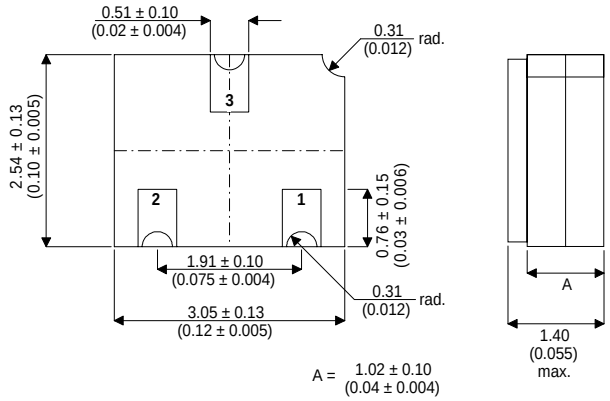
2N3250CSM

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 EPITAXIALPNP 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°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°C	0.36W
		Derate above 25°C	2.06mW / °C
P_D	Total Device Dissipation	@ T_A =25°C	1.2W
		Derate above 25°C	6.9mW / °C
T_{STG} , T_J	Operating and Storage Temperature Range		–65 to +200°C
$R_{\theta JA}$	Thermal Resistance Junction – Ambient		486°C/W
$R_{\theta JC}$	Thermal Resistance Junction – Case		146°C/W

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SEME LAB

2N3250CSM

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)CEO*}$	Collector – Emitter Breakdown Voltage	I_C = -10mA	I_B = 0	-40			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 10µA	I_E = 0	-50			
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 10µA	I_C = 0	-5			
I_{CEX}	Collector – Cut-off Current	V_{CE} = -40V	V_{EB} = -3V			-20	nA
I_{BL}	Base Cutoff Current	V_{CE} = -40V	V_{EB} = -3V			-50	
ON CHARACTERISTICS							
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_C = -10mA	I_B = -1mA			-25	V
		I_C = -50mA	I_B = - 5mA			-0.5	
$V_{BE(sat)*}$	Base – Emitter Saturation Voltage	I_C = -10mA	I_B = -1mA	-0.6		-0.9	V
		I_C = -50mA	I_B = - 5mA			-1.2	
h_{FE*}	DC Current Gain	V_{CE} = -1V	I_C = -0.1mA	40			—
		V_{CE} = -1V	I_C = -1mA	45			
		V_{CE} = -1V	I_C = -10mA	50		150	
SMALL SIGNAL CHARACTERISTICS							
f_t	Current Gain Bandwidth Product	V_{CE} = -20V f = 100MHz	I_C = -10mA	250			MHz
C_{obo}	Output Capacitance	V_{CB} = -10V f = 1.0MHz	I_E = 0			6.0	pF
C_{ibo}	Input Capacitance	V_{EB} = -1.0V f = 1.0MHz	I_C = 0			8.0	pF
h_{ie}	Input Impedance	V_{CE} = -10V f = 1.0KHz	I_C = -1.0mA	1.0		6.0	kΩ
h_{re}	Voltage Feedback Ratio					10	x 10^{-4}
h_{fe}	Small Signal Current Gain			50		300	—
h_{oe}	Output Admittance			4.0		40	µhmos
N_F	Noise Figure	V_{CE} = -5V f = 100Hz	I_C = -100µA R_S = -1kΩ			6	dB
rb'C_C	Collector Base Time Constant	V_{CE} = -20V f = 131.8MHz	I_C = -100mA			250	ps
SWITCHING CHARACTERISTICS							
t_d	Delay Time	V_{CC} = -3V	V_{BE} = 0.5V			35	ns
t_r	Rise Time	I_C = -10mA	I_{B1} = -1mA			35	
t_s	Storage Time	V_{CC} = -3V	I_C = -10mA			175	
t_f	Fall Time	I_{B1} = I_{B1} = -1mA				50	

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