



QEA95 / QEA95V

SMD 9.6x11.4 TCXO / VC-TCXO – Communications equipment applications
Specification (Rev-E)

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Electrical Characteristics

- Output : Clipped SineWave
- Load : 10KΩ//10pF
- Standard frequency : 10.0 – 12.8 – 13.0 – 14.4 – 14.7456 – 16.384 – 19.2 – 19.44 – 20.0 – 21.4 MHz

| Electrical Parameters | Unit | Minimum | Typical | Maximum | Test conditions |
|--|--------|---------------------------|-----------------------------|-------------------|---|
| Frequency Range | MHz | 9.6 | | 40 | |
| Operating Temperature Range | °C | | -30 to 75 | -40 to 85 | Refer to Ordering Information |
| Storage Temperature Range | °C | -40 | | 85 | |
| Power supply | V | 3.0 | | 5.0 | Refer to Ordering Information |
| Frequency Adjustment - type QEA95 - type QEA95V - type QEA95V1 | ± ppm | 3.0 3.0 Trimmerless | | | Mechanical Trimmer |
| Preset Frequency - type QEA95 - type QEA95V - type QEA95V1 | ± ppm | | | 0.5 0.5 2.0 | At 25°C ± 2°C |
| Stability vs Operating Temperature Range | ± ppm | | 2.5 | | Refer to Ordering Information |
| Stability vs voltage variation (± 5%) | ± ppm | | | 0.3 | For frequency less than 28MHz (see Note 1) |
| Stability vs load variation (± 10%) | ± ppm | | | 0.3 | |
| Aging (First year at 25°C) | ± ppm | | | 1.0 | For frequency less than 28MHz (see Note 2) |
| Supply Current 9.6MHz ≤ Fo < 16.000MHz 16.0MHz ≤ Fo ≤ 40.000MHz | mA | | | 1.5 2.0 | With load 10KΩ//10pF |
| Output voltage 9.6MHz ≤ Fo < 16.000MHz 16.0MHz ≤ Fo ≤ 40.000MHz | Vp-p | | | 0.8 0.7 | Clipped Sine DCcut |
| Pulling Range - type QEA95 - type QEA95V - type QEA95V1 | ppm | - 5 8 | | - 10 14 | 5V => Vc=2.50 ± 2.00V 3.3V=> Vc=1.65 ± 1.35V 3.0V=> Vc=1.50 ± 1.00V |
| Phase Noise offset 10Hz offset 100Hz offset 1KHz offset 10KHz | dBc/Hz | | -90 -128 -147 -148 | | Typical value for 10MHz TCXO. |

Note 1 : for frequency ≥ 28MHz, stability vs voltage variation (± 5%) is ± 1.0ppm max

Note 2 : for frequency ≥ 28MHz, aging first year ± 2.0ppm max

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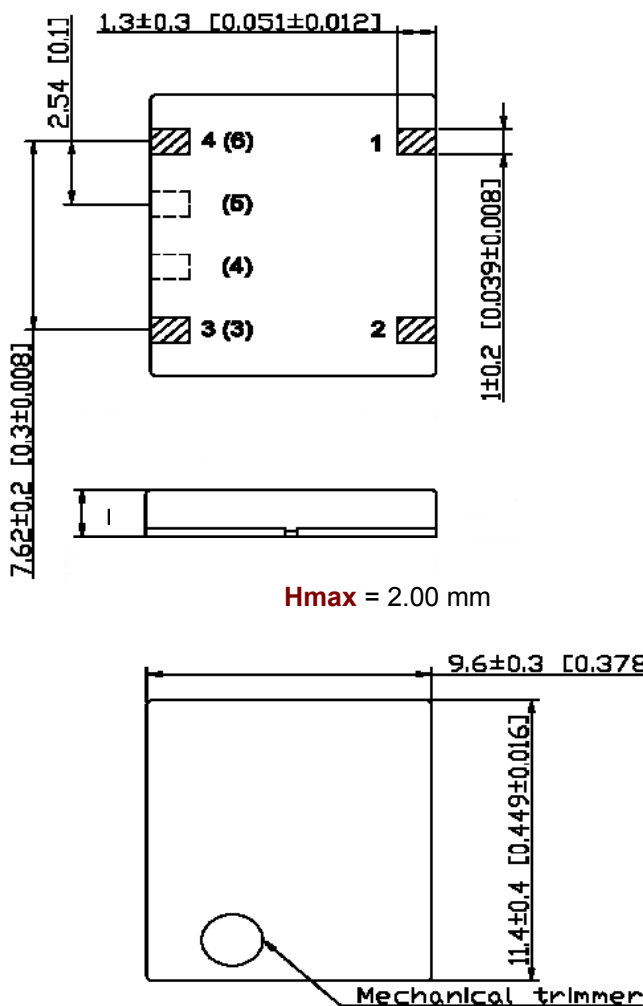
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Environmental Specifications

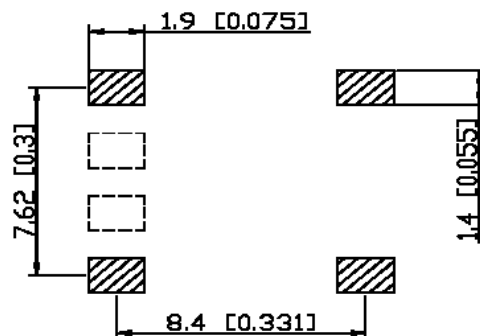
| Item | Specifications |
|----------------|---|
| Vibration Test | Freq : 10 ~ 55Hz Cycle : 2.00mm, 3 directions each 2 hours |
| Shock Test | Random drop onto concrete 10 times from height of 75 cm |
| Humidity | RH : 90% at 40degC during 200 hours |

Mechanical Characteristics

BOTTOM VIEW



SUGGESTED PAD



| Pin connections | | | |
|-----------------|-------------|----------------|-------------|
| 4 pins version | | 6 pins version | |
| #1 | Vcont or NC | #5 | Vcont or NC |
| #2 | GND | #1,2,4 | GND |
| #3 | Output | #3 | Output |
| #4 | Vcc | #6 | Vcc |

| Marking | | | |
|---------|--------------------------------|---------|---------|
| | QEA95 | QEA95V | QEA95V1 |
| Line 1 | E2 AA0* | G2 AA0* | H2 AA0* |
| Line 2 | Frequency in MHz (6 digits) | | |
| Line 3 | Date code (YYWW) – Manuf. code | | |

* : see letters for Temperature stability, supply voltage and output

Example for QEA95 AA0 / 10.000MHz

- ⇒ Line 1 : E2 AA0
- ⇒ Line 2 : 10.000
- ⇒ Line 3 : 0610-R

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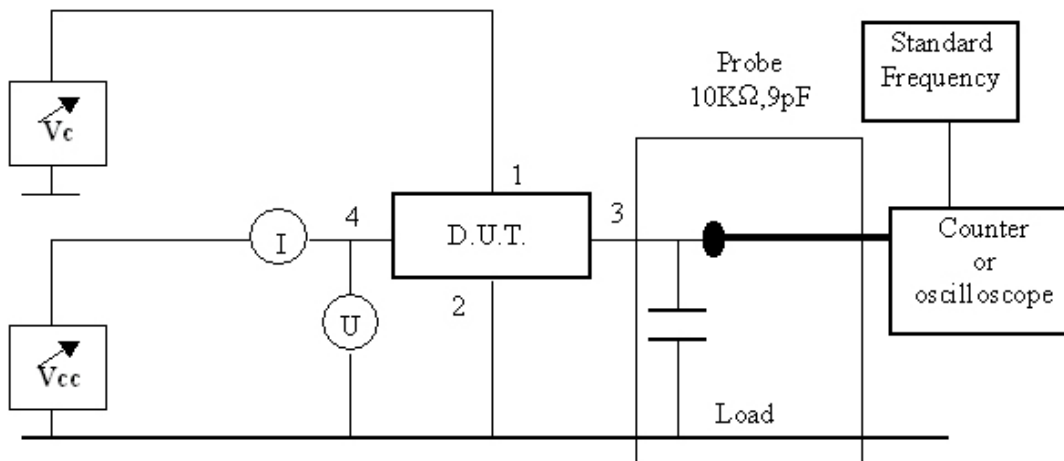
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Ordering Information

| Part numbering system | | | | | |
|--|---|---|--|------------------------------|------------------------------------|
| QEA95 | V | A | E | O | 12.800MHZ |
| Package type | Voltage Control | Temperature Stability | Supply voltage | Output | Nominal Frequency (MHz) |
| SMD Package QEA95 : SMD 9.6x11.4 | Blank : TCXO with trimmer V : VC-TCXO with trimmer V1 : VC-TCXO trimmerless | A : ± 2.5ppm vs -30 to +75°C B : ± 1.5ppm vs -20 to +70°C C : ± 3.5ppm vs -40 to +85°C D : ± 5.0ppm vs -40 to +85°C E : ± 2.0ppm vs -20 to +70°C | A : + 5.0V D : +3.3V E : + 3.0V | 0 : Clipped sine wave | Please enter the nominal frequency |

Test Circuit

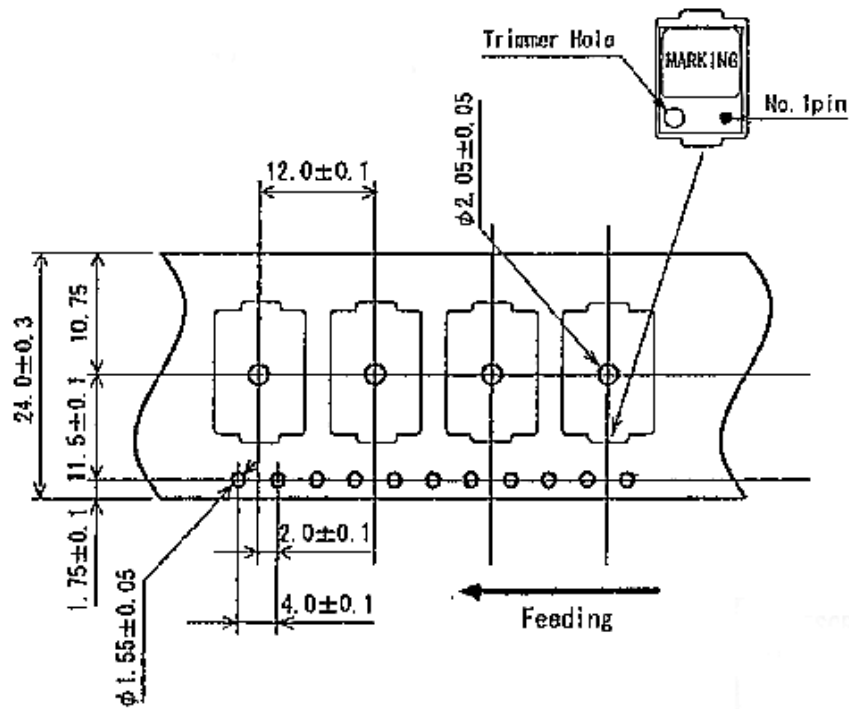


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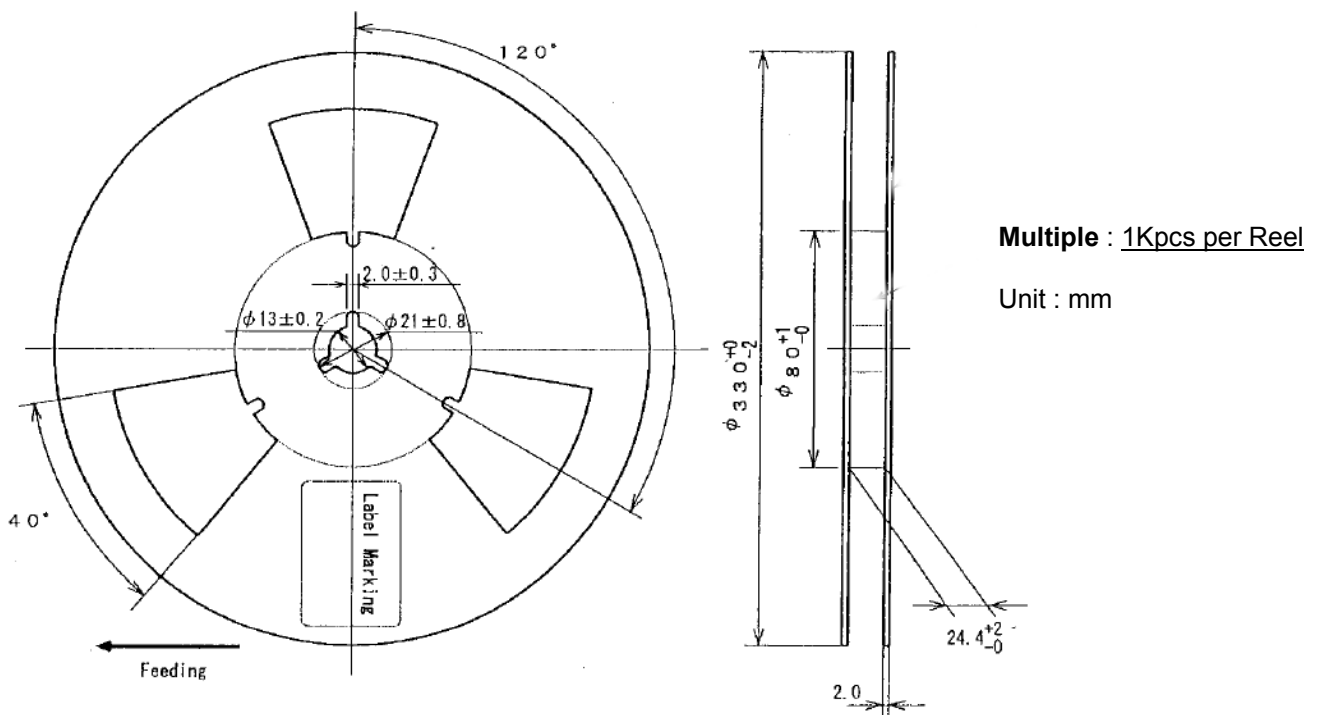
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▣ Tape Drawing



▣ Reel Drawing



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▣ Suggested Reflow Soldering Profile

