

DIP QUARTZ CRYSTAL RESONATOR



DIP Cylindrical Crystal MHz ϕ 3×9 mm

- 3 x 9 mm cylinder type
- Small size
- ± 20 ppm Standard
- With Insulation Sleeve Available



RoHS compliant

★ PARAMETERS

PARAMETERS	SPECIFICATION
Frequency Range	6.000~50.000MHz
Loading Capacitance	20pF Std. 7pF~33pF available
Drive Level	10 μ W (300 μ W Max)
Frequency Tolerance	± 10 ppm / ± 20 ppm (at 25 $^{\circ}$ C)
Equivalent Resistance	See Below
Frequency Stability	± 10 ppm~ ± 30 ppm
Operating Temp. Range:	0~+50 $^{\circ}$ C to -40~+85 $^{\circ}$ C
Storage Temp. Range:	-40~+85 $^{\circ}$ C
Aging (25 $^{\circ}$ C, First Year)	± 5 ppm max

⊙ All specification subject change without notice.

★ FREQUENCY STABILITY VS. TEMPERATURE

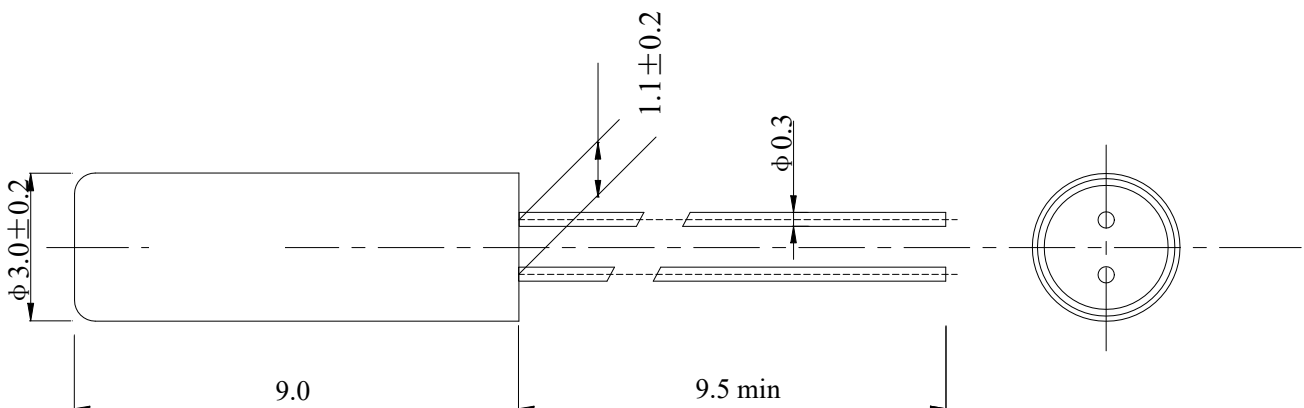
Operation Temperature Range	Frequency Stability			
	± 10 ppm	± 20 ppm	± 30 ppm	± 50 ppm
0 $^{\circ}$ C~+50 $^{\circ}$ C	○	●	○	○
-10 $^{\circ}$ C~+60 $^{\circ}$ C	○	●	○	○
-20 $^{\circ}$ C~+70 $^{\circ}$ C	○	○	●	○
-40 $^{\circ}$ C~+85 $^{\circ}$ C	○	○	○	●

● standard ○ available

★ ESR (SERIES RESISTANCE RS)

Frequency	Vibration Mode	ESR
4.000-5.999MHz	AT CUT/FUND.	120 Ω Max.
6.000-7.999MHz	AT CUT/FUND.	100 Ω Max.
8.000-9.999MHz	AT CUT/FUND.	80 Ω Max.
10.000-11.999MHz	AT CUT/FUND.	60 Ω Max.
12.000-15.999MHz	AT CUT/FUND.	50 Ω Max.
16.000-19.999MHz	AT CUT/FUND.	40 Ω Max.
20.000-33.000MHz	AT CUT/FUND.	30 Ω Max.
30.000-50.000MHz	AT 3rd /OT	100 Ω Max.

★ DIMENSIONS & LAND PATTERN LAYOUT (Unit: mm)





● Mounting of cylinder type products:

Soldering the body of the cylinder type crystal units with PCB must be avoided due to deteriorate the characteristics or damage the products. Rubber adhesive is recommended.

● Soldering

Lead wires should be soldered within 3 seconds with the soldering iron heated to a temperature no higher than 300°C

★ PART NUMBER GUIDE *e.g. FTX20.000M20A9-20/30B (*A9=AT 3.0×9.0mm)*

Logo	Quartz Crystal Resonator	Frequency Hz	Load Capacitance pF	Package	Frequency Tolerance ppm	Frequency Stability ppm	Operating Temp. Range
FT	X	20.000M	20	A9	20	30	B

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

★ WAVE SOLDERING PROFILE

