

531 SMX-4 Series

5.0 x 3.2mm Crystal unit



RoHS & REACH compliant
Small package size



Parameters		Specification	Remarks
Frequency range	F_nom	8.0MHz ~ 54.0MHz	Fundamental
Frequency tolerance	F_tol	±10.0ppm ~ ±50.0ppm	
Frequency stability over operating temperature range	F_stb	±10.0ppm ~ ±50.0ppm	Table 2
Operating temperature range	T_use	-20°C ~ +70°C, -30°C ~ +85°C, -40°C ~ +85°C	Table 2
Storage temperature	T_stg	-55°C ~ +125°C	
Load capacitance	CL	8.0pF ~ 30.0pF, series	
Equivalent series resistance	ESR	Table 1	
Shunt capacitance	CO	7.0pF max	
Drive level	DL	300µW max	100µW typical
Frequency aging	F_age	±2.0ppm at 25°C, 1 st Year	For ±1.0ppm please enquire
Moisture sensitivity level	MSL	1 (unlimited)	
Electrostatic discharge	ESD	Not applicable	
Insulation resistance	IR	500MΩ min	At 100V DC

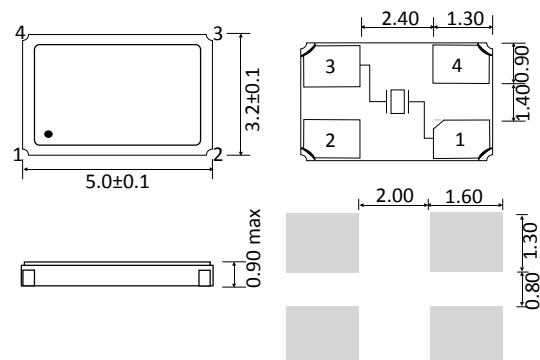
Table 1. Frequency range (MHz) vs ESR

8.0MHz ~ 9.999MHz	120Ω
10.0MHz ~ 11.999MHz	80Ω
12.0MHz ~ 23.999MHz	50Ω
24.0MHz ~ 54.000MHz	30Ω

Table 2. Frequency Stability vs Temperature

Temp. (°C)	Stability in ppm				
	±10	±15	±20	±30	±50
-20°C ~ 70°C	√	√	√	√	√
-30°C ~ 85°C	√	√	√	√	√
-40°C ~ 85°C	Enquire	√	√	√	√

Dimensions (mm)



Part number generation

QA	2700	G	K	L	GO	F	L		-PF
ACT Series Code	Frequency (MHz)	Frequency Tolerance (±ppm)	Frequency stability over temperature range (±ppm)	Operating Temperature Range (°C)	Load capacitance (CL -pF)	Frequency mode	Packaging (Tape & Reel)	Frequency aging	RoHS
QA	8MHz = 0800 27MHz = 2700 Note: Use the first 4 characters of the frequency in Hz i.e. 27MHz =27000000Hz If the frequency is 100MHz or higher then the first 5 characters are used	±10 = E ±15 = F ±20 = G ±30 = I ±50 = L	±10 = F ±15 = G ±20 = I ±30 = K ±50 = O	-20 ~ +70 = G -30 ~ +85 = L -40 ~ +85 = M	8 = GO 9 = JO 10 = KO 12 = OO 13 = YO 14 = ZO 16 = RO 18 = TO 20 = VO 22 = WO 30 = DA Series = SR	Fundamental = F	Loose = L 3000pcs = D	<u>Standard</u> ±2ppm = leave the Blank for standard aging <u>Non standard</u> ±1ppm = 1	RoHS = -pF

Note: It is important to suffix the above part number with full frequency required to give a completed part number as illustrated below.

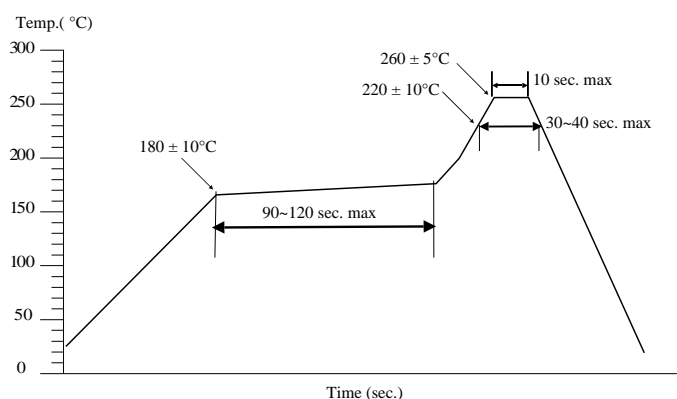
Full Example Part Number : QA2700GKLGOF-L-PF [27.000MHz] , QA2457GKLGOF-L-PF [24.576MHz], QA0800GKLGOF-L-PF [8.000MHz]

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Solder Reflow Profile



Additional information

Drawing control: (Internal use only)
Commodity code: 854160 00 00
Issue number: N1
Date: 1/02/2017
Internal reference: H2