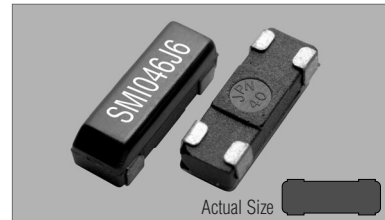


86SMX(MC)



86SMX(LPN)



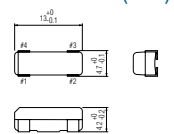
86SMX(MM)



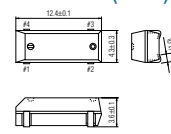
86SMX(CSM)



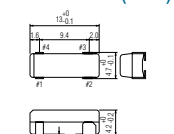
86SMX(MC)



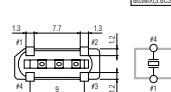
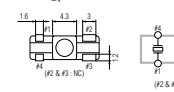
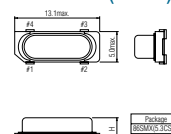
86SMX(LPN)



86SMX(MM)



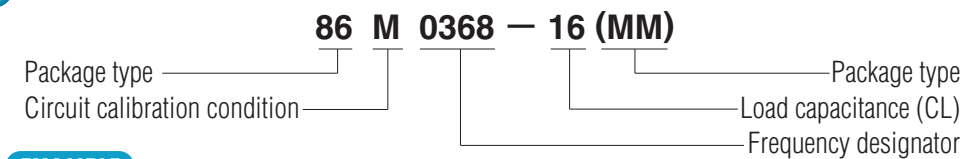
86SMX(CSM)



STANDARD SPECIFICATIONS

1. Package type 86SMX(MC), 86SMX(LPN), 86SMX(MM) & 86SMX(CSM)
2. Frequency range 3.579545 MHz to 60.000 MHz
3. Frequency tolerance ± 50 ppm at $+25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
4. Temperature stability (referred to $+25^{\circ}\text{C}$) ± 50 ppm over -20°C to $+70^{\circ}\text{C}$ (AT-Cut)
 ± 100 ppm over -10°C to $+60^{\circ}\text{C}$ (BT-Cut)
5. Load capacitance (CL) 16 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 $+25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ per year
9. Cut/Oscillation mode AT-Cut/Fundamental (3.579545 MHz to 40.000 MHz)
BT-Cut/Fundamental (32.00000 MHz to 50.000 MHz)
AT-Cut/3rd overtone (32.00000 MHz to 60.000 MHz)
10. Reflow condition 10 seconds max. at $+250^{\circ}\text{C} \pm 10^{\circ}\text{C}$

PART NUMBERING GUIDE

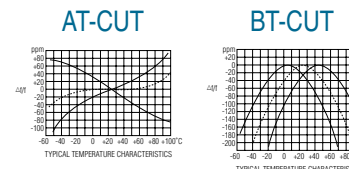


EXAMPLE

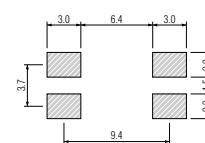
SMI PART NO.	Package	Circuit Calibration Condition	Frequency
86M0368-16(MM)	86(MM) = 86SMX(MM)	M = Parallel resonance CL = 16 pF	0368 = 3.68640 MHz
86M200-20(MC)	86(MC) = 86SMX(MC)	M = Parallel resonance CL = 20 pF	200 = 20.000 MHz
86M073-18(LPN)	86(LPN) = 86SMX(LPN)	M = Parallel resonance CL = 18 pF	073 = 7.37280 MHz
86S049(CSM)	86(CSM) = 86SMX(CSM)	S = Series resonance	049 = 4.91520 MHz

PACKAGE DATA

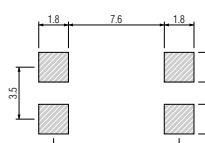
Item	Package	86SMX(MC)	86SMX(LPN)	86SMX(MM)	86SMX(CSM)
Outer package / Cover		Plastic	Plastic	Plastic	Metal
Base		n. a.	n. a.	n. a.	Metal
Insulator		n. a.	n. a.	n. a.	46 nylon
Sealing		Press-fit (3x10mm built-in)	Press-fit (3x10mm built-in)	Press-fit (3x10mm built-in)	Resistance
Terminal lead frame		42 alloy	42 alloy	42 alloy	42 alloy
Terminal plating		Tin / Nickel (surface) / (under)	SnCu / Cu (surface) / (under)	Tin / Nickel (surface) / (under)	Tin
RoHS		Compliant	Compliant	Compliant	Compliant(Pb-free)



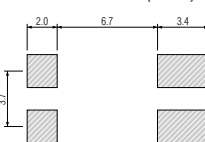
SOLDERING PATTERN for 86SMX(MC)



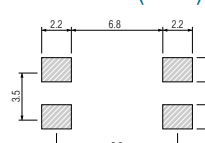
SOLDERING PATTERN for 86SMX(LPN)



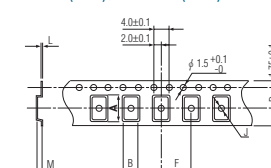
SOLDERING PATTERN for 86SMX(MM)



SOLDERING PATTERN for 86SMX(CSM)

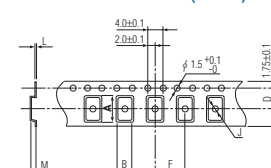


TAPE SPECIFICATIONS for 86SMX(MC), 86SMX(MM) & 86SMX(CSM)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
13.1	5.3	24.0	11.5	12.0	2.2	0.4	4.3	330	1000pcs

TAPE SPECIFICATIONS for 86SMX(LPN)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
12.8	4.8	24.0	11.5	12.0	2.2	0.4	3.9	330	1000pcs

86SMX STANDARD FREQUENCIES

FREQUENCY MHz	FREQUENCY DESIGNATOR	MAX EQUIVALENT SERIES RESISTANCE OHMS(Ω) ESR	FREQUENCY MHz	FREQUENCY DESIGNATOR	MAX EQUIVALENT SERIES RESISTANCE OHMS(Ω) ESR
3.579545	035	200	16.000000	160	50
3.600000	036	200	16.384000	163	50
3.686400	0368	200	16.588000	1658	50
4.000000	040	150	16.667000	166	50
4.096000	0409	150	16.934400	169	50
4.194304	041	150	17.734475	1773	50
4.433619	044	150	18.432000	184	50
4.608000	046	150	18.543000	185	50
4.915200	049	150	19.200000	192	50
5.000000	050	120	19.660800	196	50
5.068800	0506	120	20.000000	200	40
5.120000	0512	120	20.480000	204	40
5.256200	0525	120	20.940000	209	40
6.000000	060	100	21.425660	214	40
6.144000	061	100	22.118400	221	40
6.400000	064	100	23.438000	234	40
6.650000	0665	100	23.961600	239	40
7.372800	073	80	24.000000	240	40
7.441400	074	80	24.576000	245	40
7.621000	0762	80	25.000000	250	40
7.680000	076	80	27.000000	270	40
8.000000	080	80	28.224000	282	40
8.192000	081	80	29.491200	294	40
9.216000	092	60	30.000000	300	40
9.537500	095	60	32.000000	320	40
9.830400	098	60	33.000000	330	40
10.000000	100	60	33.868800	338	40
10.240000	1024	60	36.000000	360	100 (3rd OT)
11.000000	110	60	38.400000	384	100 (3rd OT)
11.059200	1105	60	38.880000	388	100 (3rd OT)
12.000000	120	60	39.321600	393	40 (BT-Cut)
12.288000	122	60	40.000000	400	40 (BT-Cut)
12.296000	1229	60	40.320000	403	100 (3rd OT)
12.800000	128	60	46.615000	466	100 (3rd OT)
13.105000	131	50	48.000000	480	100 (3rd OT)
13.500000	135	50	50.000000	500	100 (3rd OT)
13.560000	1356	50	52.416000	524	100 (3rd OT)
14.250000	142	50	56.448000	564	100 (3rd OT)
14.318180	143	50	60.000000	600	100 (3rd OT)
14.745600	147	50			
15.000000	150	50			
15.360000	153	50			