



### Features and Benefits

- Typical 7.0x5.0 mm ceramic SMD package
- Low jitter performance
- Output frequency up to 320MHz
- Operating temperature up to 125°C
- Tri-state enable/disable

### Typical Applications

- 10Gbit Ethernet, Fiber Channel, Storage Area Network
- SONET- Enterprise Servers, Reference clocks for ADC and DAC
- Telecom, xDSL, WLAN, Notebook, PDA, VGA card

### CMOS Specifications

Specification	Conditon	3.3V		2.5V		1.8V		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation	$V_{DD} \pm 10\%$	2.97	3.63	2.25	2.75	1.62	1.98	V
Frequency Range		0.0137	166	0.0137	133	0.0137	125	MHz
Standard Frequency		2.048, 25, 26, 27, 50, 66, 667, 100, 125						MHz
Supply Current	$13.7\text{KHz} \leq F_o \leq 70\text{KHz}$	-	1	-	1	-	1	mA
	$0.3125\text{MHz} \leq F_o < 35.328\text{MHz}$	-	10	-	8	-	7	
	$30\text{MHz} \leq F_o < 75\text{MHz}$	-	20	-	18	-	15	
	$75\text{MHz} \leq F_o < 133\text{MHz}$	-	35	-	30	-	25	
	$133\text{MHz} \leq F_o$	-	45	-	40	-	-	
Output Level(CMOS)	Output High	2.97	-	2.25	-	1.62	-	V
	Output Low	-	0.33	-	0.25	-	0.18	
Transition Rise/Fall Time*	$13.7\text{KHz} \leq F_o \leq 70\text{KHz}$	-	50	-	50	-	50	nSec
	$0.3125\text{MHz} \leq F_o < 100\text{MHz}$	-	5	-	5	-	5	
	$100\text{MHz} \leq F_o$	-	3	-	3	-	3	
Start Time		-	5	-	5	-	5	mSec
Output Drive Capability		-	15	-	15	-	15	pF
Tri-State(Input to Pin1)	Enable (High voltage or floating)	2.31	-	1.75	-	1.26	-	V
	Disable (Low voltage or GND)	-	0.99	-	0.75	-	0.54	
Period Jitter(Pk-Pk)		-	40	-	40	-	40	pSec
RMS Phase Jitter	Integrated 12KHz to 20MHz	-	1	-	1	-	1	pSec
Standby Current		-	10	-	10	-	10	uA
Aging	@25°C 1 <sup>st</sup> year	-	±3	-	±3	-	±3	ppm
Storage Temp. Range		-55°C to +125°C						°C

Note: \*Transition times are measured between 10% and 90% of  $V_{DD}$  with an output load of 15pF

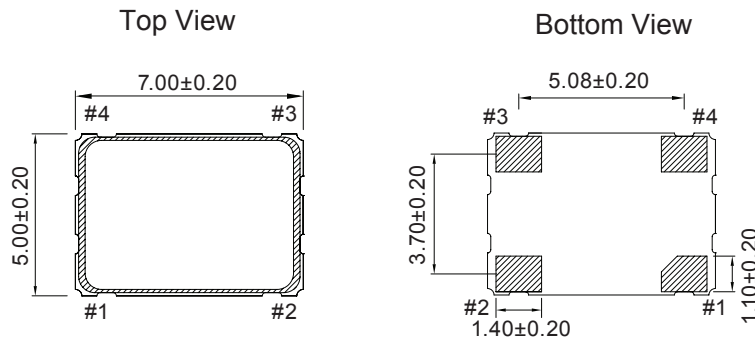


**Frequency Stability vs. Temperature (CMOS)**

	<b>±20PPM</b>	<b>±25PPM</b>	<b>±50PPM</b>
<b>-10°C to +60°C</b>	Available	Available	Available
<b>-20°C to +70°C</b>	Conditional	Available	Available
<b>-40°C to +85°C</b>	Conditional	Available	Available
<b>-40°C to +125°C</b>	Not Available	Not Available	Available

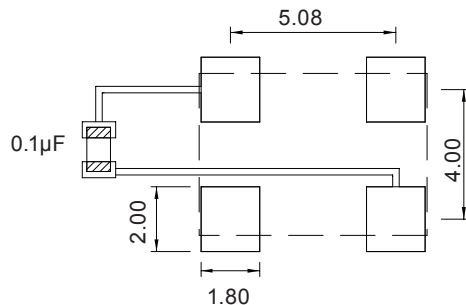
**Mechanical Drawing & Pin Connections**

**Drawing No: MD150027-1**



Pin#	Function
1	Tri-State
2	GND
3	Output
4	VDD

Unit in mm  
 1mm = 0.0394 inches



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.



**LVPECL/LVDS Specifications**

Specification	Conditon	LVPECL				LVDS				Unit
		3.3V		2.5V		3.3V		2.5V		
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
<b>Supply Voltage Variation</b>	V <sub>DD</sub> ±5%	3.135	3.465	2.375	2.625	3.135	3.465	2.375	2.625	V
<b>Frequency Range</b>		10	320	10	320	10	320	10	320	MHz
<b>Standard Frequency</b>		77.76, 106.25, 125, 155.52, 156.25, 187.5, 212.5, 312.5								MHz
<b>Supply Current</b>	10MHz ≤ F <sub>o</sub> < 160MHz	-	75	-	75	-	50	-	50	mA
	160MHz ≤ F <sub>o</sub> < 250MHz	-	100	-	100	-	50	-	50	
	250MHz ≤ F <sub>o</sub> ≤ 320MHz	-	100	-	100	-	65	-	65	
<b>Output Level</b>	Output High	2.275	-	1.475	-	-	1.6	-	1.6	V
	Output Low	-	1.68	-	0.88	0.9	-	0.9	-	
<b>Transition Rise/Fall Time*</b>		-	1.0	-	1.0	-	1.0	-	1.0	nSec
<b>Start Time</b>		-	2	-	2	-	2	-	2	mSec
<b>Tri-State(Input to Pin1 or Pin2)</b>	Enable (High voltage or floating)	2.31	-	1.75	-	2.31	-	1.75	-	V
	Disable (Low voltage or GND)	-	0.99	-	0.75	-	0.99	-	0.75	
<b>RMS Phase Jitter (Integrated 12KHz to 20MHz)</b>	F <sub>o</sub> < 80MHz	-	1	-	1	-	1	-	1	pSec
	80MHz ≤ F <sub>o</sub> < 125MHz	-	0.5	-	0.5	-	0.5	-	0.5	
	125MHz ≤ F <sub>o</sub> < 170MHz	-	0.3	-	0.3	-	0.3	-	0.3	
	170MHz ≤ F <sub>o</sub> < 200MHz	-	0.5	-	0.5	-	0.5	-	0.5	
	200MHz ≤ F <sub>o</sub>	-	0.3	-	0.3	-	0.3	-	0.3	
<b>Phase Noise @156.25MHz</b>	@100Hz	-100		-100		-100		-100		dBc/Hz
	@1KHz	-130		-130		-130		-130		
	@10KHz	-145		-145		-145		-145		
<b>Aging</b>	@25°C 1 <sup>st</sup> year	-	±3	-	±3	-	±3	-	±3	ppm
<b>Storage Temp. Range</b>		-55°C to +125°C								°C

Note: \*Transition times are measured between 20% and 80% of V<sub>DD</sub>



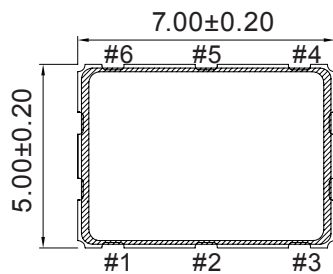
**Frequency Stability vs. Temperature (LVPECL/LVDS)**

	<b>±2) PPM</b>	<b>±50PPM</b>
<b>-10°C to +60°C</b>	Available	Available
<b>-20°C to +70°C</b>	Available	Available
<b>-40°C to +85°C</b>	Conditional	Available
<b>-40°C to +125°C</b>	Not Available	Available

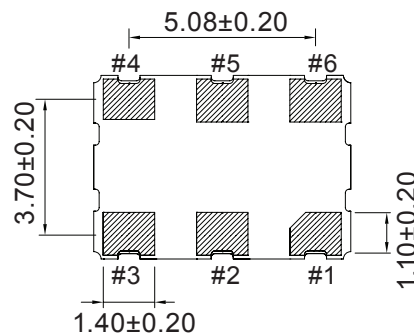
**Mechanical Drawing & Pin Connections**

**Drawing No: MD180005-1**

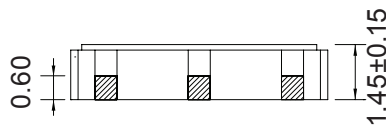
Top View



Bottom View

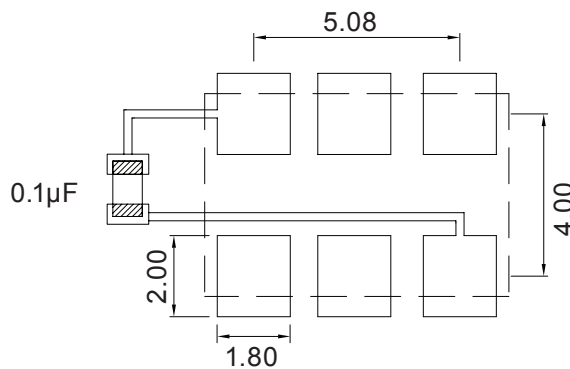


Side View



Pin#	Function	
1	NC	Tri-State
2	Tri-State	NC
3	GND	
4	Output	
5	Comp.Output	
6	VDD	

Unit in mm  
 1mm = 0.0394 inches



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.