Summary
The DSC12x1/2/3/4 family of high-performance oscillators utilizes the latest generation of silicon MEMS technology that reduces close-in noise and provides excellent jitter and stability over a wide temperature range of –40°C to +125°C. The combination of low jitter at 650 fs and a package as small as 2.5 mm × 2.0 mm makes it ideal for applications in communications, storage and networking.

Key Features
- Low RMS phase jitter: 650 fs (typ)
- Wide operating temperature range
  - Extended commercial industrial: –20°C to +70°C
  - Industrial: –40°C to +85°C
  - Extended Industrial: –40°C to +105°C
  - Automotive: –40°C to +125°C
  (CMOS and LVDS output)
- Supports CMOS, LVPECL, LVDS and HCSL
- Output frequency range 2.5 MHz to 450 MHz
- Select between 2 pre-programmed frequencies
- 4 packages available, including the industry’s smallest differential oscillator (2.5 mm x 2.0 mm)

Target Applications
- Storage area networks
- High-speed networking up to 100 Gb
- HD video processing and broadcasting
- PCI Express Gen 1/2/3/4

Functional Block Diagram

Phase Noise - Low Jitter
DSC1204 phase noise at 100 MHz jitter: 684 fs (RMS)
DSC1202 phase noise at 156.25 MHz jitter: 648 fs (RMS)
Configure and Sample
With ClockWorks® Configurator online tool, you can customize the DSC12XX instantly and receive datasheets and samples within a few days. Go to www.clockworks.microchip.com/timing and order samples now.

Product Variants

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Frequency Range (MHz)</th>
<th>Output Format</th>
<th>Power Consumption (typ)</th>
<th>Period Jitter (RMS)</th>
<th>Pin 1 Function</th>
<th>Package Size (mm)</th>
<th>Temperature Range (°C)</th>
<th>Stability (ppm)</th>
</tr>
</thead>
</table>
| DSC12x1     | 2.5–175              | LVCMOS        | 23 mA                   | 0.65 ps             | x = 0: Enable/Standby  
                          |                       |               |                        |                     | x = 1: Freq. Select  
                          |                       |               |                        |                     | x = 2: Enable/Disable |
| DSC12x2     | 2.5–450              | LVPECL        | 50 mA                   | 0.65 ps             | N = 7.0 × 5.0   
                          |                       |               |                        |                     | B = 5.0 × 2.5   |
| DSC12x3     | 2.5–450              | LDVS          | 32 mA                   | 0.65 ps             | C = 3.2 × 2.5   
                          |                       |               |                        |                     | D = 2.5 × 2.0   |
| DSC12x4     | 2.5–450              | HCSL          | 40 mA                   | 0.65 ps             | E = –20 to +70   
                          |                       |               |                        |                     | I = –40 to +85   |
|             |                      |               |                        |                     | L = –40 to +105  
                          |                       |               |                        |                     | A = –40 to +125  |

More Timing Products From The Broadest Line in The Market Place

Oscillators
MEMS | Crystal | OCXO | EMXO  
    |        | TCXO | MCXO | VCXO | VCSO

Jitter Attenuation
Jitter filtering | Clock translation
Any in/any out | Internal EEPROM
Advanced DPLL

Clock Generation
Low jitter | Low power
Any in/any out | Clock tree on a chip
Integrated MEMS/Xtal resonator

Synchronization
Synchronous Ethernet | IEEE1588
Servo algorithm OTN/GPS PLLS
Firmware and software support

Complimentary
Logic translators | Cross point switches
Fanout buffers | Zero-delay buffers
Dividers | Multiplexers

Flip-flop/logic gates