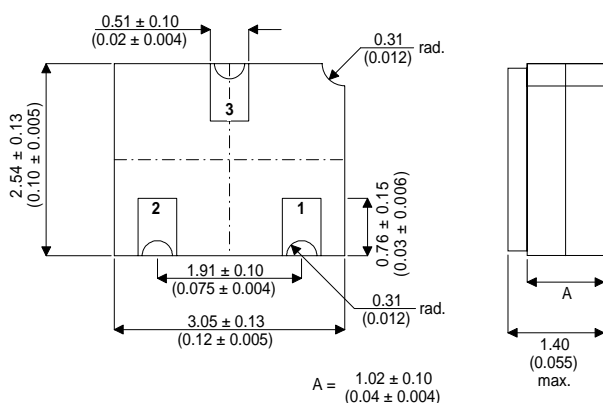


GENERAL PURPOSE PNP TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	-40V
V_{CEO}	Collector – Emitter Voltage	-50V
V_{EBO}	Emitter – Base Voltage	-5.0V
I_C	Collector Current	-200mA
P_D	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	0.36W
	Derate above 25°C	2.06mW / $^\circ\text{C}$
P_D	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	1.2W
	Derate above 25°C	6.9mW / $^\circ\text{C}$
T_{STG}, T_J	Operating and Storage Temperature Range	-65 to +200 $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction – Ambient	486 $^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction – Case	146 $^\circ\text{C}/\text{W}$

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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 $I_C = -10\text{mA}$ $I_B = 0$	-40			V	
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage $I_C = 10\mu\text{A}$ $I_E = 0$	-50				
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage $I_E = 10\mu\text{A}$ $I_C = 0$	-5				
I_{CEX}	Collector – Cut-off Current $V_{CE} = -40\text{V}$ $V_{EB} = -3\text{V}$			-20	nA	
I_{BL}	Base Cutoff Current $V_{CE} = -40\text{V}$ $V_{EB} = -3\text{V}$			-50		
ON CHARACTERISTICS						
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage $I_C = -10\text{mA}$ $I_B = -1\text{mA}$			-25	V	
		$I_C = -50\text{mA}$ $I_B = -5\text{mA}$		-0.5		
$V_{BE(sat)}^*$	Base – Emitter Saturation Voltage $I_C = -10\text{mA}$ $I_B = -1\text{mA}$	-0.6		-0.9	V	
		$I_C = -50\text{mA}$ $I_B = -5\text{mA}$		-1.2		
h_{FE}^*	DC Current Gain $V_{CE} = -1\text{V}$ $I_C = -0.1\text{mA}$	40			—	
		$V_{CE} = -1\text{V}$ $I_C = -1\text{mA}$	45			
		$V_{CE} = -1\text{V}$ $I_C = -10\text{mA}$	50	150		
SMALL SIGNAL CHARACTERISTICS						
f_t	Current Gain Bandwidth Product $V_{CE} = -20\text{V}$ $I_C = -10\text{mA}$ $f = 100\text{MHz}$	250			MHz	
C_{obo}	Output Capacitance $V_{CB} = -10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			6.0	pF	
C_{ibo}	Input Capacitance $V_{EB} = -1.0\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			8.0	pF	
h_{ie}	Input Impedance	1.0		6.0	k Ω	
h_{re}	Voltage Feedback Ratio $V_{CE} = -10\text{V}$ $I_C = -1.0\text{mA}$			10	$\times 10^{-4}$	
h_{fe}	Small Signal Current Gain $f = 1.0\text{KHz}$	50		300	—	
h_{oe}	Output Admittance	4.0		40	μhos	
N_F	Noise Figure $V_{CE} = -5\text{V}$ $I_C = -100\mu\text{A}$ $f = 100\text{Hz}$ $R_S = -1\text{k}\Omega$			6	dB	
$r_b'C_C$	Collector Base Time Constant $V_{CE} = -20\text{V}$ $I_C = -100\text{mA}$ $f = 131.8\text{MHz}$			250	ps	
SWITCHING CHARACTERISTICS						
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_s	Storage Time $V_{CC} = -3\text{V}$ $I_C = -10\text{mA}$			175		
t_f	Fall Time $I_{B1} = I_{B1} = -1\text{mA}$			50		

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