

# R3306

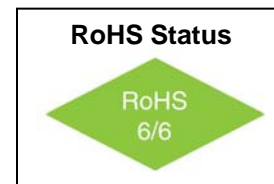
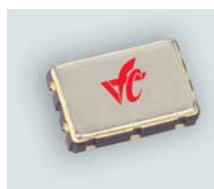
## VCXO Ultra Low Jitter 3.3V

### 5x7mm SMD, HCMOS/TTL



#### Features

- <0.15ps RMS Jitter over 12KHz to 20MHz
- APR min  $\pm 100$ ppm
- Start-up time is less than 5ms
- TRISTATE



#### Applications

- Standard and High Definition Video
- 10 Gbit Ethernet
- Optical Networking

#### Electrical Specifications

| Parameter                    | Symbol          | Condition   | Min                  | Typ                                 | Max                      | Unit       | Note              |
|------------------------------|-----------------|---|----------------------|-------------------------------------|--------------------------|------------|-------------------|
| Frequency Range              | F               |   | 1.5                  |                                     | 100                      | MHz        |                   |
| Frequency Stability          | $\Delta F/F$    | Includes calibration at 25°C, operating temperature, change of input voltage, change of load, shock and vibration |                      | $\pm 30$                            |                          | ppm        |                   |
| Aging                        |                 | First Year<br>After First Year  |                      | 3<br>1                              |                          | ppm<br>ppm |                   |
| Operating Temperature        | T               |   | 0°<br>-40°           |                                     | +70°<br>+85°             | °C         |                   |
| Supply Voltage               | V <sub>cc</sub> |   | 3.0                  | 3.30                                | 3.6                      | V          |                   |
| Supply Current               | I <sub>cc</sub> | 3MHz to 10MHz<br>10.1 to 20MHz<br>20.1 to 30MHz<br>30.1 and above   |                      | 2.0<br>3.0<br>5.0<br>7.0            | 3.5<br>4.0<br>6.0<br>8.0 | mA         |                   |
| Output Levels                |                 | "0" Level, sinking 16mA<br>"1" Level CMOS, sourcing 8mA   | V <sub>DD</sub> -0.4 |                                     | 0.4                      | V          |                   |
| Rise & Fall Times            |                 | CMOS, 15pF, 20% to 80%  |                      | 3.0                                 | 4.0                      | ns         |                   |
| Jitter RMS<br>12KHz to 20MHz | 1 $\sigma$      |   |                      | <0.15                               |                          | ps         |                   |
| Phase Noise                  |                 | 100Hz<br>1KHz<br>10KHz<br>100KHz<br>1MHz  |                      | -94<br>-120<br>-142<br>-155<br>-160 |                          | dBc/Hz     | @74.25MHz         |
| Input Impedance              |                 | Pad 1, V <sub>c</sub>   | 100                  |                                     |                          | KOhm       | 15 MOhm available |
| Start-up Time                | T <sub>s</sub>  |   |                      |                                     | 5                        | ms         |                   |
| Duty Cycle                   |                 | CMOS @50% V <sub>DD</sub>   |                      | 48/52                               | 45/55                    | %          |                   |



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#### Electrical Specifications

| Parameter            | Symbol  | Condition         | Min                      | Typ   | Max | Unit | Note |
|----------------------|---|-------------------|--------------------------|-------|-----|------|------|
| Control Voltage      | Vc  | R3306             | 0                        |       | 3.3 | V    |      |
| Modulation Bandwidth | Fc  | Vc: 1.65V ± 1.65V | 20                       |       |     | KHz  |      |
| Pulling Linearity    | F <sub>LIN</sub>                                      |                   |                          | 5     | 10  | %    |      |
| APR                  |   | Vc 1.65 +/-1.65   | ± 100                    | ± 110 |     | ppm  |      |
| Tristate             | Input HIGH (>2.5V) or floating:<br>Input LOW (<0.5V): |                   | ACTIVE<br>HIGH IMPEDANCE |       |     |      |      |

#### Environmental and Mechanical Conditions

| Parameter        | Specification   |
|------------------|---|
| Mechanical Shock | Per MIL-STD-202, Method 213, Cond. E                      |
| Thermal Shock    | Per MIL-STD-883, Method 1011, Cond. A                     |
| Vibration        | Per MIL-STD-883, Method 2007, Cond. A                     |
| Hermetic Seal    | Leak rate less than 5x10 <sup>-8</sup> atm.cc/s of helium |

#### How to Order:

R3306 -  - FREQUENCY

#### Temperature Range

| Code | Specification  |
|------|----------------|
| B    | 0°C to +70°C   |
| G    | -40°C to +85°C |

| Pin # | Connections  |
|-------|--------------|
| 1     | Vc           |
| 2     | Tristate     |
| 3     | Ground, Case |
| 4     | Output       |
| 5     | N/C          |
| 6     | Vcc          |

| Model   | Marking Letter ID |
|---------|-------------------|
| R3306-B | VW                |
| R3306-G | VZ                |

