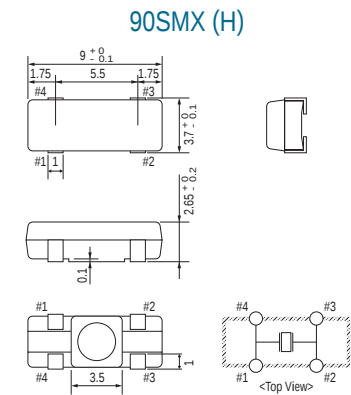
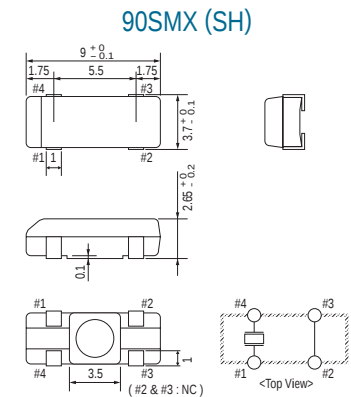
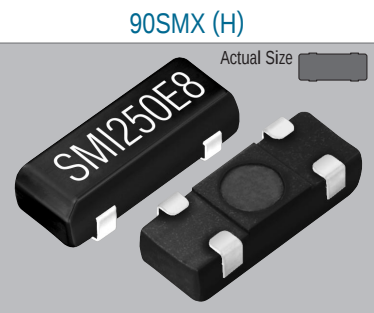
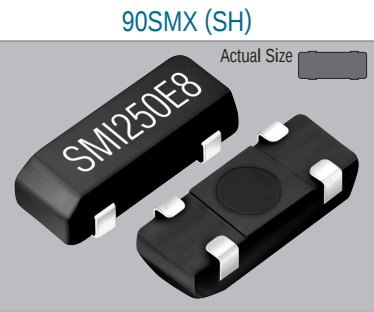
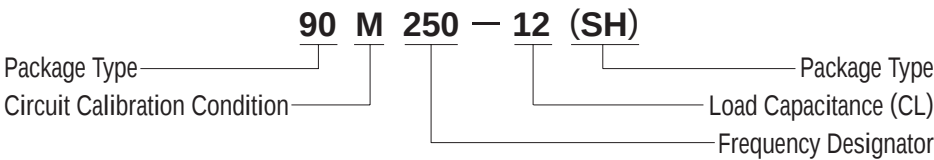




STANDARD SPECIFICATIONS

- 1. Package type 90SMX(SH) & 90SMX(H)
- 2. Frequency range12.000 MHz to 40.000 MHz
- 3. Calibration 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 $+70^{\circ}\text{C}$
- 5. Load capacitance16 pF
- 6. Shunt capacitance (Co) 5 pF max.
- 7. Drive level (P) 100 μW max.
- 8. Aging ± 5 ppm max. at $+25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ per year
- 9. Cut AT –Cut
- 10. Reflow soldering condition 10 seconds max. at $+235^{\circ}\text{C} \pm 5^{\circ}\text{C}$

PART NUMBERING GUIDE



EXAMPLE

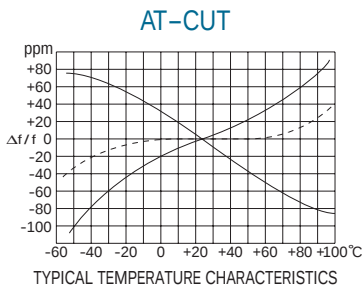
CIRCUIT CALIBRATION CONDITION	FREQUENCY	PACKAGE	SMI PART NO.
Parallel Resonance = M CL = 12 pF (Optional)	250 = 25.000 MHz	(SH)=90SMX(SH)	90M250–12(SH)
Parallel Resonance = M CL = 22 pF (Optional)	250 = 25.000 MHz	(H)=90SMX(H)	90M250–22(H)
Series Resonance = S (Optional)	250 = 25.000 MHz	(SH)=90SMX(SH)	90S250(SH)

HOW TO ORDER STANDARD SMI CRYSTALS

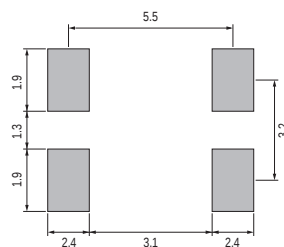
Order by SMI Part No.

PACKAGE DATA

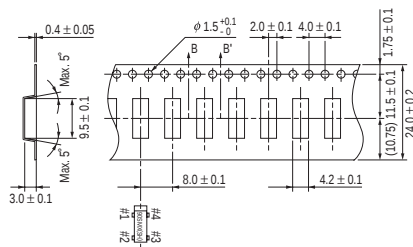
Item	Package	90SMX(SH)	90SMX(H)
OUTER PACKAGE		Plastic	Plastic
SEALING		Press–fit (2x6mm built–in)	Press–fit (2x6mm built–in)
TERMINAL PLATING		Solder	Solder



SOLDERING PATTERN



TAPE SPECIFICATIONS



2000pcs. per reel (330mm dia.)

90SMX STANDARD FREQUENCIES

FREQUENCY MHz	FREQUENCY DESIGNATOR	MAXIMUM EQUIVALENT SERIES RESISTANCE OHMS	FREQUENCY MHz	FREQUENCY DESIGNATOR	MAXIMUM EQUIVALENT SERIES RESISTANCE OHMS
12.000000	120	80	20.736000	207	60
12.800000	128	80	20.792000	2079	60
14.318180	143	80	24.000000	240	50
14.400000	144	80	24.000312	240003	50
14.745600	147	80	24.576000	245	50
15.000000	150	80	25.000000	250	50
15.206400	152	80	25.175000	251	50
16.000000	160	80	29.491200	294	50
16.000312	160003	80	30.000000	300	50
16.384000	163	80	31.334000	313	50
16.620000	1662	80	32.000000	320	50
16.667000	166	80	32.256000	3225	50
17.734475	1773	60	35.251200	352	50
18.432000	184	60	36.864000	368	50
19.200000	192	60	39.000000	390	50
19.660800	196	60	40.000000	400	50
20.000000	200	60			