



## Stratum 3 Oven Controlled Oscillators

March 2007

- Ovenized quartz crystal high precision square wave generator with a CMOS output.
- 3.3V or 5.0V operation available
- Tube packaging is available.
- 10 to 40 MHz
- Full Size Thru-Hole DIP package
- Electronic Frequency Control (EFC) optional
- Low Jitter - Good phase noise characteristics

**Pletronics Inc. certifies this device is in accordance with the  
RoHS 6/6 (2002/95/EC) and WEEE (2002/96/EC) directives.**

Pletronics Inc. guarantees the device does not contain the following:  
Cadmium, Hexavalent Chromium, Lead, Mercury, PBB's, PBDE's  
Weight of the Device: 6.2 grams  
Moisture Sensitivity Level: 1 As defined in J-STD-020C  
Second Level Interconnect code: e1

### Absolute Maximum Ratings:

Parameter	Unit
V <sub>CC</sub> Supply Voltage	-0.5V to +7.0V
V <sub>i</sub> Input Voltage	-0.5V to V <sub>CC</sub> + 0.5V
V <sub>o</sub> Output Voltage	-0.5V to V <sub>CC</sub> + 0.5V

### Reliability: Environmental Compliance

Parameter	Condition
Vibration	10 to 2000 Hz / 10 g
Shock	2000 g, 0.3 mS, ½ sine
Solderability	MIL-STD-883 Method 2003
Thermal Shock	MIL-STD-883 Method 1011, Condition A



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**Part Number:**

OHM4	048052	LKST3	000	- 19.44M	-XX	
						Internal code or blank
						<b>Frequency MHZ (Standards Shown)</b> 12.800 16.384 19.440 20.000 40.000
						<b>Electronic Frequency Control</b> <b>000</b> = No EFC (Standard) <b>020</b> = $\pm 2.0$ ppm minimum <b>040</b> = $\pm 4.0$ ppm minimum <b>150</b> = $\pm 15.0$ ppm minimum <b>999</b> = $\pm 4.0$ ppm with 0 to 10K ohm
						<b>Stratum 3</b>
						<b>Supply Voltage</b> <b>048052</b> = 5.0V $\pm$ 0.20V operation <b>031035</b> = 3.3V $\pm$ 0.20V operation
						<b>Series Model</b>

**Part Marking:**

PLE	or	PLE	Where: c = N for no EFC, R for resistor, V for voltage
OHM4050c		OHM403c	fff.fff = Frequency in MHz
fff.fff M		fff.fff M	Ymda = Date code (Year Month Day plus internal code)
ymdann		ymdann	nnn = Device number

Standard values are listed, consult Pletronics Inc. for other options. Specifications such as frequency stability and operating temperature range, etc. are not identified from the marking. External packaging labels and packing list will correctly identify the ordered Pletronics part number.

**Codes for Date Code YMD**

Code	6	7	8	9	0	1	2
Year	2006	2007	2008	2009	2010	2011	2012

Code	A	B	C	D	E	F	G	H	J	K	L	M
Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Code	1	2	3	4	5	6	7	8	9	A	B	C
Day	1	2	3	4	5	6	7	8	9	10	11	12
Code	D	E	F	G	H	J	K	L	M	N	P	R
Day	13	14	15	16	17	18	19	20	21	22	23	24
Code	T	U	V	W	X	Y	Z					
Day	25	26	27	28	29	30	31					



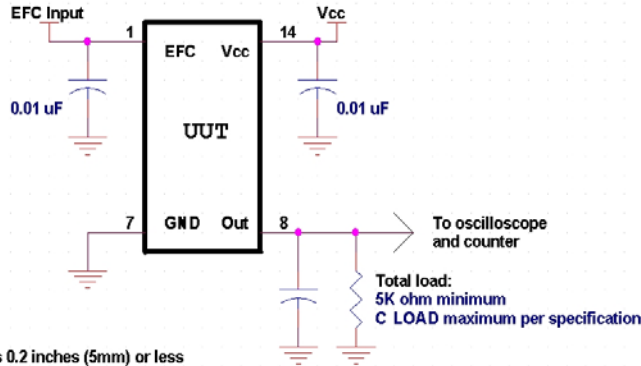
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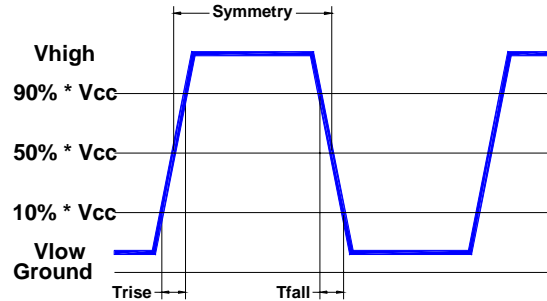
## Specification for 3.30V and 5.00V $\pm 0.20V$ over the specified temperature range

Item	Min	Max	Unit	Condition	
Frequency Range	10	40	MHz	See list of standard frequencies	
Frequency Accuracy vs. Temperature, Power Supply, Load and 15 years aging	-4.6	+4.6	ppm		
Frequency Stability for 24 hours vs. Temperature, Power Supply and Load	-0.28	+0.28	ppb		
Short Term Stability	-0.5	+0.5	ppb	0.1 second to 30 seconds	
	-0.05	+0.05	ppb	for 1 second	
Initial Calibration	-1.0	+1.0	ppm		
Phase Noise					
1 Hz	--	-70	dBc/Hz		
10 Hz	--	-100			
100 Hz	--	-130			
1,000Hz	--	-140			
Warmup	--	30	sec	within specification after turn on at 0°C	
Output Waveform	CMOS				
Output High Level	0.5	--	V	Below $V_{CC}$	See Load Circuit Clload = 45 pF
Output Low Level	--	0.4	V		
Output Symmetry	45	55	%	at 50% of $V_{CC}$	
$T_{rise}$ and $T_{fall}$	--	7	nS	10% to 90% of $V_{CC}$	
Power Supply Current	--	160	mA	$V_{CC} = 3.3V$	at -20°C
		70	mA	$V_{CC} = 5.0V$	
	--	110	mA	$V_{CC} = 3.3V$	at +30°C
		70	mA	$V_{CC} = 5.0v$	
	Warmup	--	250	mA	for 30 seconds maximum
Operating Temperature Range	-40	+85	°C		
Storage Temperature Range	-65	+125	°C		

## Load Circuit and Test Waveform



All leads 0.2 inches (5mm) or less



## ESD Rating

Model	Minimum Voltage	Conditions
Human Body Model	2000	MIL-STD-883 Method 3115
Charged Device Model	2000	JESD 22-C101

## Package Labeling

Label is 1" x 2.6" (25.4mm x 66.7mm)  
Font is Courier New  
Bar code is 39-Full ASCII

Label is 1" x 2.6" (25.4mm x 66.7mm)  
Font is Arial

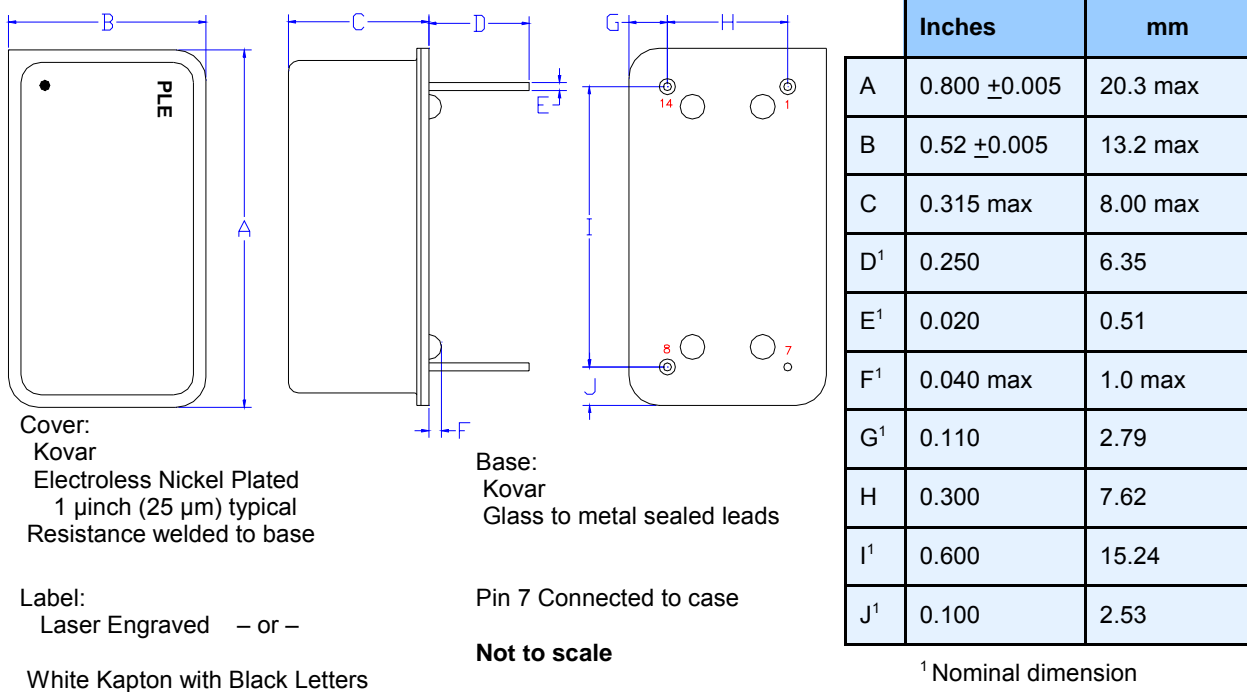
P/N:	
	OHM4048052GG010040-20.00M
Customer P/N:	
	12345678
Qty:	
	1000
D/C:	
	0510M012

RoHS Compliant
2nd Lvl Interconnect Category=e1
Max Safe Temp=250C for 10s Per Lead
Hand Solder Recommended

## PCB Mounting (typical for lead free processing)

Hand soldering is recommended at  $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for 5 seconds maximum per pin

### Mechanical:



Pin	Function	Note
1	EFC	Connected to Ground (standard) –OR– 10 K ohm to ground –OR– 0.5 to Vsupply control voltage, depends on option ordered. Use the 30% value for initial operation
7	Ground (GND)	
8	Output	
14	Supply Voltage (V <sub>CC</sub> )	Recommend connecting appropriate power supply bypass capacitors as close as possible.

### Layout and application information

For Optimum Jitter Performance, Pletronics recommends:

- Minimize air flow over the oscillator
- Stabilize the power supply voltage for best performance.



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