



### Features and Benefits

- Frequency Range from 10 MHz to 1450 MHz
- 2.5 mm x 3.2 mm x 1.6mm compact SMD package
- Up to ±0.5 ppm stability (depends on operating temperature)
- LVPECL output
- 2.5V or 3.3V supply
- Integrated phase jitter performance of 1.5 pS RMS
- Low power consumption

### Typical Applications

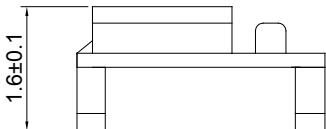
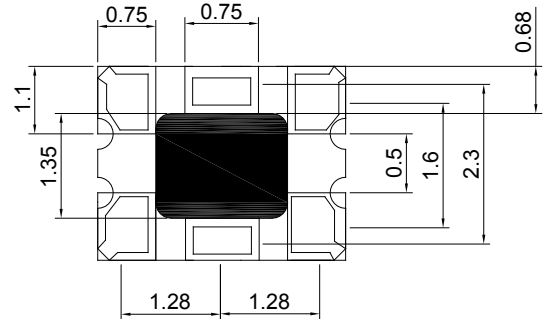
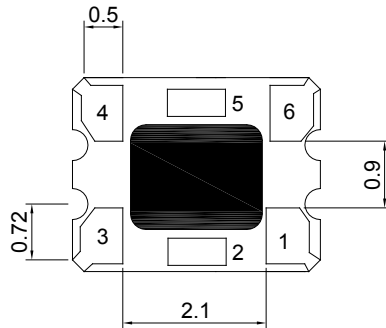
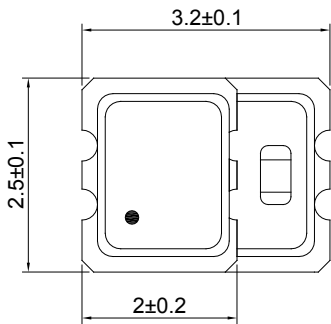
- WiMAX, WLAN
- Telecommunication
- Mobile phone

### Description

A new series of compact voltage controlled temperature compensated crystal oscillators with the latest low noise integrated circuit topologies.

### Mechanical Drawing & Pin Connections

Drawing No:MD160046-1



Pin Connection

Pin	Funtion
1	Voltage Control
2	Output Enable
3	GND
4	Differential
5	Complimentary
6	Vcc

Unit : mm  
1mm=0.0394inch



## Specifications

General Specifications at Ta = +25°C, CL = 15pF							
		Min.	Max.	Min.	Max.		
<b>Supply Voltage V<sub>DD</sub></b>		2.5V ±5%		3.3V ±5%			
<b>Frequency Range</b>		10MHz	1450MHz	10MHz	1450MHz		
<b>Frequency Stability</b> Vs. Temperature (ref to +25°C)		±2.5 ppm over -30°C to +85°C (default) ±0.5 ppm over -30°C to +85°C (available) ±1.0 ppm over -40°C to +85°C (available)					
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 temperatures		V <sub>DD</sub> = +2.5V 156 MHz : 36 mA 600 MHz : 40 mA 800 MHz : 46 mA 1G MHz : 50 mA			V <sub>DD</sub> = +3.3V 156 MHz : 40 mA 600 MHz : 45 mA 800 MHz : 48 mA 1G MHz : 52 mA		
<b>Current with Output Disabled</b>		18 mA (typical)					
<b>Load</b>		Differential					
<b>Output Logic</b> High "1" Low "0"		V <sub>DD</sub> -1.03 (min.), V <sub>DD</sub> -0.60 (max.) V <sub>DD</sub> -1.85 (min.), V <sub>DD</sub> -1.60 (max.)					
<b>Rise Time / Fall Time</b>		0.2nS (typical), 0.5nS (max) Tr / Tf : 20% ↔ 80% 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	-889
	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	
Phase Jitter (12KHz ~ 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 both V <sub>DD</sub> = 2.5V and 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>	770KΩ typical		
<b>Harmonics</b>	-5.0 dBc max.		

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