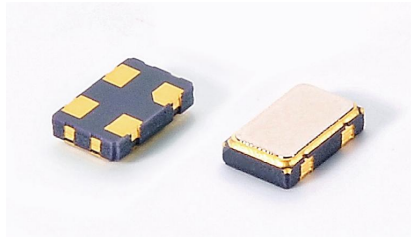


SMD QUARTZ CRYSTAL OSCILLATOR



4 Pad Version 5.0×3.2 mm

- ±20 ppm type available
- Excellent Reliability Performance
- EMI shielding possible by grounded lid
- Reflow soldering temperature: 260°C max
- Ceramic Seam Weld package



RoHS compliant

★ PARAMETERS

PARAMETERS	SPECIFICATION
Frequency Range	1 ~ 125MHz
Supply voltage	1.8V、2.5V、2.8V、3.3V、5.0V
Input Current	See Below
Frequency Stability Overall	±20ppm ~ ±50ppm
Operating Temp. Range	-10 ~ +60°C to -40 ~ +85°C
Storage Temp. Range	-55 ~ +125°C
Output Load	HCMOS/TTL (15pF~30pF/10TTL)
Symmetry	45% ~ 55% typ. (40% ~ 60% max.) at 0.5×Vdc
Start-up time	10mS max
Enable/ Disable Function	O/E or E/D

○ All specification subject change without notice.

★ FREQUENCY STABILITY VS. TEMPERATURE

Operation Temperature Range	Frequency Stability			
	±20ppm	±25ppm	±30ppm	±50ppm
-10°C~+60°C	○	●	○	○
-20°C~+70°C		○	●	○
-40°C~+85°C				●

● standard ○ available

★ Rise & Fall TIME MAX.

Frequency	Rise & Fall Time	Note
1.0~9.9 MHz	6nS max	rise time: 0.1 V _{DC} ~ 0.9 V _{DC} fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
10.0~39.9 MHz	5nS max	
40.0~80.9 MHz	4nS max	

★ DIMENSIONS& LAND PATTERN LAYOUT (Unit: mm)

The diagram illustrates the mechanical and electrical specifications of a component. It includes three main views: a top view, a side view, and a pin layout diagram.

Top View Dimensions:

- Width: 5.0 ± 0.2
- Height: 3.2 ± 0.2
- Maximum Thickness: 1.2 max

Side View Dimensions:

- Maximum Thickness: 1.2 max

Pin Layout Diagram:

- Four pins are labeled: #1, #2, #3, and #4.
- Pin #1 is located at the top left, Pin #2 at the top right, Pin #3 at the bottom right, and Pin #4 at the bottom left.
- Pin #1 and #2 are spaced 1.20 apart.
- Pin #3 and #4 are spaced 1.2 apart.
- The distance between the top and bottom rows of pins is 1.0 .

Pin Connection Table:

Pin	Connection
1	E/D
2	GND
3	Output
4	V _{DC}

Recommended Land Pattern:

- The land pattern shows the recommended dimensions for the pads.
- Pad width: 2.54
- Pad height: 2.20
- Pad spacing (horizontal): 1.6
- Pad spacing (vertical): 1.4

★ PART NUMBER GUIDE

e.g. FXO12.000MAA3SM5-50D (*SM5=5.0×3.2 SMD TYPE)

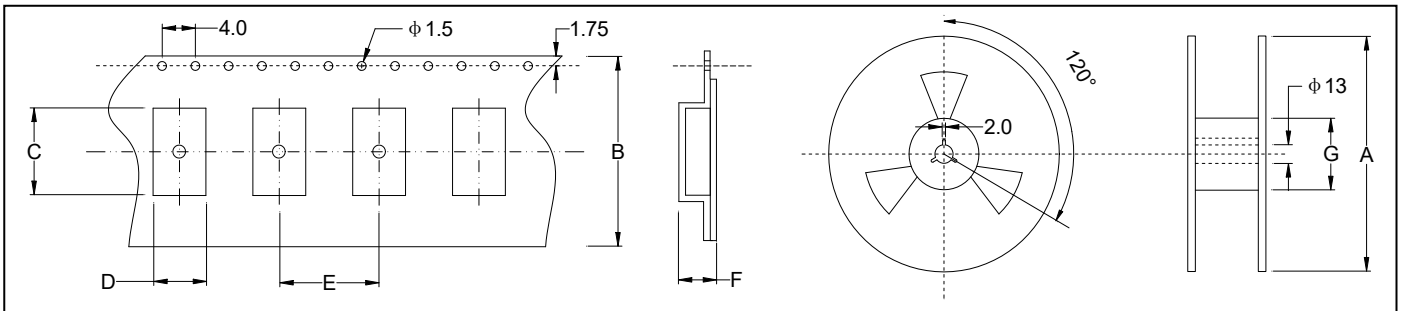
	Quartz Crystal Oscillator	Frequency	Supply voltage	Package	Frequency Stability ppm	Operating Temp. Range
F	XO	12.000	3.3	SM5	50	D

Definition	Description	Definition	Description
Frequency Stability	A: $\pm 25\text{ppm}$	Operating Temp.	A: $0\sim+70^{\circ}\text{C}$
	B: $\pm 50\text{ppm}$		B: $-20\sim+70^{\circ}\text{C}$
	C: $\pm 100\text{ppm}$		C: $-30\sim+85^{\circ}\text{C}$
	D: Customer specified		D: $-40\sim+85^{\circ}\text{C}$
			E: Customer specified

★ INPUT CURRENT

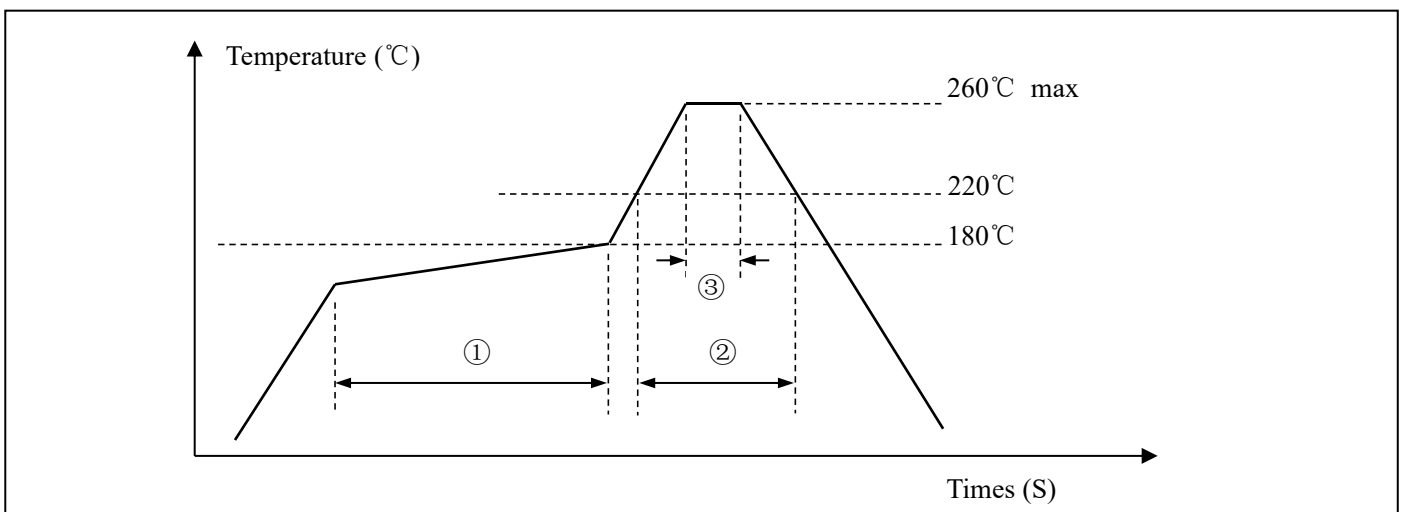
Vdc=5.0V				Vdc=3.5V			
15pF load		30pF load		15pF load		30pF load	
1.0 ~ 19.9 MHz	4 mA	1.0 ~ 19.9 MHz	6 mA	1.0 ~ 19.9 MHz	2 mA	1.0 ~ 19.9 MHz	6 mA
20.0 ~ 39.9 MHz	7 mA	20.0 ~ 39.9 MHz	13 mA	20.0 ~ 39.9 MHz	3 mA	20.0 ~ 29.9 MHz	10 mA
40.0 ~ 59.9 MHz	19 mA	40.0 ~ 49.9 MHz	24 mA	40.0 ~ 59.9 MHz	10 mA	30.0 ~ 40.0 MHz	12 mA
60.0 ~ 79.9 MHz	24 mA	50.0 ~ 60.0 MHz	35 mA	60.0 ~ 80.0 MHz	12 mA		

★ TAPING SPECIFICATION (Unit: mm)



	A	B	C	D	E	F	G
OSC-SMD5032	178 ± 2.0	12.0 ± 0.3	3.55 ± 0.10	2.80 ± 0.10	4.0 ± 0.1	1.4 ± 0.1	60.5 ± 1.0
1000 pcs per reel							

★ REFLOW SOLDERING PROFILE



Pb free reflow A	①	Preheat	$160\sim 180^{\circ}\text{C}$	120sec. max
	②	Primary heat	220°C	60sec. max
	③	Peak	260°C	10sec. max.