32SMX(A)

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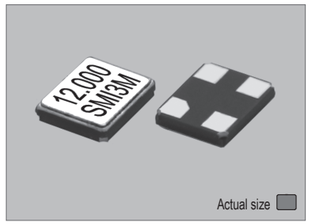
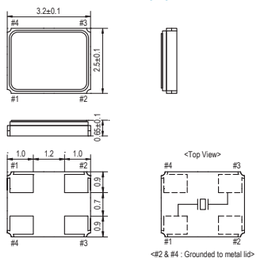
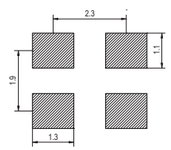


0.0165 gm (wt.)

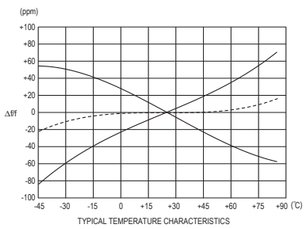
32SMX(A)



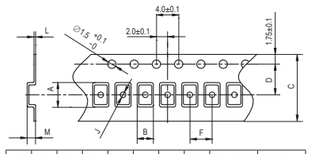
SOLDERING PATTERN



AT-CUT



TAPE SPECIFICATIONS



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
3.5	2.8	8.0	3.5	4.0	1.05	0.25	1.0	180	3000pcs (1000pcs)

STANDARD SPECIFICATIONS

Item	Specifications
Package type	32SMX(A)
Frequency range	9.843 MHz to 60.000 MHz (Fundamental) 60.000 MHz to 150.000 MHz (3rd overtone)
Frequency tolerance	±30 ppm at +25˚C ±3˚C
Temperature stability (referred to +25˚C)	±30 ppm over −20˚C to +70˚C
Load capacitance (CL)	10 pF, Typical (Fundamental) Series resonance (3rd overtone)
Shunt capacitance (C0)	5 pF max.
Drive level (P)	100 µW max. (10 µW for testing)
Aging	±5 ppm max. at +25˚C ±3˚C per year
Cut / Oscillation mode	AT-Cut / Fundamental / 9.843MHz to 60.000MHz AT-Cut / 3rd overtone / 60.000MHz to 150.000MHz
Reflow condition	10 seconds max. at +250˚C ±10˚C

PART NUMBERING GUIDE

32 M 130 - 10 (A)

- 32 — Package type
- M — Circuit calibration condition
- 130 — Frequency designator
- 10 — Load capacitance (CL)
- (A) — Package type

Example

SMI Part No.	Package	Circuit Calibration Condition	Frequency
32M130-10(A)	32(A) = 32SMX(A)	M = Parallel resonance CL = 10 pF	130 = 13.000 MHz

PACKAGE DATA

Item \ Package	32SMX(A)
Lid	Metal
Base	Ceramic
Sealing	Seam
Terminal	Tungsten (metalized)
Terminal plating	Gold / Nickel (surface) / (under)
RoHS	Compliant (Pb-free)

32SMX(A) STANDARD FREQUENCIES

Frequency MHz	Frequency Designator	Max. Equivalent Series Resistance Ohms(Ω) ESR	Frequency MHz	Frequency Designator	Max. Equivalent Series Resistance Ohms(Ω) ESR
12.000000	120	100	25.400000	254	50
12.288000	122	100	25.804800	258	50
12.500000	125	100	26.000000	260	50
12.679170	126	100	27.000000	270	50
13.000000	130	80	27.120000	271	50
13.08148	1308	80	27.456000	2745	50
13.500000	135	80	28.224000	2822	50
13.560000	1356	80	28.375000	283	50
14.318180	143	80	28.636360	2863636	50
14.745600	147	80	30.000000	300	50
15.360000	153	80	32.000000	320	50
16.000000	160	80	32.256000	3225	50
16.368000	16368	80	32.736000	3273	50
16.369000	16369	80	32.768000	32768	50
16.384000	163	80	33.000000	330	50
16.670000	1667	80	33.330000	3333	50
16.756990	1675	80	33.333300	333333	50
16.920000	1692	80	33.600000	336	50
16.934400	1693	80	33.750000	337	50
17.634160	1763	80	33.868800	338	50
18.432000	184	80	36.000000	360	50
18.870000	188	80	36.480000	3648	50
19.069928	19069928	80	38.000000	380	50
19.200000	192	80	38.400000	384	50
19.440000	194	80	39.000000	390	50
19.500000	195	80	40.000000	400	50
19.660800	196	80	40.500000	405	50
19.680000	1968	80	40.659300	4065	50
19.800000	198	80	41.000000	410	50
20.000000	200	50	41.600000	416	50
20.480000	2048	50	44.000000	440	50
20.500000	205	50	48.000000	480	50
21.948718	2194	50	49.152000	491	50
22.000000	220	50	50.000000	500	50
22.118400	221	50	52.000000	520	50
22.579200	2257	50	54.000000	540	50
23.104000	23104	50	55.466700	5546	50
24.000000	240	50	67.500000	675	140 (3rd OT)
24.190660	2419	50	114.285000	114.285	100 (3rd OT)
24.545400	2454	50	141.302083	141.302	100 (3rd OT)
24.576000	245	50			
25.000000	250	50			