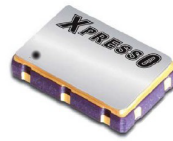


### Features

- Extremely low jitter
- Low cost
- Express delivery
- Stability from  $\pm 20$ ppm, -40 to +85°C
- Absolute pull range  $\pm 50$ ppm
- Serial ID with comprehensive traceability



### Description

The XPRESSO range of fully configurable VCXOs utilizes a family of proprietary ASICs developed for noise reduction to provide oscillators with noise levels comparable to traditional bulk-produced quartz and SAW-based VCXOs.

XPRESSO VCXOs are low-cost, low-noise, have a wide frequency range, excellent ambient performance and are available on very short leadtimes. All XPRESSO VCXOs are 100% final tested.

### Electrical Specification

|                               |                             |
|-------------------------------|-----------------------------|
| Frequency Range:              | 0.750MHz ~ 180.0MHz         |
| Absolute Pull Range:          | $\pm 50$ ppm                |
| Operating Temperature Range:  | -20° ~ +70° to -40° ~ +85°C |
| Storage Temperature Range:    | -55 to +125°C               |
| Supply Voltage:               | +2.5VDC $\pm 5\%$           |
| Input Current                 |                             |
| 0.75 ~ 20.0MHz:               | 22mA                        |
| 20+ ~ 50.0MHz:                | 25mA                        |
| 50+ ~ 100.0MHz:               | 29mA                        |
| 100+ ~ 130.0MHz:              | 32mA                        |
| 130+ ~ 160.0MHz:              | 35mA                        |
| 160+ ~ 180.0MHz:              | 37mA                        |
| Output Load:                  | 15pF                        |
| Start-up Time:                | 10ms                        |
| Output Enable/Disable Time:   | 100ns                       |
| Control Voltage Tuning Slope: | 40 ~ 75ppm/V typical        |
| Control Voltage Linearity:    | $\pm 10\%$                  |
| Control Voltage Tuning Range: | 0V ~ 2.5V                   |
| Modulation Bandwidth:         | 10kHz minimum               |
| Nominal Control Voltage:      | 1.25 volts                  |
| Output Low Voltage            |                             |
| 0.75 ~ 160MHz:                | 10% Vdd maximum             |
| 160+ ~ 180MHz:                | 20% Vdd maximum             |
| Output High Voltage:          |                             |
| 0.75 ~ 160MHz:                | 90% Vdd minimum             |
| 160+ ~ 180MHz:                | 80% Vdd minimum             |

### Typical applications

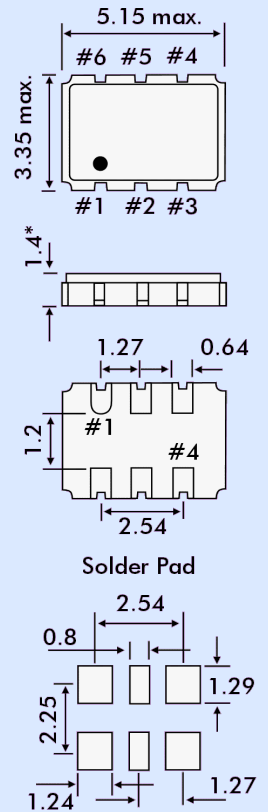
- Any application requiring an oscillator.
- SONET
- Ethernet
- Storage Area Networks
- Broadband Access
- Microprocessors/DSP/FPGA
- Industrial Controllers
- Test and measurement
- Fibre Channel

|                         |               |
|-------------------------|---------------|
| Output Symmetry:        | 45/55%        |
| Output Enable Voltage:  | >70% Vdd max. |
| Output Disable Voltage: | <30% Vdd max. |
| Rise/Fall Times:        | 3ns maximum.  |

### Supply Format

Tape and Reel, 12mm tape,  
8.0mm pitch,  
1k reel = 178mm $\varnothing$   
2k reel = 255mm $\varnothing$

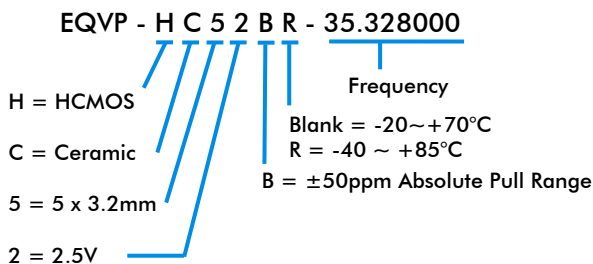
### OUTLINE & DIMENSIONS



Pad Connections

|   |                 |
|---|-----------------|
| 1 | Voltage Control |
| 2 | Enable/Disable  |
| 3 | Ground          |
| 4 | Output          |
| 5 | Not connected   |
| 6 | Vdd             |

### Model Selection Guide



### Jitter Measurements

| Frequency (MHz) | Phase Jitter (12kHz~20MHz) (ps RMS) | Time Interval Error $\sigma$ of jitter distribution (ps RMS) | Rj/Dj Composition           |                                    |                                     |
|-----------------|-------------------------------------|--|-----------------------------|------------------------------------|-------------------------------------|
|                 |                                     |  | Random Jitter (Rj) (ps RMS) | Deterministic Jitter (Dj) (ps p-p) | Total Jitter (Tj) (14*Rj) + Dj (ps) |
| 62.5            | 2.1                                 | 3.1  | 1.3                         | 8.4                                | 27.6                                |
| 106.25          | 1.2                                 | 3.5  | 1.4                         | 8.3                                | 27.7                                |
| 125.0           | 1.1                                 | 2.7  | 1.3                         | 6.7                                | 25.6                                |
| 156.25          | 0.8                                 | 3.7  | 1.4                         | 9.7                                | 29.5                                |