

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

Request a Sample

ECS-3X10X, 3X9X



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

DIMENSIONS (mm)

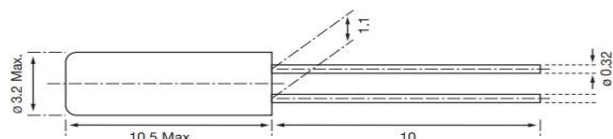


Figure 1) ECS-3x10X

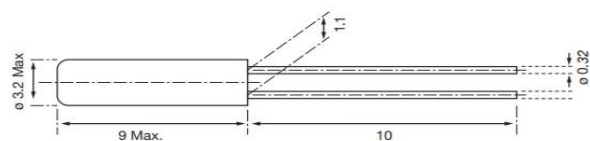


Figure 2) 3x9X

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECS-3X10X | ECS-3X9X | UNITS |
|-----------------------|------------------|------------------------------------|--------------|-------|
| Frequency | F ₀ | 3.50 ~ 9.83 | 4.00 ~ 70.00 | MHz |
| Frequency Tolerance | @ +25°C | ± 50 | | ppm |
| Frequency Stability | -10 ~ +60°C | ± 50 | | ppm |
| Operating Temperature | T _{opr} | -10 ~ +60 | | °C |
| Storage Temperature | T _{stg} | -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 |

| 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 | 3 rd Overtone |
| 36.00 ~ 70.00 | 80 | 3 rd Overtone |

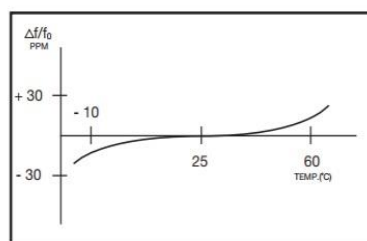


Figure 3) Frequency vs Temperature Curve

PART NUMBERING GUIDE:

| Manufacturer | Frequency | Load 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)

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

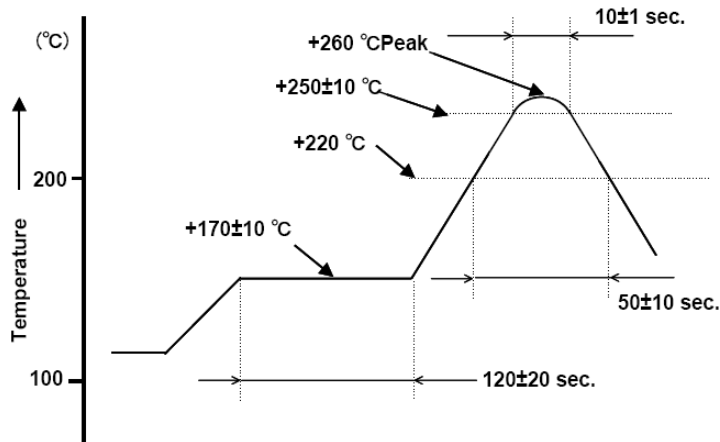


Figure 1) Suggested Reflow Profile

| 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 |