ECS-3X10X, 3X9X

High Frequency Miniature Quartz Crystals

RoHS COMPLIANT

These products represent our selection of miniature tubular high frequency crystals. They feature outstanding shock/vibration resistance and environmental characteristics.

ECS-3X10X, 3X9X

- Cost Effective
- Excellent Aging
- Wide Frequency Range
- Excellent Reliability
- Pb Free/RoHS Compliant

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-3X10X	ECS-3X9X	UNITS
Frequency	F_O	3.50 ~ 9.83	4.00 ~ 70.00	MHz
Frequency Tolerance	@ +25°C	± 50		ppm
Frequency Stability	-10 ~ +60°C	± 50		ppm
Operating Temperature	Topr	-10 ~ +60		°C
Storage Temperature	Tstg	-40 ~ +85		°C
Load Capacitance	C_L	16 pF typ. (Customer Specified)		pF
Shunt Capacitance	C_0	5.0 max.		pF
Drive Level	DL	50 ~ 100		µW
Insulation Resistance	DC 100V±15V	500MΩ min.		MΩ
Aging (First Year)	@ +25°C ±3°C	±5 ppm max.		ppm

DIMENSIONS (mm)

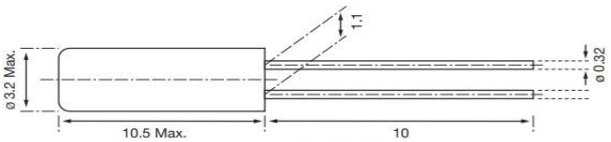

Figure 1) ECS-3x10X

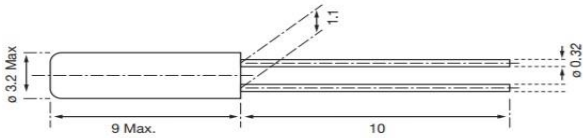

Figure 2) 3x9X

Frequency (MHz)	ESR Ω Max.	Mode
3.50 ~ 4.00	200	Fundamental
4.00 ~ 6.00	150	Fundamental
6.00 ~ 10.00	100	Fundamental
10.00 ~ 30.00	50	Fundamental
30.00 ~ 36.00	100	3rd Overtone
36.00 ~ 70.00	80	3rd Overtone

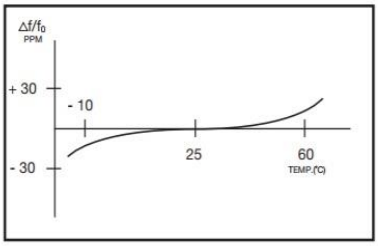

Figure 3) Frequency vs Temperature Curve

PART NUMBERING GUIDE:

Manufacturer		Frequency		Laod Capacitance*		Package Type**
ECS	-	35	-	16	-	10X
ECS	-	160	-	16	-	9X

* Load capacitance (xx = xx pF, S = Series

** Package type examples (10 = 3x10, 9X = 3x9)

Rev.2017

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SOLDER PROFILE
Peak solder Temp +260°C Max 10 sec Max.
2 Cycles Max.
MSL 1, Lead Finish Sn/Cu Matte

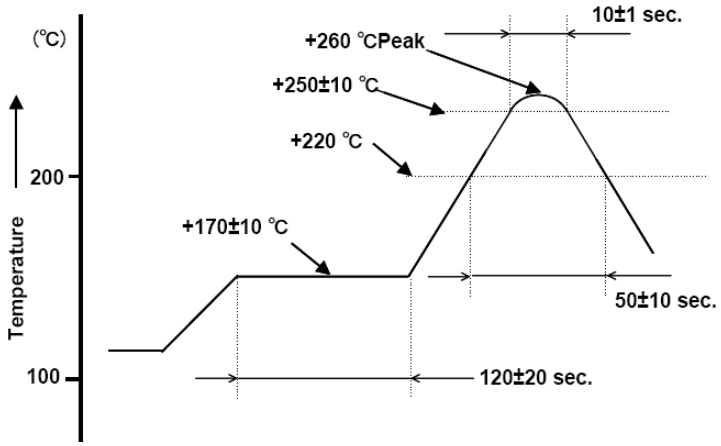

Figure 1) *Suggested Reflow Profile*

DEVELOPED FREQUENCIES ECS-3X10X	
Abbreviation	Frequency (MHZ)
035	3.579545
036	3.6864
040	4.000
049	4.9152
050	5.000
060	6.000
073	7.3728
080	8.000
081.92	8.192
098.3	9.8304

DEVELOPED FREQUENCIES ECS-3X9X	
Abbreviation	Frequency (MHZ)
100	10.000
110.5	11.0592
120	12.000
143	14.31818
147.4	14.7456
160	16.000
184	18.432
196.6	19.6608
200	20.000
240	24.000
245.7	24.576
250	25.000
270	27.000
320	32.000