

EA3560HA12-16.000M TR [Click part number to visit Part Number Details page](#)

REGULATORY COMPLIANCE (Data Sheet downloaded on Jun 21, 2020)



◀ Click badges to download compliance docs

Regulatory Compliance standards are subject to updates by governing bodies. Click the badges to download the latest compliance docs for this part number directly from Ecliptek.



ITEM DESCRIPTION

Quartz Crystal Resonator 3.5mm x 6.0mm x 1.0mm 4 Pad Ceramic Surface Mount (SMD) 16.000MHz ± 15 ppm at 25°C, ± 30 ppm over -20°C to +70°C 12pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

| | |
|-------------------------------|--|
| Nominal Frequency | 16.000MHz |
| Frequency Tolerance/Stability | ± 15 ppm at 25°C, ± 30 ppm over -20°C to +70°C |
| Aging at 25°C | ± 3 ppm/year Maximum |
| Load Capacitance | 12pF Parallel Resonant |
| Shunt Capacitance | 5pF Maximum |
| Equivalent Series Resistance | 60 Ohms Maximum |
| Mode of Operation | AT-Cut Fundamental |
| Drive Level | 100 μ Watts Maximum |
| Spurious Response | -3dB Minimum (Measured from Fo to Fo +5000ppm) |
| Storage Temperature Range | -40°C to +85°C |
| Insulation Resistance | 500 Megaohms Minimum (Measured at 100Vdc) |

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

| | |
|------------------------------|---|
| ESD Susceptibility | MIL-STD-883, Method 3015, Class 1, HBM: 1500V |
| Fine Leak Test | MIL-STD-883, Method 1014, Condition A |
| Flammability | UL94-V0 |
| Gross Leak Test | MIL-STD-883, Method 1014, Condition C |
| Mechanical Shock | MIL-STD-883, Method 2002, Condition B |
| Moisture Resistance | MIL-STD-883, Method 1004 |
| Moisture Sensitivity | J-STD-020, MSL 1 |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition K |
| Resistance to Solvents | MIL-STD-202, Method 215 |
| Solderability | MIL-STD-883, Method 2003 |
| Temperature Cycling | MIL-STD-883, Method 1010, Condition B |
| Vibration | MIL-STD-883, Method 2007, Condition A |

EA3560HA12-16.000M TR [Click part number to visit Part Number Details page](#)

MECHANICAL DIMENSIONS (all dimensions in millimeters)



Note: Chamfer not shown.

| PIN | CONNECTION |
|-----|-------------|
| 1 | Crystal |
| 2 | Case/Ground |
| 3 | Crystal |
| 4 | Case/Ground |

| LINE | MARKING |
|------|---|
| 1 | E16.00 E=Ecliptek Designator |
| 2 | XXXXX XXXXX=Ecliptek Manufacturing Identifier |

Seam Sealed

Terminal Plating Thickness: Gold (0.3 to 1.0µm) over Nickel (1.27 to 8.89µm).

Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ±0.1

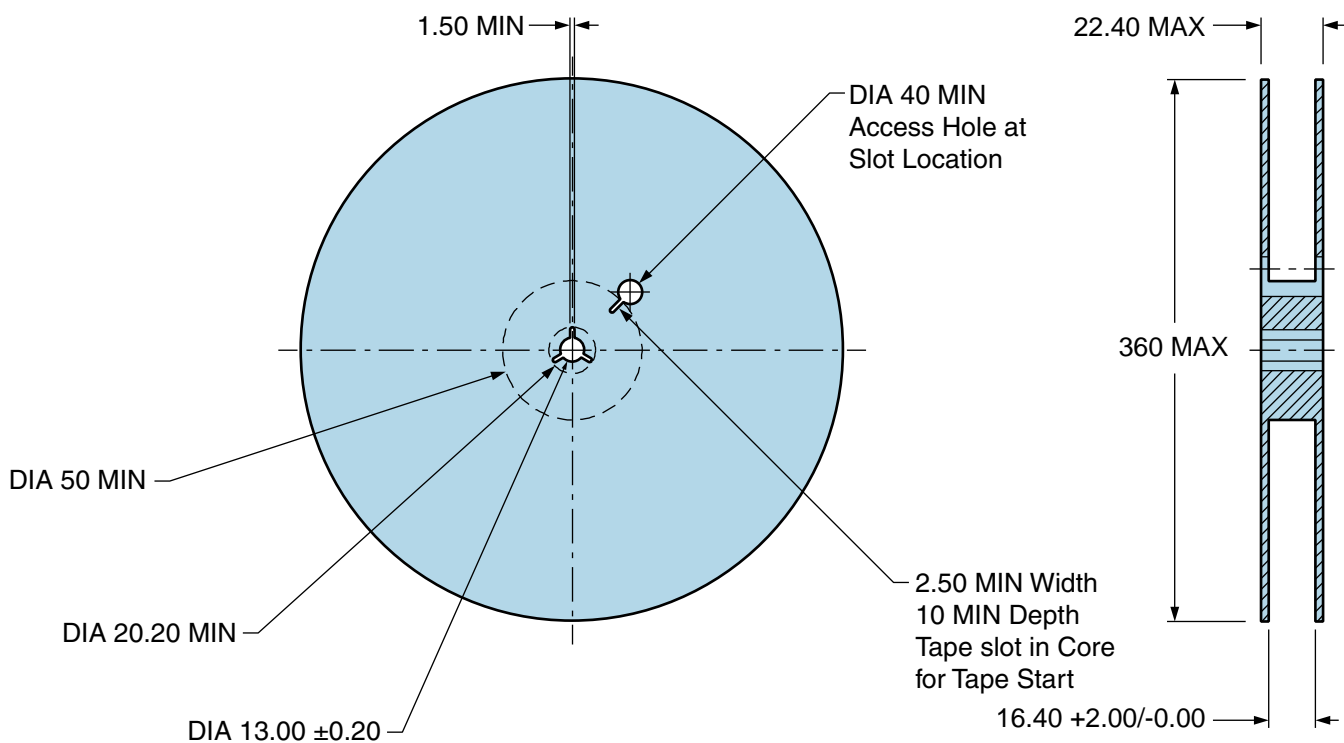
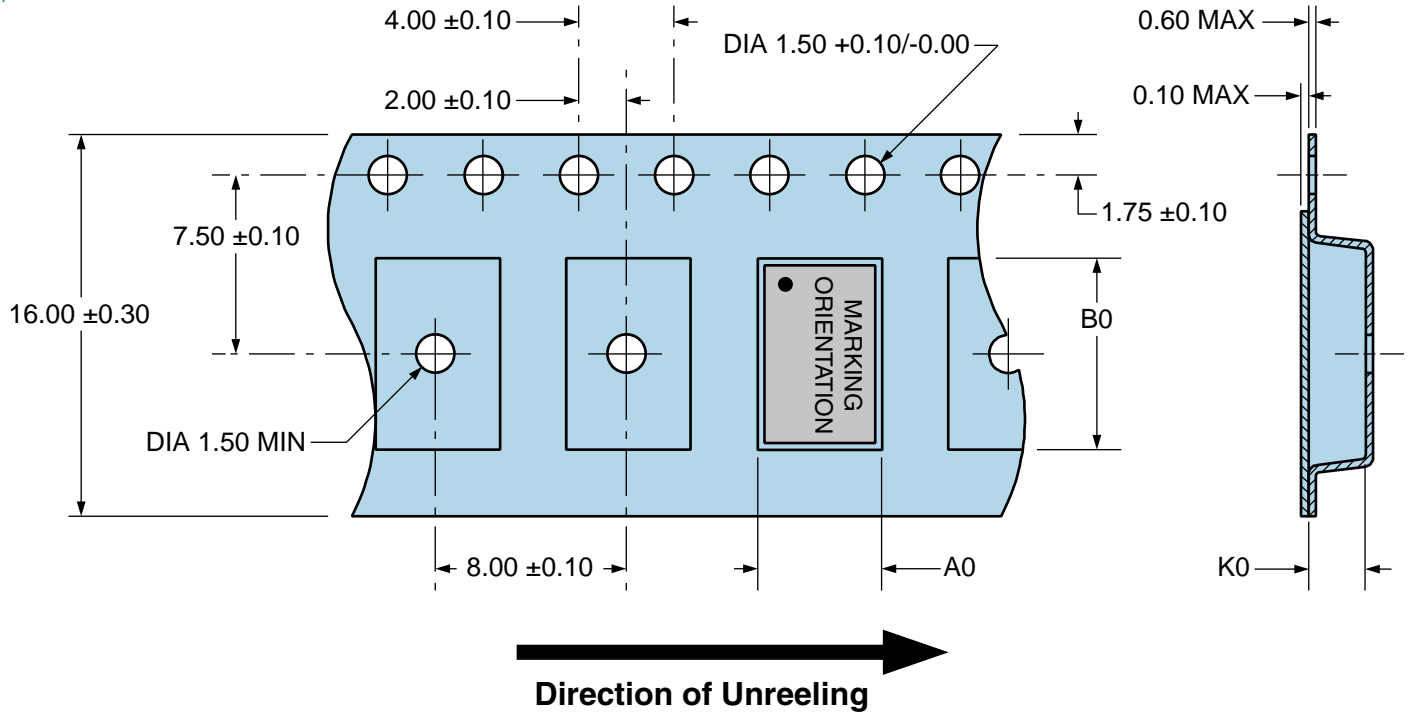
EA3560HA12-16.000M TR

Tape & Reel Dimensions

Quantity Per Reel: 1,000 units

All Dimensions in Millimeters

Compliant to EIA-481



EA3560HA12-16.000M TR [Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



High Temperature Infrared/Convection

| | |
|--|---|
| T_s MAX to T_L (Ramp-up Rate) | 3°C/Second Maximum |
| Preheat | |
| - Temperature Minimum (T_s MIN) | 150°C |
| - Temperature Typical (T_s TYP) | 175°C |
| - Temperature Maximum (T_s MAX) | 200°C |
| - Time (t_s MIN) | 60 - 180 Seconds |
| Ramp-up Rate (T_L to T_P) | 3°C/Second Maximum |
| Time Maintained Above: | |
| - Temperature (T_L) | 217°C |
| - Time (t_L) | 60 - 150 Seconds |
| Peak Temperature (T_P) | 260°C Maximum for 10 Seconds Maximum |
| Target Peak Temperature (T_P Target) | 250°C +0/-5°C |
| Time within 5°C of actual peak (t_p) | 20 - 40 Seconds |
| Ramp-down Rate | 6°C/Second Maximum |
| Time 25°C to Peak Temperature (t) | 8 Minutes Maximum |
| Moisture Sensitivity Level | Level 1 |
| Additional Notes | Temperatures shown are applied to body of device. |

EA3560HA12-16.000M TR [Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 245°C

| | |
|--|--|
| Ts MAX to TL (Ramp-up Rate) | 5°C/Second Maximum |
| Preheat | |
| - Temperature Minimum (Ts MIN) | N/A |
| - Temperature Typical (Ts TYP) | 150°C |
| - Temperature Maximum (Ts MAX) | N/A |
| - Time (ts MIN) | 30 - 60 Seconds |
| Ramp-up Rate (TL to TP) | 5°C/Second Maximum |
| Time Maintained Above: | |
| - Temperature (TL) | 150°C |
| - Time (tL) | 200 Seconds Maximum |
| Peak Temperature (TP) | 245°C Maximum |
| Target Peak Temperature (TP Target) | 245°C Maximum 2 Times / 230°C Maximum 1 Time |
| Time within 5°C of actual peak (tp) | 10 Seconds Maximum 2 Times / 80 Seconds Maximum 1 Time |
| Ramp-down Rate | 5°C/Second Maximum |
| Time 25°C to Peak Temperature (t) | N/A |
| Moisture Sensitivity Level | Level 1 |
| Additional Notes | Temperatures shown are applied to body of device. |

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Ecliptek:](#)

[EA3560HA12-16.000M TR](#)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.