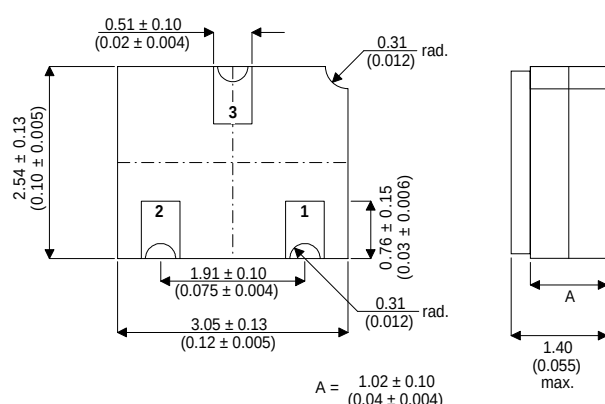


GENERAL PURPOSE, SMALL SIGNAL NPN TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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

APPLICATIONS:

Hermetically sealed surface mount version of the popular 2N918 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	30V
V_{CEO}	Collector – Emitter Voltage	15V
V_{EBO}	Emitter – Base Voltage	3V
I_C	Collector Current	50mA
P_D	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	200mW
	Derate above 25°C	1.14mW / $^\circ\text{C}$
P_D	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	300mW
	Derate above 25°C	1.71mW / $^\circ\text{C}$
T_{STG}, T_J	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
$V_{\text{CEO(sus)}}$ Collector – Emitter Sustaining Voltage	$I_C = 3\text{mA}$ $I_B = 0$	15			
$V_{\text{(BR)CBO}}$ Collector – Base Breakdown Voltage	$I_C = 1\mu\text{A}$ $I_E = 0$	30			V
$V_{\text{(BR)EBO}}$ Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	3			
I_{CBO} Collector – Base Cut-off Current	$V_{\text{CB}} = 25\text{V}$ $I_E = 0$			0.010	μA
$V_{\text{CE(sat)}}$ Collector – Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 1\text{mA}$			0.4	V
$V_{\text{BE(sat)}}$ Base – Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 1\text{mA}$			1.0	
h_{FE} DC Current Gain	$I_C = 500\mu\text{A}$ $V_{\text{CE}} = 10\text{V}$	10			—
	$I_C = 3\text{mA}$ $V_{\text{CE}} = 1\text{V}$	20		200	
	$I_C = 10\text{mA}$ $V_{\text{CE}} = 10\text{V}$	20			
f_{T} Current Gain Bandwidth Product	$I_C = 4\text{mA}$ $V_{\text{CE}} = 10\text{V}$ $f = 100\text{MHz}$	600			MHz
C_{ob} Output Capacitance	$I_E = 0$ $f = 140\text{kHz}$	$V_{\text{CB}} = 10\text{V}$		1.7	pF
		$V_{\text{CB}} = 0$		3.0	
C_{ib} Input Capacitance	$V_{\text{EB}} = 0.5\text{V}$ $f = 140\text{kHz}$	$I_C = 0$		2.0	pF
NF Noise Figure	$I_C = 1\text{mA}$ $V_{\text{CE}} = 6\text{V}$ $R_G = 400\Omega$ $f = 60\text{MHz}$			6.0	dB
G_{pe} Amplifier Power Gain	$I_C = 6\text{mA}$ $V_{\text{CB}} = 12\text{V}$ $f = 200\text{MHz}$	15			
P_{O} Power Output	$I_C = 8\text{mA}$ $V_{\text{CB}} = 15\text{V}$	30			mW
η Collector Efficiency	$f = 500\text{MHz}$	25			%