

XTAL

CLK OSC

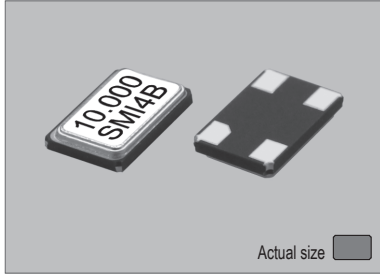
VCXO

TCXO

OCXO

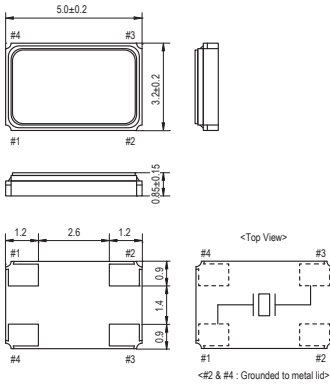
MCF

**53SMX(B)**

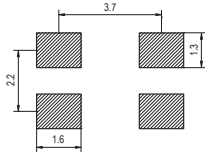


Actual size  
0.0238 gm (wt.)

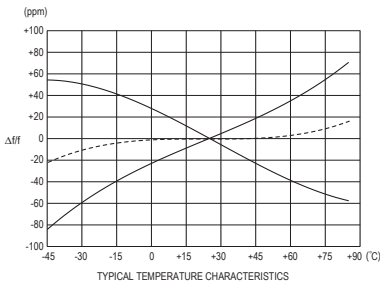
**53SMX(B)**



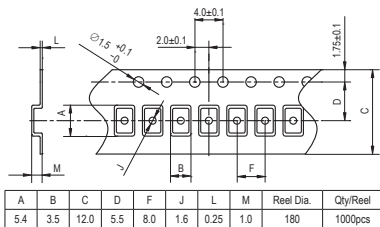
**SOLDERING PATTERN**



**AT-CUT**



**TAPE SPECIFICATIONS**



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
5.4	3.5	12.0	5.5	8.0	1.6	0.25	1.0	180	1000pcs

**CUSTOM SPECIFICATIONS**

Item	Specifications
Package type	53SMX(B)
Frequency range	10.000 MHz to 300.000 MHz
Frequency tolerance (at +25°C ±3°C)	O : ±10 ppm Q : ±15 ppm R : ±20 ppm T : ±30 ppm
Temperature stability (referred to +25°C)	

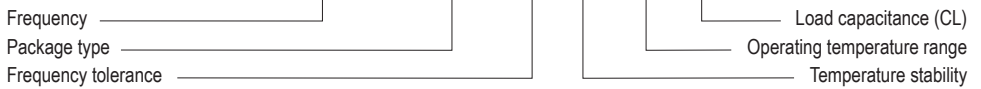
Temp. Stability(ppm)	±3.0	±5.0	±7.5	±10.0	±15.0	±20.0	±30.0	±50.0	±100.0	±150.0
Opn. Temperature Range	FF	JJ	LL	OO	QQ	RR	TT	XX	CC1	GG1
0°C to +45°C (edd)	○	○	○	○	○	○	○	○	○	○
0°C to +50°C (eee)	○	○	○	○	○	○	○	○	○	○
0°C to +60°C (egg)	○	○	○	○	○	○	○	○	○	○
0°C to +70°C (eii)		○	○	○	○	○	○	○	○	○
-10°C to +50°C (gee)		○	○	○	○	○	○	○	○	○
-10°C to +60°C (ggg)		○	○	○	○	○	○	○	○	○
-10°C to +70°C (gii)		○	○	○	○	○	○	○	○	○
-10°C to +75°C (gjj)			○	○	○	○	○	○	○	○
-20°C to +70°C (iii)			○	○	○	○	○	○	○	○
-20°C to +75°C (ijj)			○	○	○	○	○	○	○	○
-30°C to +75°C (kjj)				○	○	○	○	○	○	○
-30°C to +80°C (kkk)				○	○	○	○	○	○	○
-30°C to +85°C (kll)				○	○	○	○	○	○	○
-35°C to +80°C (lkk)					○	○	○	○	○	○
-40°C to +85°C (mll)					○	○	○	○	○	○
-40°C to +90°C (mmm)					○	○	○	○	○	○
-40°C to +105°C (mpp)						○	○	○	○	○
-40°C to +125°C (mitt)							○	○	○	○

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

Equivalent series resistance (ESR)	60 Ω max. / 10.000 MHz to 11.000 MHz (Fundamental) 50 Ω max. / 11.000 MHz to 12.000 MHz (Fundamental) 40 Ω max. / 12.000 MHz to 70.000 MHz (Fundamental) 80 Ω max. / 60.000 MHz to 170.000 MHz (3rd overtone) 120 Ω max. / 170.000 MHz to 300.000 MHz (5th overtone)
Shunt capacitance (C0)	5 pF max.
Drive level (P)	100 μW max. (10 μW for testing)
Aging	±3 ppm max. at +25°C ±3°C for first year
Cut / Oscillation mode	AT-Cut / Fundamental / 10.000 MHz to 70.000 MHz AT-Cut / 3rd overtone / 60.000 MHz to 170.000 MHz AT-Cut / 5th overtone / 170.000 MHz to 300.000 MHz
Reflow condition	10 seconds max. at +250°C ±10°C

**PART NUMBERING GUIDE**

**13.000MHz 53SMX(B) O / OO / kkk / 10**



**Example**

SMI Part No.	Frequency	Package	Frequency Tolerance	Temperature Stability	Operating Temperature Range	Load Capacitance
13.000MHz 53SMX(B) O/OO/kkk/10	13.000 MHz	53SMX(B)	O = ±10 ppm	OO = ±10 ppm	kkk = -30°C to +80°C	CL = 10 pF
15.360MHz 53SMX(B) Q/LL/ggg/9	15.360 MHz	53SMX(B)	Q = ±15 ppm	LL = ±7.5 ppm	ggg = -10°C to +60°C	CL = 9 pF

**PACKAGE DATA**

Item	Package	53SMX(B)
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)