



### Features and Benefits

- 2.5mm x 3.2m x 1.6mm compact SMD package
- Up to ±1ppm stability (over -40°C to +85°C)
- LVCMOS output
- 3.3V supply
- Integrated phase jitter performance of 1.5pS RMS
- Low power consumption

### Typical Applications

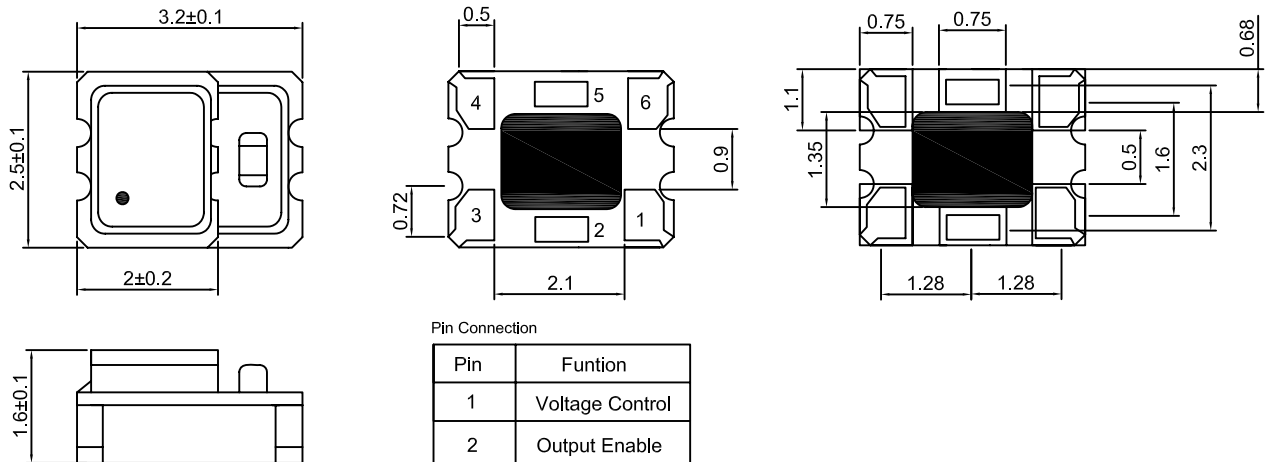
- WiMax, WLAN
- Telecommunication
- Mobile phone

### Description

Compact voltage controlled temperature compensated crystal oscillators with outstanding stability and phase jitter performance.

### Mechanical Drawing & Pin Connections

Drawing No:MD160046-1



Pin Connection

Pin	Funtion
1	Voltage Control
2	Output Enable
3	GND
4	Output
5	N.C.
6	Vcc

Unit: mm  
1mm=0.0394inch



**Specifications**

General Specifications at Ta = +25°C, CL = 15pFOscillator							
<b>Supply Voltage V<sub>DD</sub></b>		3.3V ±5%					
<b>Operating Frequency</b>		31.300000 MHz					
<b>Frequency Stability</b> Vs. Temperature (ref to +25°C)		±1.0 ppm over -40°C to +85°C					
Vs. Voltage (±5%) input change		±0.2 ppm max					
Vs. Load (±10%) condition change		±0.2 ppm max					
Vs. Aging (per year at 25°C)		1.0 ppm max					
Vs. Reflow (1 reflow and measured 24 hours afterwards)		1.0 ppm max					
<b>Current Consumption</b> All values are typical and over the operating temperature		V <sub>DD</sub> = +3.3V 50 MHz : 26 mA 125 MHz : 30 mA 200 MHz : 34mA					
<b>Current with Output Disabled</b>		18 mA (typical)					
<b>Load</b>		15 pF					
<b>Output Logic</b> High "1" Low "0"		90% V <sub>DD</sub> 10% V <sub>DD</sub>					
<b>Rise Time / Fall Time</b>		1.5 nS (typical), 3.0 nS (max) Tr / Tf: 10% ↔ 90% waveform					
<b>Initial Calibration Tolerance</b>		±1.0 ppm max at +25°C ±2°C (at shipment)					
<b>Phase Noise</b> [dBc / Hz (typical)]	Offset	<b>77.76</b>	<b>156.25</b>	<b>212.5</b>	<b>622.08</b>	<b>1000</b>	<b>1250</b>
	10 Hz	-62	-65	-61	-51	-40	-43
	100 Hz	-100	-92	-90	-79	-73	-75
	1 KHz	-116	-108	-106	-97	-91	-88
	10 KHz	-122	-114	-110	-102	-99	-95
	100 KHz	-124	-117	-112	-103	-99	-96
	1 MHz	-144	-139	-133	-125	-121	-117
	10 MHz	-152	-147	-142	-134	-129	-127
<b>Phase Jitter</b> (12 KHz – 20 MHz, RMS) unit ps		0.9	0.9	1.2	1.1	1.1	1.2
<b>Duty Cycle</b>		50% ±5%					
<b>Start-up Time</b>		5m sec max					
<b>Aging at Ta = +25°C</b>		±2 ppm max, first year at +25°C., ±10 ppm max. over 10 years					
<b>Storage Temperature</b>		-55°C to +150°C					
Control Voltage Function on Pad 1				Output Enable Function on Pad 2			
<b>Control Voltage Center and Range</b>	+1.5V ±1.0V for V <sub>DD</sub> = 3.3V			<b>OE Control on Pad 2</b>	0.7 of V <sub>DD</sub> (min.) or no connection to enable output. LVCMOS / LVTTTL level.		
<b>Frequency Pulling Range</b>	±8 ppm min.				0.3 of V <sub>DD</sub> (max.) to disable output (high impedance). LVCMOS / LVTTTL level.		
<b>Linearity</b>	±1% typical. ±10% max			<b>Output Enable Time / Disable Time</b>	200 nS Max / 50 nS Max		
<b>Transfer Function</b>	Positive Transfer			<b>Integrated Phase Jitter</b>	1.5 pS typical (12 KHz to 20 MHz)		
<b>Absolute Voltage</b>	4.0V max				<400 fS (1.875 KHz to 21 MHz)		
<b>Input Impedance</b>	770 kΩ typical						
<b>Harmonics</b>	-5.0 dBc max.						

Other customized specifications maybe available. Please contact Dynamic Engineers Inc. for further details.