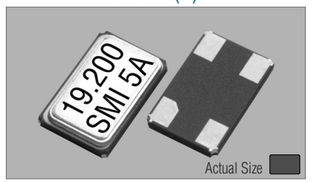
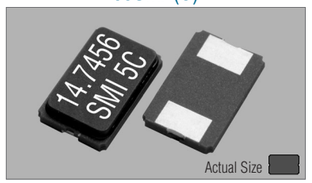
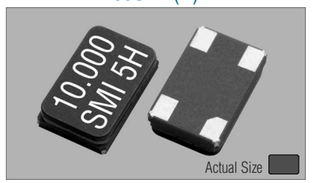
53SMX(B)



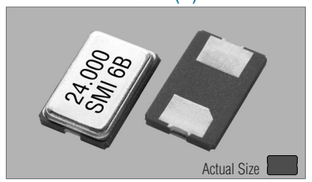
53SMX(C)



53SMX(D)



53SMX(E)



STANDARD SPECIFICATIONS

1. Package type ..... 53SMX(B), 53SMX(C), 53SMX(D) & 53SMX(E)
2. Frequency range ..... 53SMX(B) : 10.000 MHz to 270.000 MHz
   53SMX(C) : 8.000 MHz to 55.000 MHz
   53SMX(D) : 10.000 MHz to 50.000 MHz
   53SMX(E) : 10.000 MHz to 50.000 MHz
3. Frequency tolerance ..... ±50 ppm at +25°C ±3°C
4. Temperature stability (referred to +25°C) ..... ±50 ppm over −20°C to +70°C
5. Load capacitance (CL) ..... 14 pF, Typical
6. Shunt capacitance (Co) ..... 5 pF max.
7. Drive level (P) ..... 100 μW max. (10 μW for testing)
8. Aging ..... ± 5 ppm max. at +25°C ±3°C per year
9. Cut/Oscillation mode ..... AT−Cut/Fundamental (8.000 MHz to 70.000 MHz)
   AT−Cut/3rd overtone (70.000 MHz to 180.000 MHz)
   AT−Cut/5th overtone (170.000 MHz to 270.000 MHz)
10. Reflow condition ..... 10 seconds max. at +250°C±10°C

PART NUMBERING GUIDE

53 M 143 — 14 (C)

- 53 — Package type
- M — Circuit calibration condition
- 143 — Frequency designator
- 14 — Load capacitance (CL)
- (C) — Package type

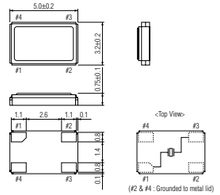
EXAMPLE

SMI PART NO.	Package	Circuit Calibration Condition	Frequency
53M143−14(C)	53(C) = 53SMX(C)	M = Parallel resonance CL = 14 pF	143 = 14.31818 MHz
53M320−16(B)	53(B) = 53SMX(B)	M = Parallel resonance CL = 16 pF	320 = 32.000 MHz
53S184(D)	53(D) = 53SMX(D)	S = Series resonance	184 = 18.4320 MHz
53M360-18(E)	53(E) = 53SMX(E)	M = Parallel resonance CL = 18 pF	360 = 36.000 MHz

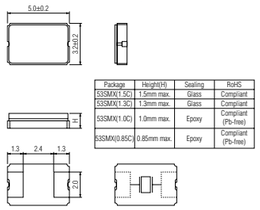
PACKAGE DATA

Item \ Package	53SMX(B)	53SMX(C)	53SMX(D)	53SMX(E)
Lid	Metal	Ceramic	Ceramic	Metal
Base	Ceramic	Ceramic	Ceramic	Ceramic
Sealing	Seam	See drawing	Glass	Seam
Terminal	Tungsten (metalized)	Tungsten (metalized)	Tungsten (metalized)	Tungsten (metalized)
Terminal plating	Gold / Nickel (surface) / (under)	Gold / Nickel (surface) / (under)	Gold / Nickel (surface) / (under)	Gold / Nickel (surface) / (under)
RoHS	Compliant(Pb-free)	See drawing	Compliant	Compliant (Pb-free)

53SMX(B)

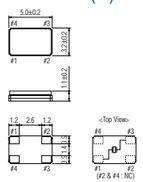


53SMX(C)

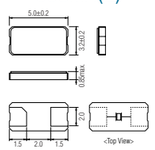


Package	Height(Hi)	Sealing	RoHS
53SMX(1.5C)	1.5mm max.	Glass	Compliant
53SMX(1.3C)	1.3mm max.	Glass	Compliant
53SMX(1.0C)	1.0mm max.	Epoxy	Compliant (Pb-free)
53SMX(0.85C)	0.85mm max.	Epoxy	Compliant (Pb-free)

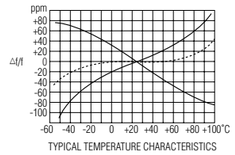
53SMX(D)



53SMX(E)

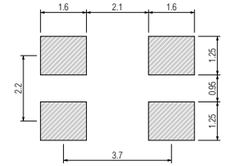


AT-CUT

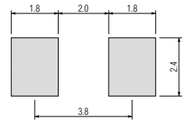


TYPICAL TEMPERATURE CHARACTERISTICS

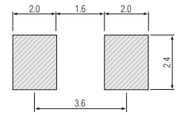
SOLDERING PATTERN
for 53SMX(B) & 53SMX(D)



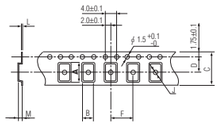
SOLDERING PATTERN
for 53SMX(C)



SOLDERING PATTERN
for 53SMX(E)

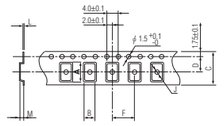


TAPE SPECIFICATIONS
for 53SMX(B) & 53SMX(E)



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	330 (180)	3000pcs (1000pcs)

TAPE SPECIFICATIONS
for 53SMX(C)



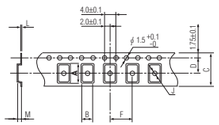
A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
5.5	3.7	12.0	5.5	8.0	—	0.3	1.4	178	1000pcs

53SMX STANDARD FREQUENCIES

FREQUENCY MHz	FREQUENCY DESIGNATOR	MAX EQUIVALENT SERIES RESISTANCE OHMS(Ω) ESR
8.000000	080	300
9.843750	0984	150
10.000000	100	120
12.000000	120	80
12.288000	122	80
12.504000	125	80
12.600000	126	80
12.800000	128	80
13.000000	130	80
13.560000	1356	80
14.318180	143	80
14.400000	144	80
14.745600	147	80
15.000000	150	80
15.360000	153	80
15.600000	156	80
15.968000	159	80
16.000000	160	60
16.050000	1605	60
16.367000	16367	60
16.368000	16368	60
16.370000	1637	60
16.384000	163	60
16.800000	168	60
16.900000	169	60
16.934400	1693	60
17.328000	173	60
17.581400	175	60
17.734475	1773	60
18.000000	180	60
18.414000	1841	60
18.432000	184	60
19.069929	1906	60
19.200000	192	60
19.312000	193	60
19.312500	193125	60
19.440000	194	60
19.680000	1968	60
19.800000	198	60
20.000000	200	40
20.500000	205	40
20.945000	209	40
21.250000	2125	40

FREQUENCY MHz	FREQUENCY DESIGNATOR	MAX EQUIVALENT SERIES RESISTANCE OHMS(Ω) ESR
22.000000	220	40
22.118400	221	40
22.168000	2216	40
22.579200	225	40
22.579600	225796	40
24.000000	240	40
24.288000	242	40
24.504200	24504	40
24.576000	245	40
25.000000	250	40
26.000000	260	40
26.973100	2697	40
27.000000	270	40
27.120000	271	40
27.648000	276	40
27.820800	2782	40
28.224000	282	40
28.375000	283	40
28.500000	285	40
28.636363	2863	40
29.491200	294	40
29.498900	294989	40
30.000000	300	40
30.080000	3008	40
32.000000	320	40
32.110000	321	40
32.720000	327	40
32.768000	32768	40
33.330000	3333	40
33.868800	338	40
34.368000	343	40
35.328000	353	40
35.468950	354	40
36.000000	360	40
40.000000	400	40
40.500000	405	40
41.850000	418	40
45.000000	450	40
45.158400	451	40
48.000000	480	40
54.000000	540	40

TAPE SPECIFICATIONS
for 53SMX(D)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
5.5	3.7	12.0	5.5	8.0	1.5	0.3	1.65	178	1000pcs