



QESM05

SMD 5.0x3.2 Crystal – Ceramic SMD packaged
Specification (Rev-C)

| | |
|---|-----|
| ▣ Electrical Characteristics | P01 |
| ▣ ESR vs. frequency range and Mode of vibration | P01 |
| ▣ Mechanical Characteristics | P01 |
| ▣ Ordering Information | P02 |
| ▣ Suggested Reflow Soldering profile | P02 |
| ▣ Tape Drawing..... | P03 |
| ▣ Reel Drawing | P03 |

QESM05

SMD 5.0x3.2 Crystal – Ceramic SMD packaged
Specification (rev-C)

September 01th, 2006

Electrical Characteristics

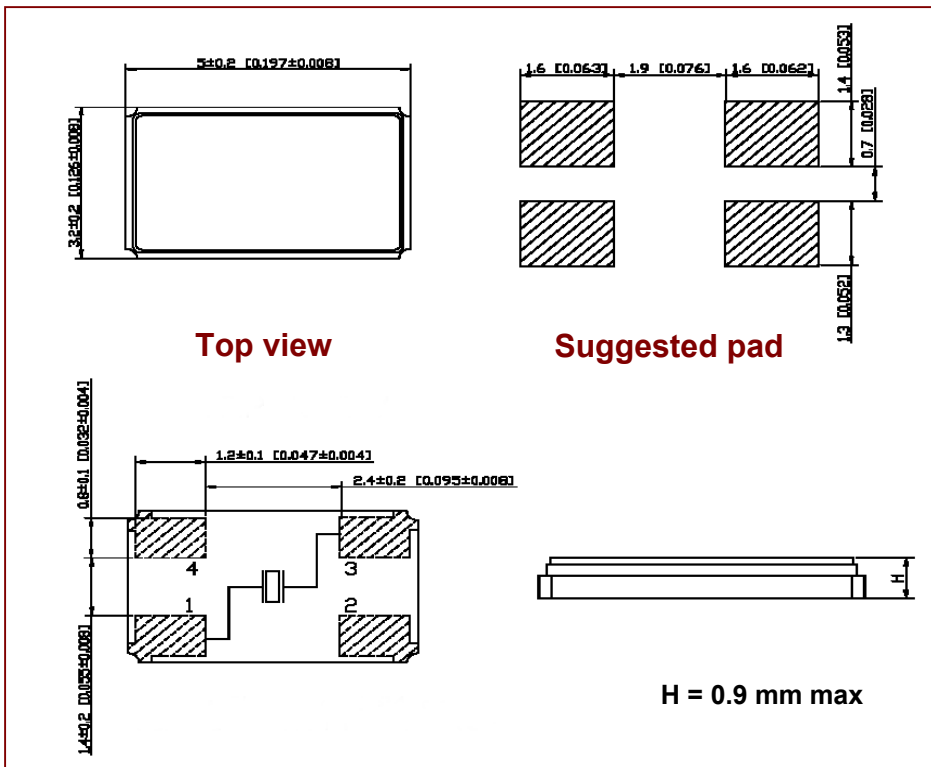
| Electrical Parameters | Unit | Minimum | Typical | Maximum | Test conditions |
|----------------------------------|-------|----------------------|---------|---------|-------------------------------|
| Frequency range | MHz | 12 | | 48 | |
| Frequency Tolerance (at 25°C) | ± ppm | 10 | 30 | 50 | Refer to Ordering Information |
| Temperature Stability | ± ppm | 10 | 30 | 50 | Refer to Ordering Information |
| Operating Temperature Range | °C | | -20/+70 | -40/+85 | Refer to Ordering Information |
| Storage temperature range | °C | -40 | | +85 | |
| Shunt capacitance C ₀ | pF | | | 7.0 | |
| Load capacitance | pF | 8pF ~ 30pF or series | | | Refer to Ordering Information |
| Drive level | µW | 10 | 100 | 300 | |
| Aging (First Year) | ± ppm | | | 3 | Ref at 25°C |
| Insulator resistance | MΩ | 500 | | | At 100V _{DC} |

Customized specification upon request

ESR vs. frequency range and Mode of vibration

| Frequency range (MHz) | Mode of vibration | Max ESR (Ω) | Frequency range (MHz) | Mode of vibration | Max ESR (Ω) |
|-----------------------|-------------------|-------------|-----------------------|----------------------|-------------|
| 12.000 to 13.999 | Fund. / AT | 80 | 20.000 to 29.999 | Fund. / AT | 50 |
| 14.000 to 19.999 | Fund. / AT | 60 | 30.000 to 48.000 | 3 rd / AT | 40 |

Mechanical Characteristics



| Marking for QESM05 | |
|--------------------|------------------------------------|
| Line 1 | Manuf code + Temex code (6 digits) |
| Line 2 | Frequency in MHz (6digits) |

| Mechanical conditions | |
|-----------------------|---|
| Vibration | 10g, 10Hz to 2KHz according to standard CEI 68-2-63 |
| Shocks | 100g, 6ms according to standard CEI 68-2-27 |

Note 1 : QESM05 is fully RoHS compliant.

QESM05

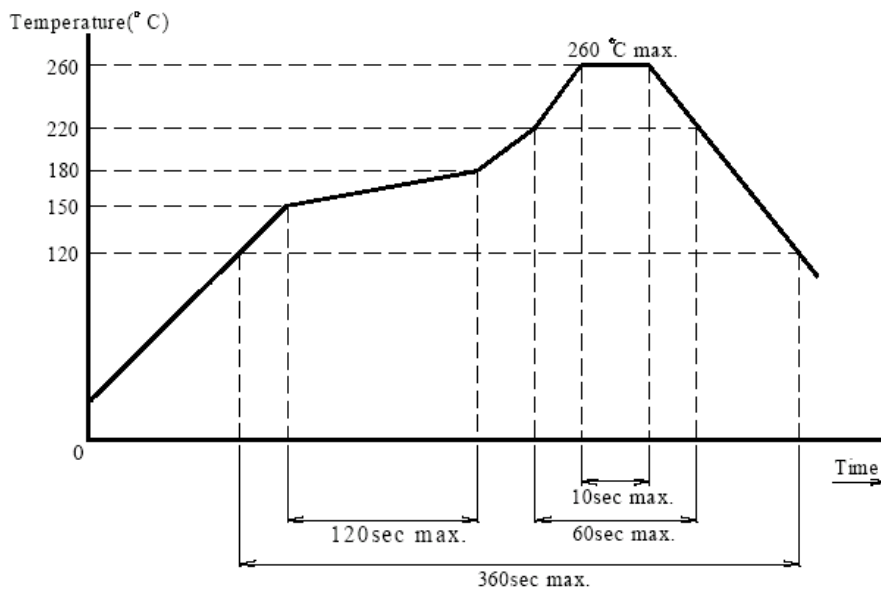
SMD 5.0x3.2 Crystal – Ceramic SMD packaged
Specification (rev-C)

September 01th, 2006

Ordering Information

| Part numbering system | | | | | | |
|--|---|--|--|--|--|------------------------------------|
| QESM05 | 1 | 30 | HQ | 50 | 12 | 13.4008MHZ |
| Package type | Vibration mode | Frequency tolerance | Operating temperature range | Frequency stability | Load Capacitance | Nominal Frequency (MHz) |
| SMD Package QESM05 : SMD ceramic 5.0 x 3.2 4 pads | 1=Fundamental 3=3 rd overtone | 10=±10ppm 20=±20ppm 30=±30ppm 50=±50ppm | D=-40°C F=-30°C H=-20°C J=-10°C L=0°C M=+50°C N=+55°C O=+60°C Q=+70°C T=+85°C | 10=±10ppm 20=±20ppm 30=±30ppm 50=±50ppm | 00=series 10=10pF 30=30pF Please, enter the value of load capacitance | Please enter the nominal frequency |

Suggested Reflow Soldering Profile

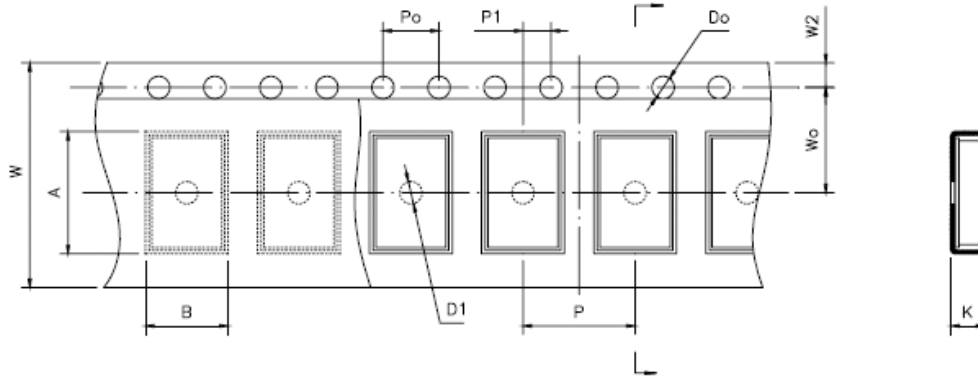


QESM05

SMD 5.0x3.2 Crystal – Ceramic SMD packaged
Specification (rev-C)

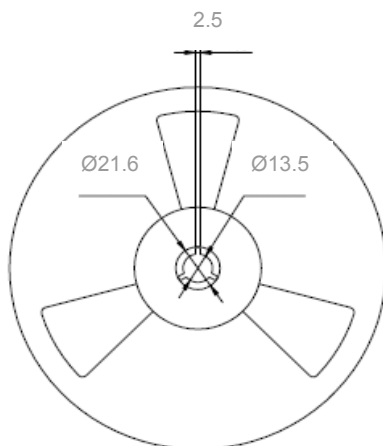
September 01th, 2006

▣ Tape Drawing



| | Code | Dimension | Tolerance |
|---|------|-----------|-----------|
| Pitch of components | P | 8.0 | ± 0.1 |
| Pitch of sprocket hole | Po | 4.0 | ± 0.1 |
| Length from hole center to component center | P1 | 2.0 | ± 0.1 |
| Width of carrier tape | W | 12.0 | ± 0.3 |
| Width of adhesive tape | W0 | 5.5 | ± 0.1 |
| Height of component hole | A | 5.5 | ± 0.1 |
| Width of component hole | B | 4.7 | ± 0.1 |
| Gap of hold down tape and carrier tape | W2 | 1.75 | ± 0.1 |
| Diameter of sprocket hole | Do | Ø 1.5 | ± 0.05 |
| Diameter of feed hole | D1 | Ø 1.5 | ± 0.25 |
| Total of tape thickness | K | 1.5 | ± 0.1 |

▣ Reel Drawing



Multiple : 1Kpcs per Reel

Unit : mm

