

GT-Cut Crystal Oscillator

ASEGT

Request Samples



Check Inventory



ESD Sensitive



3.2 x 2.5 x 0.85 mm

RoHS/RoHS II Compliant

MSL Level = 1

Features

- High operating temperature 200°C max
- Low height 0.85 mm max
- Tri-state function
- Low current consumption
- Suitable for RoHS reflow

Applications

- High temperature sensors and controllers
- Down-hole Oil and Gas Exploration and Guidance
- Geo-thermal Energy Generation
- Engine Sensor and Control
- Pressure sensing and industrial instrumentation

Key Electrical Specifications

Parameters	Minimum	Typical	Maximum	Unit	Notes
Frequency Range	1		150	MHz	
Operating Temperature	-40		+200	°C	See options
Storage Temperature	-40		+200	°C	See options
Overall Frequency Stability (1)	-50		+50	ppm	See options
Supply Voltage (Vdd)	-10%	1.8	+10%	V	
	-10%	2.5	+10%	V	
	-10%	3.3	+10%	V	
Supply Current (Idd)			15	mA	No load
Symmetry @ 1/2Vdd	45	50	55	%	
Rise and Fall Time (Tr/Tf)		1.5	5.0	ns	10% Vdd to 90% Vdd
Output Load			15	pF	CMOS
Output Voltage (VOH)	0.9* Vdd			V	
Output Voltage (VOL)			0.1* Vdd	V	
Standby Current			150	µA	No load
Tri-state function (Stand-by)	"1" (VIH ≥ 0.7*Vdd) or Open: Oscillation; "0" (VIL < 0.3*Vdd) : No oscillation/Hi Z				
Aging at 25°C (first year)	-3		+3	ppm	
Start-up Time			10	ms	

Note 1: Overall frequency stability includes initial frequency tolerance @25°C ± 3°C and stability over the operating temperature range.

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Options and Part Identification

ASEGT - MHz - -

Supply Voltage (Vdd)

Blank: 3.3V ±10%
2: 2.5V ±10%
3: 1.8V ±10%

Packaging

Blank: Bulk
T: 1000pcs/Reel
T3: 3000pcs/Reel

Frequency in MHz

e.g. 24.576MHz
14.31818MHz
26.000MHz
100.000MHz

Operating Temp.

K: -40°C ~ +125°C
G: -40°C ~ +200°C

Overall Freq. Stability

C: ±50ppm
Q: ±100ppm

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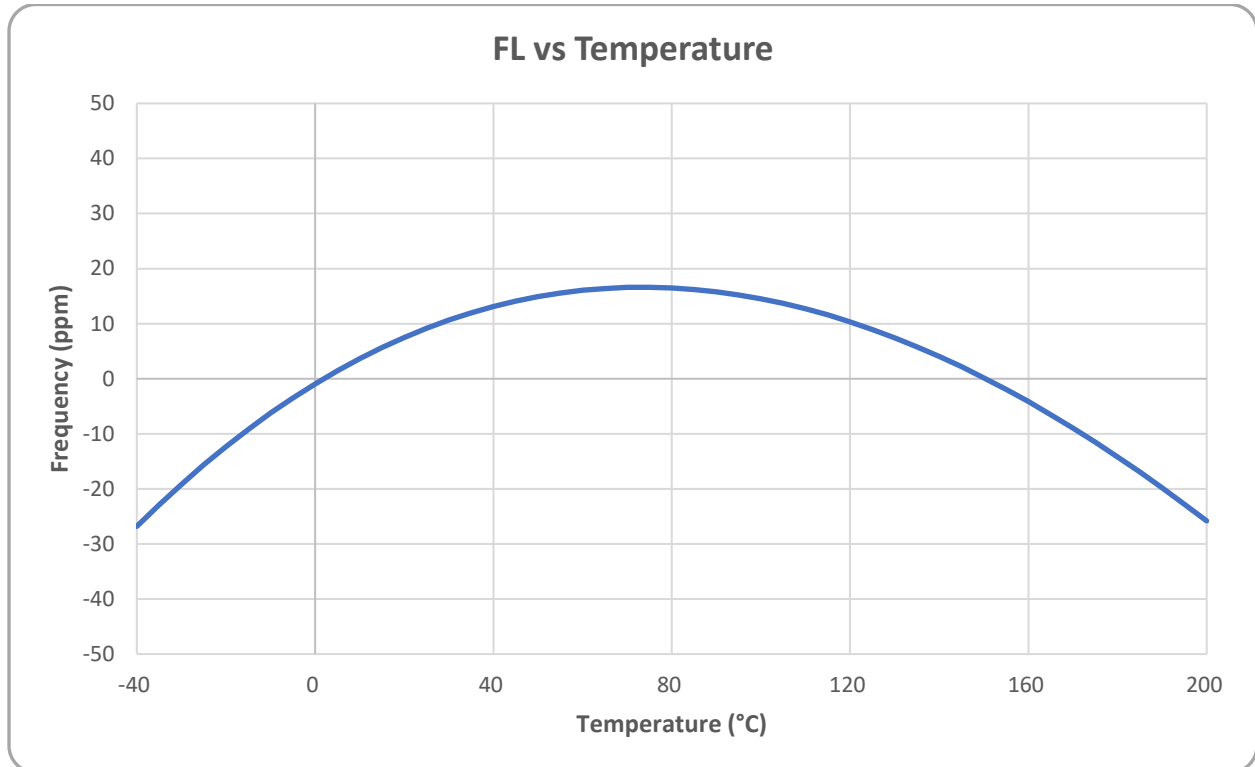


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Frequency vs Temperature characteristics (Typical, unnormalized)



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Reflow Profile [JEDEC J-STD-020]

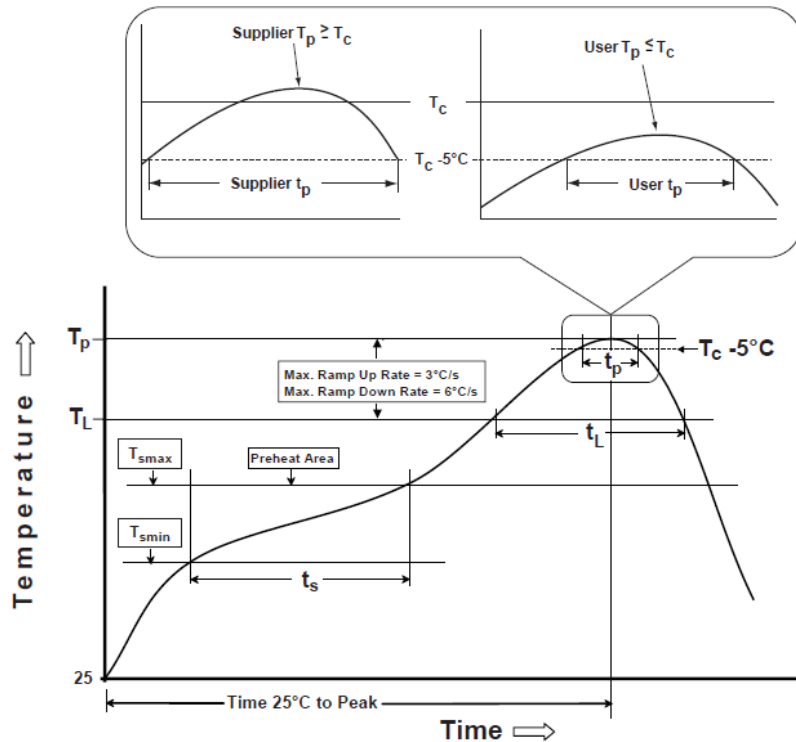


Table 1

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_{smax} 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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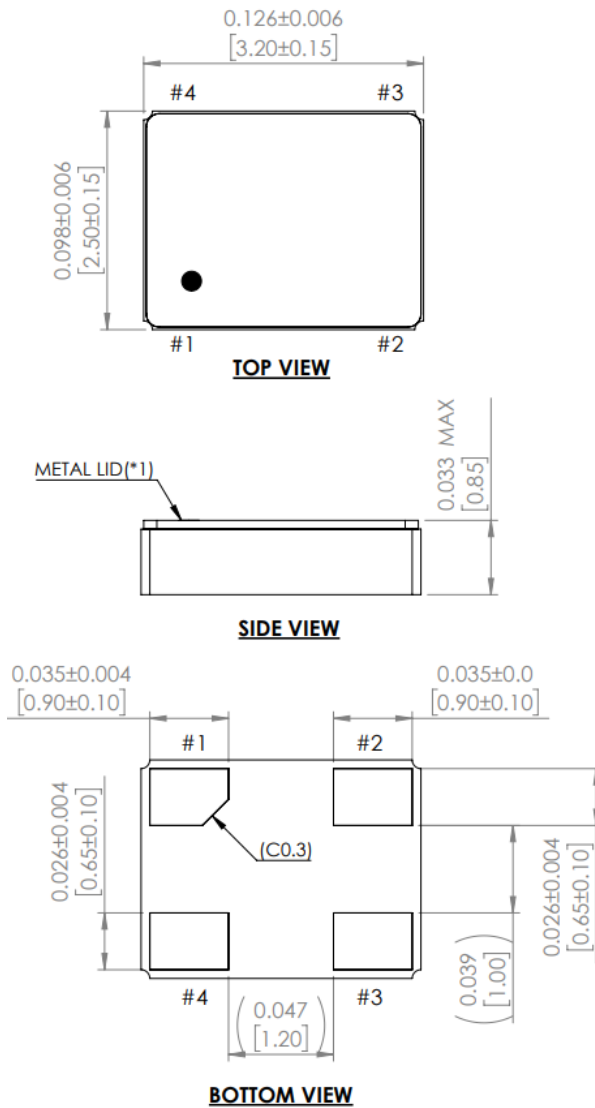
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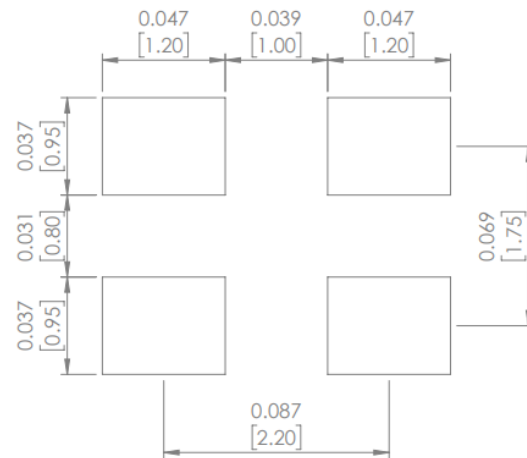
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Mechanical Dimensions



Recommended Land Pattern



Pin	Function
1	Tri-State (STBY)
2	GND
3	Output
4	Vdd

Note 1: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

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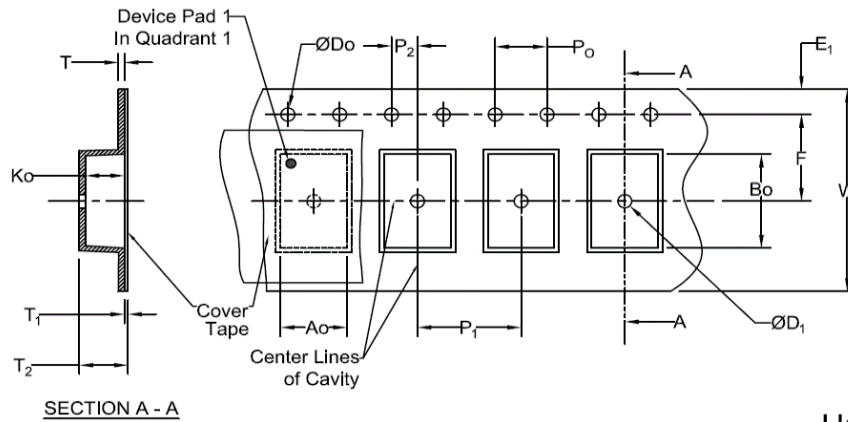
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Packaging

T: 1,000pcs/reel
T3: 3,000pcs/reel



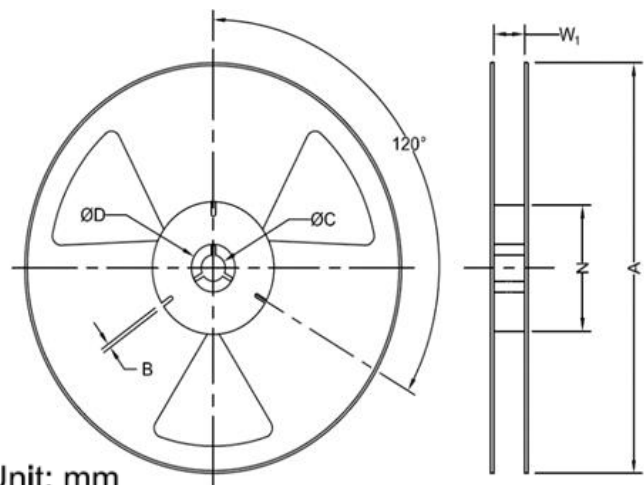
Unit: mm

Tape Specifications (mm)

Ao	Bo	Do	D ₁ (Min)	E ₁	F	Ko
*	*	1.5+0.1/-0.0	1.0	1.75±0.1	3.5±0.05	*
P ₁	P ₂	P ₀	T (Max)	T ₁ (Max)	T ₂ (Max)	W (Max)
4.0±0.1	2.0±0.05	4.0±0.1	0.6	0.1	2.5	8.3

Tape Specifications (mm)

A (Nom)	B (Min)	C (Min)
178	1.5	13.0+0.5/-0.2
D (Min)	N (Min)	*W ₁
20.2	50	8.4+1.5/-0.0



Unit: mm

*Note: Compliant to EIA-481

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