

CERAMIC BASE SMD QUARTZ CRYSTAL

ABM11-0022-T3

2.0 x 1.6 x 0.55 mm
RoHS/RoHS II Compliant
MSL Level = N/A



Features

- Reference design for Silabs EFR32 Wireless Gecko Series 2
- Operating Temp Range: -40 ~ +95°C
- Frequency Tolerance @ +25°C: ±8ppm
- Frequency Stability over the Operating Temp. Range (ref. to +25°C): ±13ppm

Applications

- Internet of Things (IoT)
- Medical Devices
- Industrial Control & Automation
- Wireless collar
- Glucose Monitor
- LED Lighting

Key Standard Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency	39.000			MHz	
Operation Mode	Fundamental				
Operating Temperature	-40		+95	°C	
Storage Temperature	-40		+95	°C	
Frequency Tolerance @+25°C	-8		+8	ppm	
Frequency Stability over the Operating Temperature (ref. to 25°C)	-13		+13	ppm	
Equivalent series resistance (R1)			35	Ω	
Shunt capacitance (C0)			3.0	pF	
Load capacitance (CL)		10		pF	
Drive Level		10	100	μW	
Aging	-2		+2	ppm	@25°C±3°C First year
Insulation Resistance	500			M Ω	@ 100Vdc ± 15V

Options and Part Identification

ABM11-0022-□

Packaging
Blank: Bulk
T3: 3000pcs/reel



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REVISED: 03-13-24

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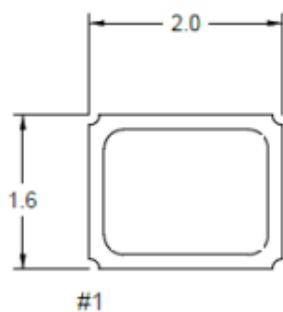
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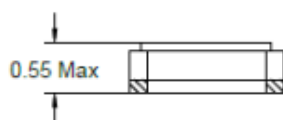
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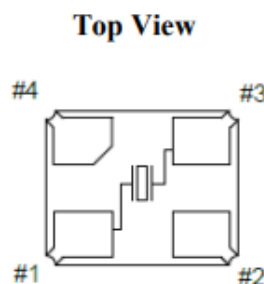
Mechanical Dimensions



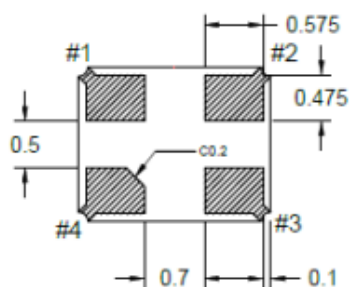
Top View



Side View

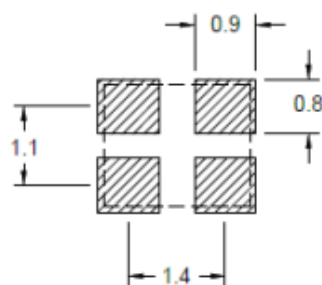


Top View



Bottom View

Recommended Land Pattern



Dimensions: mm



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Reflow Profile [JEDEC J-STD-020]

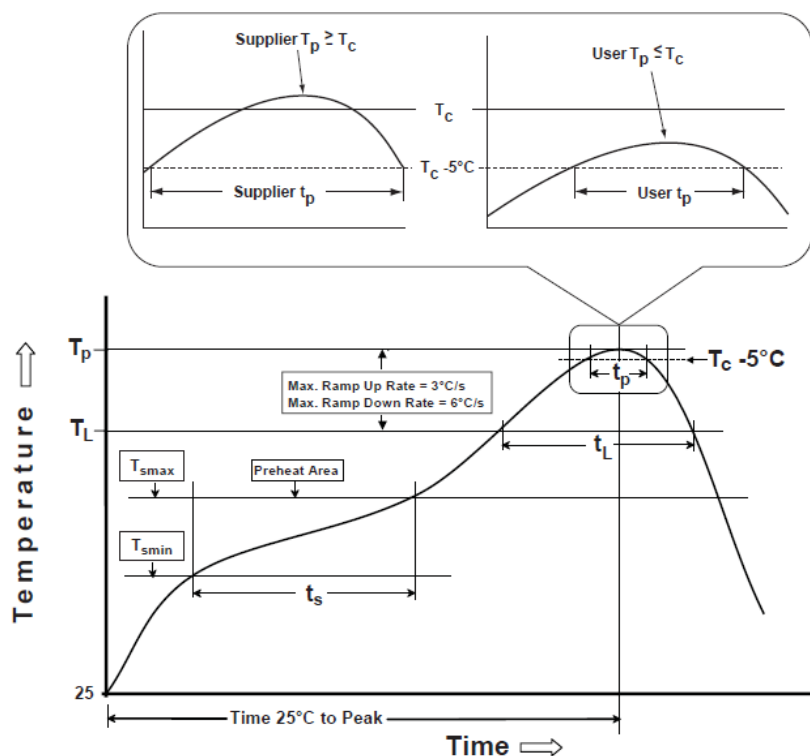


Table 1

SnPb Eutectic Process
Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process
Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smin} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_p)*	see Table 1	see Table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as supplier minimum and a user maximum.



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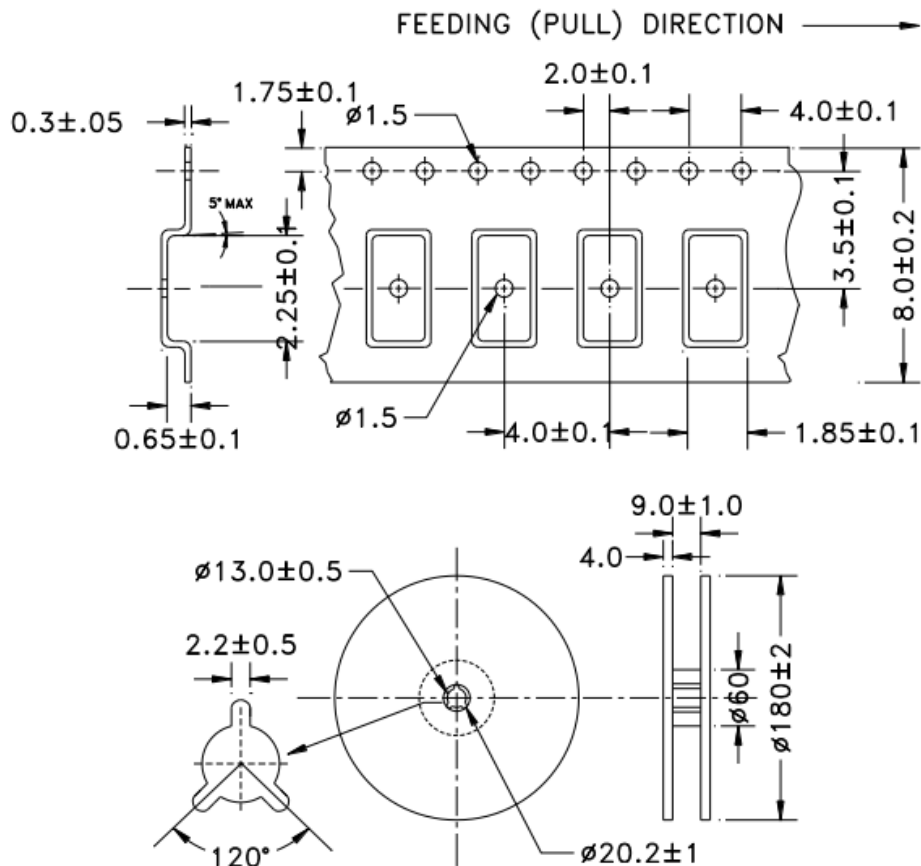
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Packaging

T3: Tape and reel (3,000pcs/reel)



Dimensions: mm

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