I_C = -10\text{mA}$ $V_{CE} = -0.3\text{V}$	30			—
	$I_C = -30\text{mA}$ $V_{CE} = -0.5\text{V}$	40		150	
	$I_C = -100\text{mA}$ $V_{CE} = -1\text{V}$	25			
	$I_C = -30\text{mA}$ $V_{CE} = -0.5\text{V}$ $T_{amb} = 125^\circ\text{C}$	17			
$f_T$ Current Gain Bandwidth Product	$V_{CE} = -10\text{V}$ $f = 100\text{MHz}$ $I_C = -30\text{mA}$	400			MHz
$C_{ebo}$ Emitter – Base – Capacitance	$V_{EB} = -5\text{V}$ $I_C = 0$ $f = 1\text{MHz}$			6	pF
$C_{cbo}$ Collector – Base – Capacitance	$V_{CB} = -5\text{V}$ $I_C = 0$ $f = 1\text{MHz}$			6	pF
$t_{on}$ Turn on Time	$I_C = -30\text{mA}$ $V_{CE} = -2\text{V}$ $I_{B2} = -1.5\text{mA}$			60	ns
$t_{off}$ Turn off Time	$I_C = -30\text{mA}$ $V_{CE} = -2\text{V}$ $I_{B1} = I_{B2} = -1.5\text{mA}$			9	ns

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



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