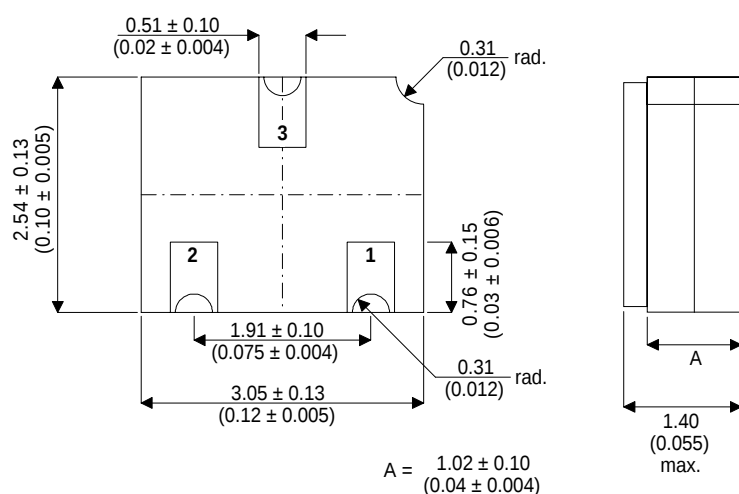


HIGH SPEED, MEDIUM POWER, PNP GENERAL PURPOSE TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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°C	2.06mW / $^\circ\text{C}$
P_D	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	1.2W
	Derate above 25°C	6.85mW / $^\circ\text{C}$
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
$V_{(BR)CBO}^*$ 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	μA
I_{CES} Collector Cut-off Current	$V_{BE} = 0$ $V_{CE} = -6\text{V}$			– 80	nA
$V_{CE(sat)}$ 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: $t_p \leq 300\mu\text{s}$, $\delta \leq 2\%$.