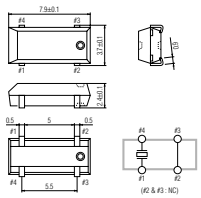
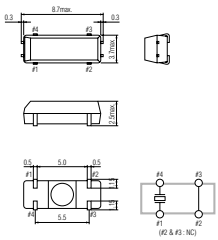
90SMX(N)

90SMX(S)

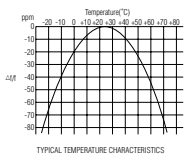
90SMX(N)



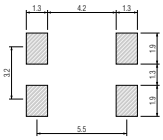
90SMX(S)



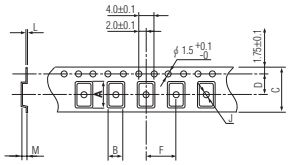
XY-CUT



SOLDERING PATTERN

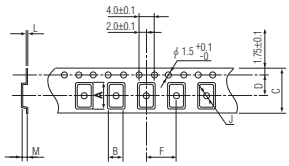


TAPE SPECIFICATIONS for 90SMX(N)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
8.3	4.0	16.0	7.5	8.0	1.6	0.3	2.7	330	3000pcs

TAPE SPECIFICATIONS for 90SMX(S)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
8.7	3.9	16.0	7.5	8.0	—	0.4	2.7	330	3000pcs

STANDARD SPECIFICATIONS

Item	Symbol	Specifications	
Part number	P/N	90M327(N)	90M327(S)
Package type		90SMX(N)	90SMX(S)
Nominal frequency	F	32.768 kHz	
Frequency tolerance at +25°C	Δ f/F	AAA : ±5 ppm AA : ±10 ppm A : ±15 ppm B : ±20 ppm **C : ±30 ppm standard** D : ±50 ppm	
Load capacitance	CL	12.5 pF : 90M327(N) & 90M327(S) 6 pF : 90M327–6(N) & 90M327–6(S)	
Equivalent series resistance	ESR	50 kΩ max.	
Drive level	P	1.0 μW max.	
Turnover temperature	Tt	+25°C ±5°C	
Temperature coefficient	β	–0.034 ppm/°C², Typical	–0.035 ppm/°C², Typical
Quality factor	Q	50000 min	
Shunt capacitance	Co	1.35 pF, Typical	1.0 pF, Typical
Motional capacitance	C1	0.003 pF, Typical	0.0019 pF, Typical
Capacitance ratio	γ	450, Typical	520, Typical
Aging (for first year)	Δ f/F	±3 ppm max. at +25°C ±3°C	
Insulation resistance	Ri	500MΩ min. at 100V DC ±15V	
Cut		XY–Cut	
Operating temperature range	To	–40°C to +85°C	
Storage temperature range	Ts	–55°C to +125°C	
Shock resistance	Δ f/F	±5 ppm max.	
Vibration resistance	Δ f/F	±5 ppm max.	
IR reflow resistance	Δ f/F	±10 ppm max.	
Reflow condition		10 seconds max. at +250°C±10°C	

PACKAGE DATA

Item \ Package	90SMX (N)	90SMX (S)
Outer Package	Plastic	Plastic
Sealing	Press-fit (2×6mm built-in)	Press-fit (2×6mm built-in)
Terminal lead frame	Copper alloy (CuSn)	42 alloy
Terminal plating	SnCu	Sn
RoHS	Compliant	Compliant