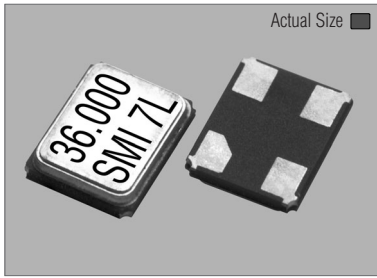
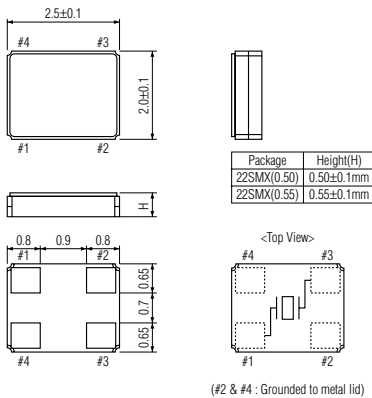


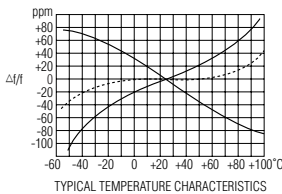
### 22SMX



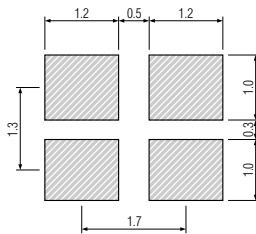
### 22SMX



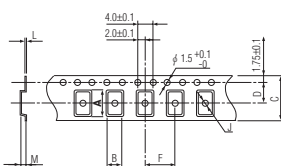
### AT-CUT



### SOLDERING PATTERN



### TAPE SPECIFICATIONS



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.8	2.3	8.0	3.5	4.0	1.0	0.25	0.75	180	3000pcs

### SPECIFICATIONS

- Package type ..... 22SMX
- Frequency range ..... 16.000 MHz to 80.000 MHz
- Frequency tolerance ..... O : ±10 ppm at +25°C ±3°C  
Q : ±15 ppm at +25°C ±3°C  
R : ±20 ppm at +25°C ±3°C
- Temperature stability (referred to +25°C) ..... See table below

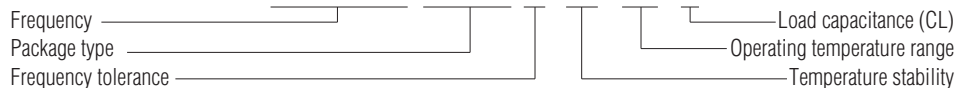
Ope. Temp. Range	Temperature Stability	PPM												
		±3.0 (FF)	±5.0 (JJ)	±7.5 (LL)	±10 (OO)	±15 (QQ)	±20 (RR)	±30 (TT)	±50 (XX)	±100 (CC)	±150 (GG)			
0~+45°C (edd)		○	○	○	○	○	○	○	○	○	○	○	○	○
0~+50°C (eed)		○	○	○	○	○	○	○	○	○	○	○	○	○
0~+60°C (egg)		○	○	○	○	○	○	○	○	○	○	○	○	○
0~+70°C (eii)		○	○	○	○	○	○	○	○	○	○	○	○	○
-10~+50°C (gee)			○	○	○	○	○	○	○	○	○	○	○	○
-10~+60°C (geg)			○	○	○	○	○	○	○	○	○	○	○	○
-10~+70°C (gii)			○	○	○	○	○	○	○	○	○	○	○	○
-10~+75°C (gij)				○	○	○	○	○	○	○	○	○	○	○
-20~+70°C (iii)				○	○	○	○	○	○	○	○	○	○	○
-20~+75°C (ijj)					○	○	○	○	○	○	○	○	○	○
-30~+75°C (kii)						○	○	○	○	○	○	○	○	○
-30~+80°C (kkk)							○	○	○	○	○	○	○	○
-30~+85°C (kll)								○	○	○	○	○	○	○
-35~+80°C (lkk)									○	○	○	○	○	○
-40~+85°C (mll)										○	○	○	○	○
-40~+90°C (mmm)											○	○	○	○
-40~+105°C (mpp)												○	○	○
-40~+125°C (mtt)													○	○

○: Available (The extremes depend on actual frequencies.)

- Equivalent series resistance (ESR) ..... 80 Ω max. (16.000 MHz to 20.000 MHz)  
70 Ω max. (20.000 MHz to 30.000 MHz)  
50 Ω max. (30.000 MHz to 80.000 MHz)
- Shunt capacitance (Co) ..... 5 pF max.
- Drive level (P) ..... 100 μW max. (10 μW for testing)
- Aging ..... ±2 ppm max. at +25°C ±3°C for first year
- Cut/Oscillation mode ..... AT-Cut/Fundamental
- Reflow condition ..... 10 seconds max. at +250°C ±10°C

### PART NUMBERING GUIDE

48.000MHz 22SMX Q / TT / mll / 8



### EXAMPLE

SMI PART NO.	Frequency	Package	Frequency tolerance
48.000 MHz 22SMX Q/TT/ml/8	48.000 MHz	22SMX	Q = ±15 ppm
18.000 MHz 22SMX R/JJ/egg/10	18.000 MHz	22SMX	R = ±20 ppm
Temperature stability	Operating temperature range	Load capacitance	
TT = ±30 ppm	mll = -40°C to +85°C	CL = 8 pF	
JJ = ±5.0 ppm	egg = 0°C to +60°C	CL = 10 pF	

### PACKAGE DATA

Item	Package	22SMX
Lid		Metal
Base		Ceramic
Sealing		Seam/EB
Terminal		Tungsten(metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant(Pb-free)