E9X Surface mount crystal resonator MHz



Photo is representative

Product features

- 0806 (2016 metric) package
- Moisture sensitivity level (MSL): 1
- Frequency range 16 MHz to 60 MHz
- Variety of frequency tolerance and stability options

Applications

- · Wireless applications
- · Cell phone
- · Modems
- Wireless LAN
- · Communication and test equipment
- · Laptop
- Network cameras
- Frequency converters

Environmental compliance and general specifications

- Operating temperature range: -40 °C to +85 °C
- Storage temperature range (component): -40 °C to +105 °C





Part number system

E	9	x	260	08	1	G	01
	Size code	Product category	Frequency	Load capacitance	Frequency tolerance	Frequency stability	Internal code
E = Eaton	9 = 2016 metric, 0806 imperial	X = crystal	260 = 26 MHz	08 = 8 pF 10 = 10 pF 12 = 12 pF	1 = ± 10 ppm 7 = ± 15 ppm 2 = ± 20 ppm 3 = ± 25 ppm 4 = ± 30 ppm 5 = ± 50 ppm	U = $\pm 10 \text{ ppm}$ G = $\pm 15 \text{ ppm}$ X = $\pm 20 \text{ ppm}$ W = $\pm 25 \text{ ppm}$ Y = $\pm 30 \text{ ppm}$ H = $\pm 35 \text{ ppm}$ Z = $\pm 50 \text{ ppm}$ Q = $\pm 100 \text{ ppm}$	01 - 99

Electrical specifications

Items	Parameters	
Frequency range	16 MHz to 60 MHz	
Oscillation mode	Fundamental	
Frequency tolerance at +25 °C	±10, ±15, ±20, ±30, ±50 ppm	
Frequency stability vs. operating temperature range	See table below	
Equivalent series resistance	See table below	
Drive level	10, 100, 200 µW or specify	
Insulation resistance	500 MΩ minimum at 100 Vdc	
Load capacitance	8, 10, 12 pF or specify	
Shunt capacitance (CO)	3 pF maximum or specify	
Aging at +25 °C	±3 ppm (first year)	

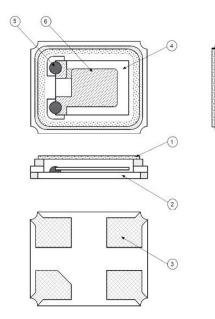
Frequency stability vs. operating temperature range table

ppm	±15	±20	±50
Operating temperature -40 °C to +85 °C	х	Х	х

Equivalent series resistance table

Frequency (MHz)	ESR (Ω) maximum	Oscillation mode
16 to 20	100	
20 to 32	80	Fundamental
32 to 54	50	Fundamental
54 to 60	30	

Construction



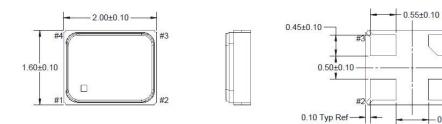
Item number	Component	Description
1	Cap (lid)	Kovar (Fe-Ni-Co)
2	Base (package)	Almina Ceramic (Al ₂ O ₃)
3	Pad (package)	Ni + Au
4	Crystal blank	SiO ₂
5	Conductive adhesive	Ag
6	Electrode	Cr + Ag

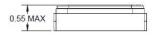
#4

#1

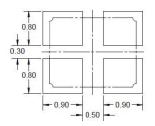
-0.70±0.10

Dimensions -mm

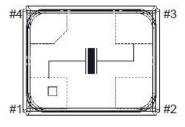




Pad layout -mm

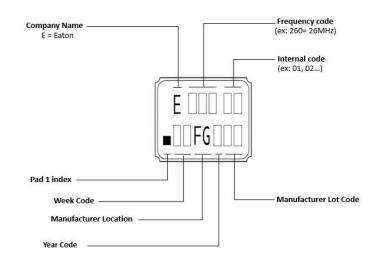


Function diagram



Pad	Function
1	ln / out
2	Ground
3	Out / in
4	Ground

Part marking

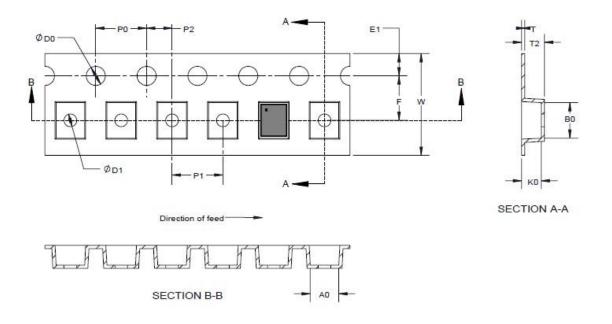


General specifications

Test item	According to	Test specification	
Gross leak	MIL-STD-883 method 1014	Standard sample for automatic gross leak detector, test pressure: 2 kg/cm ²	
Fine leak	MIL-STD-883 method 1014	Helium bombing 5.0 kg/cm ² for 2 hours	
Drop test	JIS C6701	150 cm height, free fall onto stainless plate 3 times	
Vibration	MIL-STD-202 method 201	Frequency range = 10 to 55 Hz Amplitude = 1.52 mm Test time of each perpendicular axis = 2 hours (x, y, z axis) Total test time = 6 hours	
Mechanical shock	MIL-STD-202 method 213	Half sine wave, 1000 g, 0.5 ms duration along three mutually perpendicular axes (\pm X, \pm Y, and \pm Z). Each direction for 3 shocks (total 18 shocks)	
Resistance to soldering heat	MIL-STD-202 method 210	Test temperature: +260 °C ±5 °C Test time: 10 seconds ±1 second	
J-STD-002 Immersion		Temperature: +245 °C ± 5 °C Immersing depth: 0.5 mm minimum Immersion time: 5 ± 1 seconds Flux: rosin resin methyl alcohol solvent (1:4)	
High temperature storage	MIL-STD-202 method 108	+125 °C ± 3 °C for 500 hours	
Low temperature storage	IEC 60068-2-1	-40 °C ± 3 °C for 500 hours	
Thermal shock	MIL-STD-883 method 1011.9	Total 100 cycles of the following temperature cycle.	
High temperature & humidity	JIS C5023	+85 °C ±3 °C, RH 85%, 500 hours	
High temperature operating life MIL-STD-202 method 108 1000 hours at +85 °C with VDD applied		1000 hours at +85 °C with VDD applied	

Packaging information - mm

3,000 parts on a 7 inch tape and reel (Drawing not to scale)



Dimension	Millimeter
W	8.00 ± 0.30
F	3.50 ± 0.05
E1	1.75 ± 0.10
PO	4.00 ± 0.10
P1	4.00 ± 0.10
P2	2.00 ± 0.05
DO	1.55 ± 0.05
D1	1.00 minimum
A0	1.90 ± 0.10
BO	2.30 ± 0.10
KO	0.65 ± 0.10
Т	0.25 ± 0.05
T2	1.15 maximum

Solder reflow profile

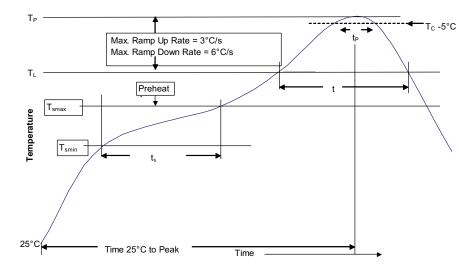


Table 1 - Standard SnPb solder (T_c)

Package thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2 - Lead (Pb) free solder (T_c)

Package thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Reference J-STD-020

Standard SnPb solder	Lead (Pb) free solder	
100 °C	150 °C	
150 °C	200 °C	
60-120 seconds	60-120 seconds	
3 °C/ second max.	3 °C/ second max.	
183 °C 60-150 seconds	217 °C 60-150 seconds	
Table 1	Table 2	
20 seconds*	30 seconds*	
6 °C/ second max.	6 °C/ second max.	
6 minutes max.	8 minutes max.	
	100 °C 150 °C 60-120 seconds 3 °C/ second max. 183 °C 60-150 seconds Table 1 20 seconds* 6 °C/ second max.	

 * Tolerance for peak profile temperature (T_D) is defined as a supplier minimum and a user maximum.

Manual solder

Powerina Business Worldwide

+350 °C maximum, 4 seconds maximum by soldering iron, 2 times maximum, generally manual, hand soldering is not recommended

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