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## 3.3V HCSL Low Jitter 100MHz PCIe® 2.0 XO

## SQPCIE100



5.0 x 3.2mm Ceramic SMD

## ASSP XO™ for Networking



### Product Features

- Provides 100 MHz HCSL output for interfacing to standard PCIe® devices
- Very low PCIe 2.0 jitter - 1.8ps RMS (typ.)
- Thicker crystal for improved reliability
- Pb-free & RoHS compliant
- Industrial temperature range

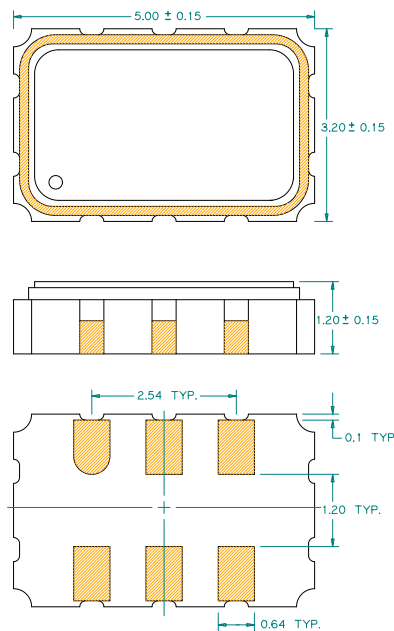
### Product Description

The SQPCIE100 3.3V crystal clock oscillator achieves superb jitter for PCIe® 1.0 & 2.0 applications. The output clock signal, generated internally with a patented oscillator design, is compatible with HCSL logic levels. The device, available on tape and reel, is contained in a 5.0 x 3.2mm surface-mount ceramic package.

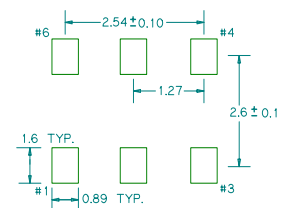
### Applications

- Server
- Network Switch/Router
- Telecom Switch
- Media Box
- Graphics Card
- Host Bus Adapter

### Package:



### Recommended Land Pattern:



### Pin Functions:

| Pin | Function                |
|-----|-------------------------|
| 1   | OE Function             |
| 2   | N/C                     |
| 3   | V <sub>EE</sub>         |
| 4   | OUT                     |
| 5   | $\overline{\text{OUT}}$ |
| 6   | V <sub>CC</sub>         |

\*Extended high frequency power decoupling is recommended (see test circuit for minimum recommendation). To ensure optimal performance, do not route RF traces beneath the package.

### Part Ordering Information: SQPCIE100



## Electrical Performance

| Parameter                       | Min.   | Typ. | Max. | Units | Notes  |
|---------------------------------|--|------|------|-------|--|
| Output Frequency                |  | 100  |      | MHz   |  |
| Supply Voltage                  | 2.97   | 3.30 | 3.63 | V     |  |
| Supply Current, Output Enabled  |  |      | 40   | mA    |  |
| Supply Current, Output Disabled |  |      | 10   | mA    |  |
| Frequency Stability             |  |      | ±50  | ppm   | See Note 1 below   |
| Operating Temperature Range     | -40  |      | +85  | °C    | Industrial   |
| Output Logic 0, V <sub>OL</sub> | -0.15  |      |      | V     |  |
| Output Logic 1, V <sub>OH</sub> |  |      | 0.9  | V     |  |
| Output Load                     | R <sub>s</sub> = 33Ω, R <sub>p</sub> = 50Ω, C <sub>L</sub> = 2pF |      |      |       | Typ., HCSL Termination   |
| Duty Cycle                      | 45   |      | 55   | %     | Measured 50% of waveform   |
| Rise and Fall Time              |  |      | 0.7  | ns    | Maximum measured from V <sub>OL</sub> = 0.175V to V <sub>OH</sub> = 0.525V |
| Jitter, Phase RMS (1-σ)         |  | 1.8  | 2.5  | ps    | As defined by PCI-SIG for PCIe® 2.0 reference clock                        |
| Jitter, pk-pk                   |  |      | 40   | ps    | 100,000 random periods   |

### Notes:

- Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (5 year at 40°C average effective ambient temperature), shock and vibration.
- For specifications other than those listed, please contact sales.

## Output Enable / Disable Function

| Parameter   | Min.                | Typ. | Max.                | Units | Notes                    |
|---|---------------------|------|---------------------|-------|--------------------------|
| Input Voltage (pin 1), Output Enable                      | 0.7*V <sub>DD</sub> |      |                     | V     | or open                  |
| Input Voltage (pin 1), Output Disable (low power standby) |                     |      | 0.3*V <sub>DD</sub> | V     | Outputs disabled to Hi-Z |
| Output Disable Delay                                      |                     |      | 200                 | ns    |                          |
| Output Enable Delay                                       |                     |      | 2                   | ms    |                          |

## Absolute Maximum Ratings

| Parameter           | Min. | Typ. | Max. | Units | Notes |
|---------------------|------|------|------|-------|-------|
| Storage Temperature | -55  |      | +125 | °C    |       |

For the latest product information visit: <http://www.pericom.com/products/timing/oscillators/SQPCIE100/>

For test circuit go to: [http://www.pericom.com/pdf/sre/tc\\_hcsl.pdf](http://www.pericom.com/pdf/sre/tc_hcsl.pdf)

For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

For tape and reel information go to: [http://www.pericom.com/pdf/sre/tr\\_5032\\_xo.pdf](http://www.pericom.com/pdf/sre/tr_5032_xo.pdf)