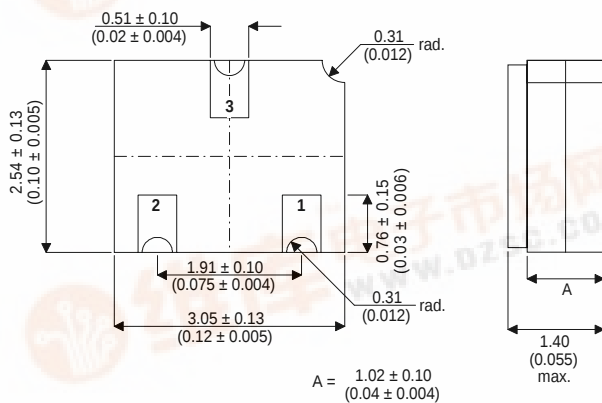


2N2894CSM

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 / $^\circ\text{C}$
	Operating and Storage Temperature Range	-65 to +200 $^\circ\text{C}$

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