Frequently Asked Questions

Rev C

For Series: EV31C3 EV31C6 EV32C4 EV32C8 EV32C3 EV32C6 EV34C4 EV34C8 EV34C3 EV34C6

Click on a question to jump down to the corresponding answer.

1. What are the Ecliptek EV series of oscillators?

These Ecliptek oscillator series are voltage controlled crystal oscillators (VCXO). These product series utilize a quartz crystal oscillator where the output frequency is controlled by an external control voltage applied to the input of the oscillator and the output frequency varies as a function of the input voltage.

Back to Top

2. How do the EV series of oscillators work?

A VCXO is a crystal controlled oscillator where the output frequency of the device is being controlled by the crystal and an external control voltage. VCXO's are designed with a varactor replacing a fixed capacitor internal to the oscillator. A varactor diode is a semiconductor device that behaves as a variable capacitor when a voltage is applied to it. Thus, when a change in the control voltage is applied to the control pad of the oscillator, it causes a change in the capacitance of the varactor diode. This results in a change in the overall load capacitance seen by the crystal internal to the oscillator. These changes in the circuit load capacitance cause changes in the oscillator output frequency due to crystal loading. As a result, variations in output frequency are achieved by variations in the external control voltage. This phenomenon is often called frequency modulation.

Back to Top

3. What are the customer circuit applications for these EV oscillator series?

These product series can be used in the following circuit applications:

- Clock Recovery
- Phase-Locked Loops (PLL's)
- Frequency Modulation/Demodulation
- Reference Signal Tracking
- Synthesizers clock
- Clock synchronization
- Digital Switching

Back to Top

4. What customer products are these series of oscillators used in?

These series of oscillators are commonly found in the following customer products:

- ADSL and HDSL Customer Premise Equipment (CPE)
- Hybrid Fiber Coax Equipment (HFC)
- Cable Modems
- SONET/ATM/SDH Equipment
- MPEG Audio/Video Equipment
- 1G, 2G, 4G, 10G Fiber Channel
- Hybrid Fiber Coax (HFC)

- Gigabit Ethernet
- PCI Express

Back to Top

5. What benefits do these product series offer?

These product series offer:

- Improved frequency stability through the use of a fundamental mode BAW (bulk acoustic wave) crystal
- Output frequencies up to 77.760MHz
- Supply Voltages of 2.5V_{DC}, 3.3V_{DC} and 5.0V_{DC}
- ±50ppm, ±80ppm, and ±100ppm Minimum Absolute Pull Ranges (APR)
- Tight Duty Cycle (45% / 55%)
- 10% typical and 20% maximum Linearity
- Excellent rms phase jitter performance
- Low Phase Noise
- Commercial and industrial temperature ranges
- Tri-state function high impedance output
- Low profile six pad ceramic SMD package
- RoHS Compliant (Pb-free) with high temperature 260°C reflow capability

Back to Top

6. What are the package types for these product series?

The (EV31C3, EV32C3, EV31C6, EV32C6, EV34C3, and EV34C6) series oscillators are offered in the industry standard 5mm x 7mm six-pad leadless ceramic SMD package. The (EV32C4, EV32C8, EV34C4, and EV34C8) series oscillators are offered in the industry standard 3.2mm x 5mm six-pad leadless ceramic SMD package.

The table below outlines the series product offerings.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to see package dimensions

Back to Top

7. What are the input voltage (power supply) options for these product series?

The EV31C3, EV31C6 series are 5.0Vdc ±10% versions. The EV32C3, EV32C6, EV32C4, and EV32C8 series are offered at 3.3Vdc ±10%. The EV34C3, EV34C6, EV34C4, and EV34C8 series are offered at 2.5Vdc ±5% for lower voltage applications. Please contact the Ecliptek Global Support Team if you have a 1.8Vdc or other supply voltage need.

Back to Top

8. What are the input current specifications for these product series?

The input current specification is listed as a maximum on the respective datasheet. These current ratings are for oscillators with the specified output load connected.

Back to Top

9. What output frequencies can I obtain for these product series?

These series feature standard frequencies ranging from 1.544MHz to 77.760MHz. Other frequencies not listed as standard can be provided on a case-by-case basis. Please contact us with your custom requirements.

Back to Top

10. What are the construction characteristics for these product series?

These product series consist of a single ASIC and fundamental mode BAW quartz crystal packaged inside a hermetically sealed ceramic leadless SMD package with six gold plated contact I/O pads. The package has a seam sealed metal cover that is case grounded for improved EMI performance.

Back to Top

11. How do I specify a VCXO?

There are two common methods customers and suppliers use for specifying VCXO's. The first method is to specify the performance of the device inclusive of all operating conditions. This is called the APR Method. The second method is to specify device performance under specific operating conditions and to specify separate operating parameters such as frequency deviation, frequency tolerance, frequency stability over operating temperature range, supply voltage, output load, and aging. This is called the Separate Method.

These oscillator series use the APR Method for specifying the VCXO. This method utilizes the absolute pull range (APR) definition. The advantage of the APR Method is that a customer can simply specify one parameter, APR, rather than specifying many individual parameters such as frequency deviation, temperature stability over operating temperature range, output load, supply voltage, and aging.

See the table below for a comparison of the APR Method and the Separate Method.

VCXO Output Parameter	APR Method	Separate Method
Calibration Tolerance		±10ppm MAX
Stability over OTR		±40ppm MAX
Stability vs. Supply Voltage		±5ppm MAX
Stability vs. Output Load		±5ppm MAX
Aging over 10 years		±10ppm MAX
Pullability/Frequency Deviation		±150ppm MIN
Absolute Pull Range (APR)	±80ppm Minimum	
Operating Temperature Range (OTR)	-40°C to +85°C	-40°C to +85°C

Table: APR Method versus Separate Method

As shown in the above table, the APR Method of ±80ppm minimum in the second column is equivalent to the Separate Method of ±150ppm pullability minimum in the third column.

Back to Top

12. What is APR?

APR stands for absolute pull range. APR is defined as the minimum guaranteed frequency deviation (specified in ±ppm) from the nominal frequency (F_0) over all operating parameters. These operating parameters include: frequency tolerance, frequency stability over operating temperature range, supply voltage, output load, and aging. For example, a 35.328MHz VCXO used in a PLL clock recovery circuit that has a ±50ppm minimum APR specification will track or capture a ±50ppm maximum 35.328MHz source oscillator under all operating conditions.

Back to Top

13. How do I specify the APR for these product series?

For frequencies from 1.544MHz to 36.000MHz, these product series offer the following APR options: ±50ppm, ±80ppm, and ±100ppm minimum. For frequencies greater than 36.00MHz to 51.840MHz, these product series offer both the ±50ppm APR and ±80ppm APR option. For frequencies greater than 51.840MHz, these product series only offer the ±50ppm APR option.

Back to Top

14. What are the control voltage range and control voltage specifications for these product series?

The control voltage range (V_{CR}) is the minimum and maximum voltage that can be applied to the voltage control pad (pad 1) of the oscillator. The control voltage range is $0.0V_{DC}$ to V_{DD} (Supply Voltage) for these product series. The control voltage (V_C) is the voltage applied to the voltage control pad (pad 1) of the oscillator for the measurement of the APR test conditions. The control voltage is dependent upon the specific product series.

The table below outlines the control voltage for each series.

EV Series	Package Type	Supply Voltage	Control Voltage
EV31C3	5mm x 7mm	$5.0V_{DC}$	$0.5V_{DC}$ to $4.5V_{DC}$
EV32C3	5mm x 7mm	$3.3V_{DC}$	$0.3V_{DC}$ to $3.0V_{DC}$
EV34C3	5mm x 7mm	$2.5V_{DC}$	$0.2V_{DC}$ to $2.3V_{DC}$
EV31C6	5mm x 7mm	$5.0V_{DC}$	$0.5V_{DC}$ to $4.5V_{DC}$
EV32C6	5mm x 7mm	$3.3V_{DC}$	$0.3V_{DC}$ to $3.0V_{DC}$
EV34C6	5mm x 7mm	$2.5V_{DC}$	$0.2V_{DC}$ to $2.3V_{DC}$
EV32C4	3.2mm x 5mm	$3.3V_{DC}$	$0.3V_{DC}$ to $3.0V_{DC}$
EV34C4	3.2mm x 5mm	$2.5V_{DC}$	$0.2V_{DC}$ to $2.3V_{DC}$
EV32C8	3.2mm x 5mm	$3.3V_{DC}$	$0.3V_{DC}$ to $3.0V_{DC}$
EV34C8	3.2mm x 5mm	$2.5V_{DC}$	$0.2V_{DC}$ to $2.3V_{DC}$

Table: Control Voltage per series

Back to Top

15. What are the pullability or frequency deviation specifications for these product series?

The pullability or frequency deviation of a VCXO refers to the amount of frequency change (in ppm) with respect to a change in the control voltage (V_C). These parameters are specified when using the Separate Method mentioned above. The Ecliptek EV product series do not specify VCXO pullability or frequency deviation, these series specify the APR Method. As a matter of interest, the total pullability or frequency deviation of these product series is typically 200ppm to 400ppm over the control voltage test conditions, depending upon the APR option specified by the customer. If a customer would like to specify a VCXO using the Separate Method, please contact the Ecliptek Global Customer Support Team.

Back to Top

16. What are the operating temperature range (OTR) options for these product series?

Ecliptek offers a commercial temperature range of 0°C to +70°C and an industrial temperature range of -40°C to +85°C.

Back to Top

17. What are the frequency tolerance/stability options for these product series?

The frequency tolerance/stability for these series is ±50ppm maximum over the operating temperature range of -40°C to +85°C or 0°C to +70°C.

Back to Top

18. What is oscillator aging and what are the aging specifications for these product series?

Aging is the systematic change in frequency with time due to internal changes in the crystal and/or oscillator. Aging is often expressed as a maximum value in parts per million per year [ppm/year]. The rate of aging is logarithmic in nature. The following factors effect crystal aging: adsorption and desorption of contamination on the surfaces of the quartz, stress relief of the mounting and bonding structures, material outgassing, and seal integrity. At a rated operating temperature of 25°C, these series of products typically age at a rate of ±2ppm over the first year, ±1ppm over the following year, logarithmically declining each year thereafter. The aging parameters can be found on the applicable series datasheet. It should be noted that oscillator aging is inclusive of the APR.

Back to Top

19. What are the rms phase jitter and phase noise characteristics for these product series?

RMS Period Jitter is a time domain measurement and is specified in picoseconds (pS) as a maximum value. Phase noise is a measure in the frequency domain and is specified in decibels at various offset points from the carrier (-dBc/Hz). Phase jitter, often called offset jitter, is derived from the phase noise measurement of the spectral density over a given offset bandwidth. Ecliptek uses a proprietary design, exclusive processing methods, and a unique ASIC output driver circuit enabling these product series to have exceptionally low jitter and phase noise. The rms phase jitter and phase noise parameters can be found on the applicable series datasheets.

Back to Top

20. Do these product series offer tri-state output capability?

These product series offer tri-state output control on pad five (5) or on pad two (2). The output is three-stated (tri-state condition) when the voltage at the control pad is set to a logic low state. In this condition, the oscillator continues to operate, but the output pad is now in a high impedance state. If the voltage at the control pad is set to no connect or a logic high state, the output is enabled (clocking). Note: The oscillator has an internal pull up resistor on the control pad. The table below outlines the tri-state input control pad for each series.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Tri-State Option per series

Back to Top

21. Is tight duty cycle (symmetry) available for these product series?

Tight duty cycle, specified as a maximum value, is not available for these product series. The duty cycle for these series is typically 45% minimum to 55% maximum. However, the specification limit is 40% minimum, 60% maximum (under all operating conditions).

Back to Top

22. What are the output load options for these product series?

These oscillators have a high speed CMOS output driver that enables the output signal to swing from ground to V_{DD}. The table below outlines the output load for each series. If a customer requires a different load from that specified on the datasheet, please consult the factory with your custom requirements.

EV Series	Package Type	Supply Voltage	Output Load
EV31C3	5mm x 7mm	5.0V_{DC}	10 TTL Load or 30pF HCMOS Load
EV32C3	5mm x 7mm	3.3V_{DC}	10TTL Load or 30pF LVCMOS <12.288MHz, 15pF LVCMOS Load >12.288MHz
EV34C3	5mm x 7mm	2.5V_{DC}	15pf CMOS
EV31C6	5mm x 7mm	5.0V_{DC}	10 TTL Load or 30pF HCMOS Load
EV32C6	5mm x 7mm	3.3V_{DC}	10TTL Load or 30pF LVCMOS <12.288MHz, 15pF LVCMOS Load >12.288MHz
EV34C6	5mm x 7mm	2.5V_{DC}	15pf CMOS
EV32C4	3.2mm x 5mm	3.3V_{DC}	10TTL Load or 30pF LVCMOS <12.288MHz, 15pF LVCMOS Load >12.288MHz
EV34C4	3.2mm x 5mm	2.5V_{DC}	15pf CMOS
EV32C8	3.2mm x 5mm	3.3V_{DC}	10TTL Load or 30pF LVCMOS <12.288MHz, 15pF LVCMOS Load >12.288MHz
EV34C8	3.2mm x 5mm	2.5V_{DC}	15pf CMOS

Table: Output load per series

Back to Top

23. What is the transfer function and what is the transfer function for these product series?

Often called slope, the transfer function of a VCXO is the direction the frequency changes with respect to the control voltage. Positive slope means the output frequency increases with an increase in control voltage. Negative slope means that the output frequency is increasing with decreasing control voltage. The transfer function for these oscillator series is positive.

Back to Top

24. What is linearity and what are the linearity specifications for these product series?

Often called monotonic linearity, this parameter is the calculation of the frequency error expressed in percentage with reference from the best straight line curve fit drawn on the output frequency versus control voltage graph. The linearity curve is the relationship between output frequency versus control voltage. The linearity specifications can be found on the applicable Ecliptek datasheet. In a phase locked loop application, the linearity requirements may be very loose, while in a frequency modulation application the linearity requirement may be very stringent.

Back to Top

25. What are the modulation bandwidth and input impedance specifications for these product series?

Often called tuning or video bandwidth, modulation bandwidth (MBW) is the modulation frequency at the input of the VCXO at which the output frequency deviation decreases to -3dB of its DC value. Input impedance specifies the load of the VCXO control input pad (pad 1). The MBW and input impedance parameters can be found on the applicable Ecliptek datasheet.

Back to Top

26. Is start-up time specified for these product series?

Start-up time for these series is specified at 10mSec maximum. Note: In order to ensure proper start-up, the power supply start-up should have an exponential curve typical of a capacitive charge of a linear voltage ramp. If you have a special voltage start-up profile (i.e. odd ramp steps or shapes), please contact us to discuss possible oscillator performance issues.

Back to Top

27. How do I electrically test these product series at my facility?

See the below table for the recommended electrical test fixture.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to see recommended electrical test fixture

Back to Top

28. Are these product series compatible with my existing assembly process equipment?

If the part number is specified with the TR option (tape and reel packaging), oscillator products are delivered to the customer in EIA-481A compliant tape and reel packaging. Without the TR option, products are delivered to the customer in bulk packaging (ESD protective bag). See the table below for the carrier tape and reel dimensions.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to see tape and reel dimensions

Back to Top

29. Are these product series compatible with my existing reflow processes?

These product series are capable of withstanding industry standard high temperature (260°C, 10 seconds) convection reflow processes and are rated MSL1 per J-STD-020. See the below table for the recommended solder reflow diagram.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to see recommended solder reflow methods

Back to Top

30. Are these oscillator series RoHS compliant and Pb-free?

These product series are RoHS compliant and Pb-free as defined in the Ecliptek RoHS Compliant (Pb-free) Roadmap.

Back to Top

31. How can I obtain a RoHS compliant (Pb-free) certification for these product series?

A RoHS and Pb-free product certification letter can be obtained directly from our website by using the Ecliptek RoHS/Pb-Free Certification Letter Generator.

Back to Top

32. Are RoHS and RoHS (Pb-free) material declaration data available for customer review?

Ecliptek can provide Material Declaration data in compliance with IPC-1752 to assist customers with their RoHS Compliance (Pb-free) concerns.

Back to Top

33. How do I layout my printed circuit board for these product series?

The customer should layout their PCB to include proper connections for the tri-state input function (pad 2 or 5). See the below table for the recommended solder pad layout.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to see recommended solder pad layout diagram

Back to Top

34. How do I cross these product series with a competitor part number?

Please see the Ecliptek Cross Reference by Competitor Part Number.

Back to Top

35. What information is needed to obtain a quote for these product series?

Obtaining a quote on-line is simple. Simply fill in the required information in the part number constructor for the specific series that you would like to order. This part number will define the specifications you desire. After you construct a part number, you can request a quote or check stock by following the prompts on our website. You can go to a part number constructor now by selecting a link below:

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to go to part number constructor

Back to Top

36. How do I obtain a PDF copy of the product series data sheet?

You can go to the specific series you desire now by selecting a link from the table below.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to open the PDF data sheet

Back to Top

37. How do I obtain a PDF copy of the data sheet for a specific part number?

Simply fill in the required information in the part number constructor found on the specific series webpage that you would like to order. This part number will define the specifications you desire. After you construct a part number, you will be prompted with the following: Get a data sheet for this part number (PDF).

Back to Top

38. Who do I contact if I have additional technical questions about the use of these product series?

The engineering staff at Ecliptek can provide applications engineering support or answer customer technical questions.

Back to Top

39. How do I order an oscillator that has custom requirements not specified on the standard oscillator series datasheet?

Complete the Ecliptek Custom Oscillator Request Form from our website. From this page you will be able to enter custom specifications that are unavailable from the standard part number constructor forms. These parameters

will be sent to our Engineering team where they will be evaluated. Upon acceptance, a custom part number will be assigned and an engineering document created to represent your product.

Back to Top

40. What are the environmental and mechanical specifications for these product series?

The environmental and mechanical specifications for each product series are listed on the applicable specifications and are outlined in the table below.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to see the mechanical and environmental specifications

Back to Top

41. What reliability information is available for these product series?

Failure in Time (FIT) and Mean Time To Failure (MTTF) reliability data is available for these product series as provided in the below table.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to open the Qualification and Reliability Report in PDF

Back to Top

42. Is thermal resistance information available for these product series?

θ_{JA} and θ_{JC} values are available for these product series. Please see the Oscillator Thermal Resistance information provided.

Back to Top

43. Is IBIS model information available for these product series?

IBIS modeling information is available for these product series as provided in the below table.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to open the IBIS Model document

Back to Top

44. What are the marking specifications for these product series?

As shown on the applicable datasheet, these series of product have marking content on the top of the part. This marking consists of a pad one (1) locator dot and additional lines of alpha numeric marking. See the applicable datasheet for marking content as outlined in the below table.

EV Series	Package Type	Supply Voltage	Tri-State Option
EV31C3	5mm x 7mm	5.0V_{DC}	Pad 5
EV32C3	5mm x 7mm	3.3V_{DC}	Pad 5
EV34C3	5mm x 7mm	2.5V_{DC}	Pad 5
EV31C6	5mm x 7mm	5.0V_{DC}	Pad 2
EV32C6	5mm x 7mm	3.3V_{DC}	Pad 2
EV34C6	5mm x 7mm	2.5V_{DC}	Pad 2
EV32C4	3.2mm x 5mm	3.3V_{DC}	Pad 5
EV34C4	3.2mm x 5mm	2.5V_{DC}	Pad 5
EV32C8	3.2mm x 5mm	3.3V_{DC}	Pad 2
EV34C8	3.2mm x 5mm	2.5V_{DC}	Pad 2

Table: Click on a series to go to the marking content

Back to Top

45. Where can I get the information regarding discontinued or End of Life products?

Any Ecliptek part number currently under an End of Life statement will be identified as EOL on Ecliptek's Quotation, along with a link to the EOL statement. This information can also be found on the End of Life Statements for Discontinued and Obsolete Products section of our website.

Back to Top

46. Is Ecliptek ISO 9000 Certified?

Yes, Ecliptek is certified to ISO 9001.

Back to Top