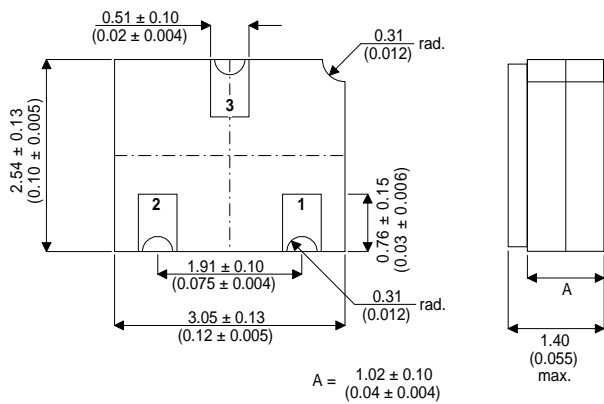


**GENERAL PURPOSE, SMALL SIGNAL  
NPN TRANSISTOR IN A  
HERMETICALLY SEALED  
CERAMIC SURFACE MOUNT PACKAGE  
FOR HIGH RELIABILITY APPLICATIONS**

**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 $25^\circ\text{C}$	1.14mW / °C
$P_D$	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	300mW
	Derate above $25^\circ\text{C}$	1.71mW / °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
$V_{\text{CEO(sus)}}$ 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			
$I_{\text{CBO}}$ Collector – Base Cut-off Current	$V_{\text{CB}} = 25\text{V}$ $I_E = 0$			0.010	$\mu\text{A}$
$V_{\text{CE(sat)}}$ 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	
$h_{\text{FE}}$ 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			
$f_{\text{T}}$ Current Gain Bandwidth Product	$I_C = 4\text{mA}$ $V_{\text{CE}} = 10\text{V}$ $f = 100\text{MHz}$	600			MHz
$C_{\text{ob}}$ Output Capacitance	$I_E = 0$ $f = 140\text{kHz}$	$V_{\text{CB}} = 10\text{V}$		1.7	$\mu\text{F}$
		$V_{\text{CB}} = 0$		3.0	
$C_{\text{ib}}$ Input Capacitance	$V_{\text{EB}} = 0.5\text{V}$ $f = 140\text{kHz}$			2.0	$\mu\text{F}$
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
$G_{\text{pe}}$ Amplifier Power Gain	$I_C = 6\text{mA}$ $V_{\text{CB}} = 12\text{V}$ $f = 200\text{MHz}$	15			
$P_{\text{O}}$ Power Output	$I_C = 8\text{mA}$ $V_{\text{CB}} = 15\text{V}$	30			mW
$\eta$ Collector Efficiency	$f = 500\text{MHz}$	25			%