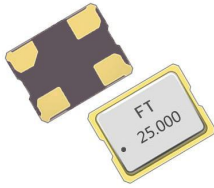


SMD QUARTZ CRYSTAL OSCILLATOR

4 Pad Version 3.2×2.5 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, 32.768KHz
Supply voltage	1.8V、2.5V、2.8V、3.3V
Input Current	See Below
Frequency Stability Overall	±20ppm~±50ppm
Operating Temp. Range	-10~+60°C to -40~+85°C, (-40~+125°C available)
Storage Temp. Range	-55~+125°C
Output Load	HCMOS 15pF typ.
Symmetry	45% ~ 55% typ. (40% ~ 60% max.) at 0.5×V _{DD}
Start-up time	10mS max
Enable/ Disable Function	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
2.0~9.9 MHz	6nS max	rise time: 0.1 V _{DD} ~ 0.9 V _{DD}
10.0~39.9 MHz	5nS max	fall time: 0.9 V _{DD} ~ 0.1 V _{DD}
40.0~125.0 MHz	4nS max	

★ DIMENSIONS & LAND PATTERN LAYOUT (Unit: mm)

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

Recommended land Pattern

★ PART NUMBER GUIDE

e.g. FXO12.000M3.3SM3-50D (*SM2=3.2×2.5 SMD TYPE)

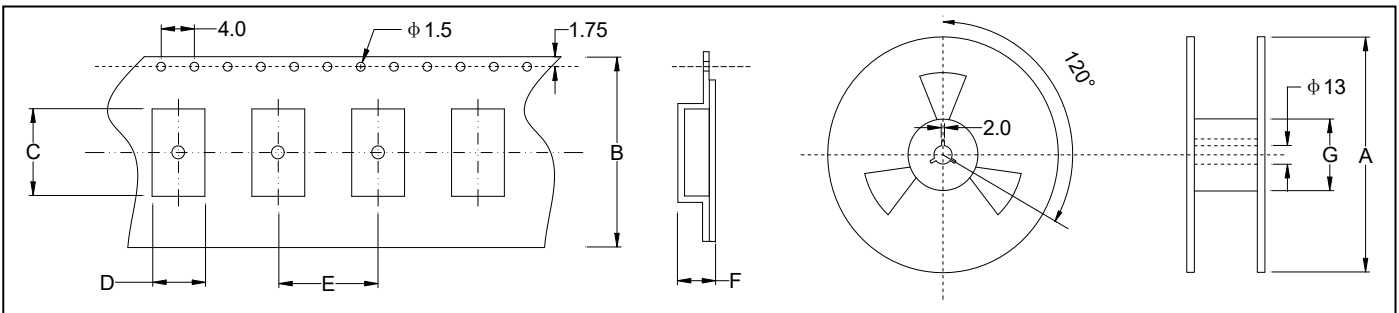
Logo	Quartz Crystal Oscillator	Frequency Hz	Supply voltage V _{DD}	Package	Frequency Stability ppm	Operating Temp. Range
F	XO	12.000M	3.3	SM3	50	D

Definition	Description	
Operating Temperature Range	A: -10~+60°C	B: -20~+70°C
	C: -30~+80°C	D: -40~+85°C
	E: -30~+105°C	F: -40~+105°C
	G: -40~+125°C	S: Customer specified

★ INPUT CURRENT

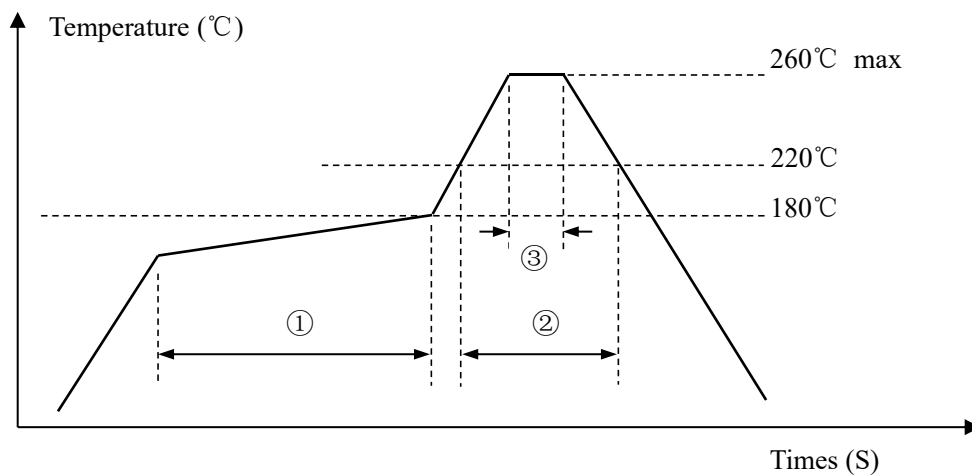
$V_{DD}=3.3V$				$V_{DD}=1.8V$			
15pF load		30pF load		15pF load		30pF load	
1.0 ~ 19.9 MHz	4 mA	1.0 ~ 19.9 MHz	6 mA	1.0 ~ 19.9 MHz	2 mA	1.0 ~ 19.9 MHz	6 mA
20.0 ~ 39.9 MHz	7 mA	20.0 ~ 39.9 MHz	13 mA	20.0 ~ 39.9 MHz	3 mA	20.0 ~ 29.9 MHz	10 mA
40.0 ~ 59.9 MHz	19 mA	40.0 ~ 49.9 MHz	24 mA	40.0 ~ 59.9 MHz	10 mA	30.0 ~ 40.0 MHz	12 mA
60.0 ~ 125.0 MHz	24 mA	50.0 ~ 125.0 MHz	35 mA	60.0 ~ 125.0 MHz	12 mA		

★ TAPING SPECIFICATION (Unit: mm)



	A	B	C	D	E	F	G
OSC-SMD3225	178 ± 2.0	8.0 ± 0.3	3.55 ± 0.10	2.80 ± 0.10	4.0 ± 0.1	1.4 ± 0.1	60.5 ± 1.0
3000 pcs per reel							

★ REFLOW SOLDERING PROFILE



Pb free reflow A	①	Preheat	160~180°C	120sec. max
	②	Primary heat	220°C	60sec. max
	③	Peak	260°C	10sec. max.