

## 3.3V PECL Low Jitter 150MHz SAS-2 XO

# SNSAS2150



## ASSP XO™ for Networking



7.0 x 5.0mm Ceramic SMD

### Product Features

- Very low phase jitter - 0.5ps RMS
- Thicker crystal for improved reliability
- Pb-free & RoHS compliant
- Industrial temperature range

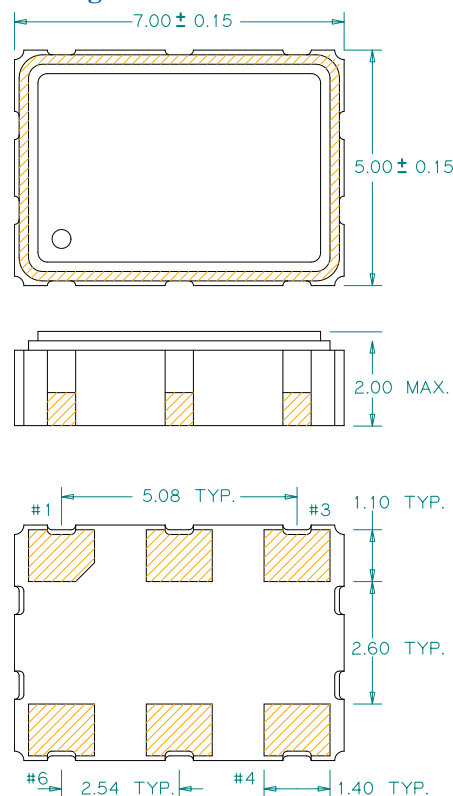
### Product Description

The SN series 3.3V, 150MHz crystal clock oscillator achieves superb jitter for Serial Attached SCSI (SAS-1 & SAS-2) applications. The output clock signal, generated internally with a patented oscillator design, is compatible with LVPECL logic levels. The device, available on tape and reel, is contained in a 7.0 x 5.0mm surface-mount ceramic package.

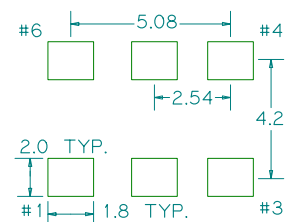
### Applications

- SAS-2 Host Bus Adapter (HBA)
- SAS-2 Expander
- SAS-2 RAID System

### Package:



### Recommended Land Pattern:



### Pin Functions:

| Pin | Function         |
|-----|------------------|
| 1   | OE               |
| 2   | NC               |
| 3   | V <sub>EE</sub>  |
| 4   | Q Output         |
| 5   | $\bar{Q}$ Output |
| 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:

SNSAS2150



### Electrical Performance

| Parameter                       | Min.                        | Typ. | Max.                    | Units | Notes                           |
|---------------------------------|-----------------------------|------|-------------------------|-------|---------------------------------|
| Output Frequency                |                             | 150  |                         | MHz   |                                 |
| Supply Voltage                  | 2.97                        | 3.30 | 3.63                    | V     |                                 |
| Supply Current, Output Enabled  |                             | 45   | 70                      | mA    |                                 |
| Supply Current, Output Disabled |                             |      | 25                      | mA    |                                 |
| Frequency Stability             |                             |      | ±50                     | ppm   | See Note 1 below                |
| Operating Temperature Range     | -20                         |      | +70                     | °C    |                                 |
| Output Logic 0, VOL             |                             |      | V <sub>CC</sub> – 1.620 | V     | 0 to +85°C                      |
|                                 |                             |      | V <sub>CC</sub> – 1.555 | V     | -40 to 0°C                      |
| Output Logic 1, VOH             | V <sub>CC</sub> – 1.025     |      |                         | V     | 0 to +85°C                      |
|                                 | V <sub>CC</sub> – 1.085     |      |                         | V     | -40 to +0°C                     |
| Output Load                     | 50Ω to V <sub>CC</sub> – 2V |      |                         |       | output requires termination     |
| Duty Cycle                      | 45                          |      | 55                      | %     | Measured 50% V <sub>DD</sub>    |
| Rise and Fall Time              |                             | 0.3  | 0.6                     | ns    | Measured 20/80% of waveform     |
| Jitter, Phase RMS (1-σ)         |                             | 0.2  | 0.5                     | ps    | 12 kHz to 20 MHz frequency band |
| Jitter, pk-pk                   |                             | 35   | 50                      | 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                      | 2.2  |      |      | V     | or open                  |
| Input Voltage (pin 1), Output Disable (low power standby) |      |      | 0.8  | V     | Outputs disabled to Hi-Z |
| Internal Pullup Resistance                                | 50   |      |      | kΩ    |                          |
| Output Disable Delay                                      |      |      | 200  | ns    |                          |
| Output Enable Delay                                       |      |      | 10   | 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/SNSAS2150/>

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

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

For typical phase noise go to: [http://www.pericom.com/pdf/sre/pn\\_SNSAS2150.pdf](http://www.pericom.com/pdf/sre/pn_SNSAS2150.pdf)

For tape and reel information go to: [http://www.pericom.com/pdf/sre/tr\\_7050.pdf](http://www.pericom.com/pdf/sre/tr_7050.pdf)

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