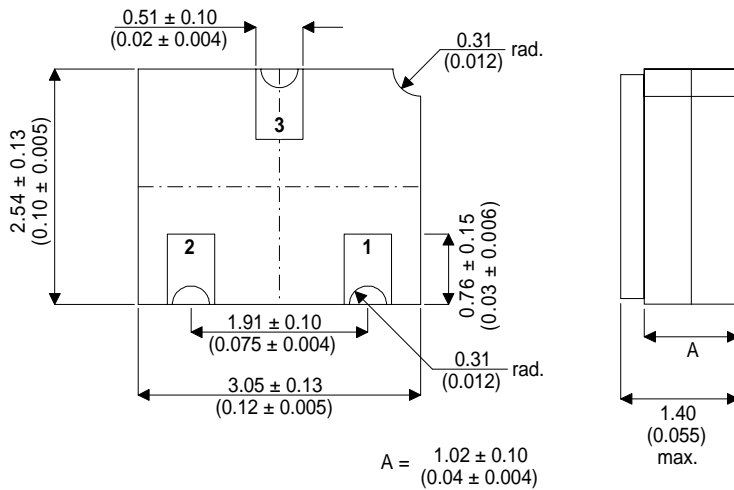


GENERAL PURPOSE PNP TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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 NPN TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- HIGH SPEED SATURATED SWITCHING

APPLICATIONS:

Hermetically sealed surface mount version of the popular 2N3906 for high reliability / space 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 ($I_E = 0$)	-40V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	-40V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	-5V
I_C	Collector Current	-200mA
P_D	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	500mW
	Derate above 25°C	2.86mW / $^\circ\text{C}$
P_D	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	1.16W
	Derate above 25°C	6.6mW / $^\circ\text{C}$
T_{STG}, T_J	Operating and Storage Temperature Range	-55 to +150 $^\circ\text{C}$

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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	$I_C = -1\text{mA}$ $I_B = 0$	-40			V
$V_{(BR)CBO}$ Collector – Base Breakdown Voltage	$I_C = -10\mu\text{A}$ $I_E = 0$	-40			
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_E = -10\mu\text{A}$ $I_C = 0$	-5			
I_{CEX} Collector – Emitter Cut-off Current	$V_{CE} = -30\text{V}$ $V_{BE} = 3\text{V}$			-50	nA
$V_{CE(sat)}$ Collector – Emitter Saturation Voltage	$I_C = -10\text{mA}$ $I_B = -1\text{mA}$			-0.25	V
	$I_C = -50\text{mA}$ $I_B = -5\text{mA}$			-0.40	
$V_{BE(sat)}$ Base – Emitter Saturation Voltage	$I_C = -10\text{mA}$ $I_B = -1\text{mA}$	-0.65		-0.85	V
	$I_C = -50\text{mA}$ $I_B = -5\text{mA}$			-0.95	
h_{FE^*} DC Current Gain	$V_{CE} = -1\text{V}$	$I_C = -0.1\text{mA}$	60		—
		$I_C = -1\text{mA}$	80		
		$I_C = -10\text{mA}$	100	300	
		$I_C = -50\text{mA}$	60		
		$I_C = -100\text{mA}$	30		

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

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
f_t Current Gain Bandwidth Product	$V_{CE} = -20\text{V}$ $I_C = -10\text{mA}$ $f = 100\text{MHz}$	250			MHz
C_{ob} Output Capacitance	$V_{CB} = -5\text{V}$ $I_E = 0$ $f = 100\text{kHz}$			4.5	pF
h_{oe} Output Admittance	$V_{CE} = -10\text{V}$ $I_C = -10\text{mA}$	100		400	μmos
h_{fe} Small Signal Current Gain	$f = 1\text{kHz}$	3		60	—
N_F Noise Figure	$V_{CE} = -5\text{V}$ $I_C = -100\mu\text{A}$ $f = 1\text{kHz}$ $R_S = 1\text{k}\Omega$			4	dB

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_d Delay Time	$V_{CC} = 3\text{V}$ $V_{BE} = 0.5\text{V}$			35	ns
t_r Rise Time	$I_C = 10\text{mA}$ $I_{B1} = 1\text{mA}$			35	
t_f Fall Time	$V_{CC} = 3\text{V}$ $I_C = 10\text{mA}$ $I_{B1} = I_{B2} = 1\text{mA}$			75	

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