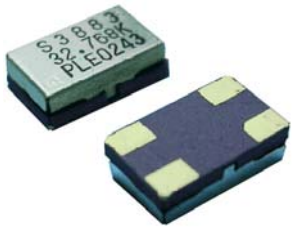
PLETRONICS
www.pletronics.com 425-776-1880



S3883 - 32.768K
CMOS Clock Oscillator

November 2008

- Pletronics' S3883 is a quartz crystal controlled precision square wave generator with a CMOS output.
- The package is designed for high density surface mount designs.
- This is a low cost mass produced oscillator.
- Tape and Reel packaging is available.
- 32.768 kHz
- 4 x 6.5 mm LCC Ceramic Package
- Enable/Disable Function on pad 1 with low power consumption
- **Fast Start-up Time of 500 mS or less**

Pletronics Inc. certifies this device is in accordance with the RoHS 5/6 (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: 0.2 grams
Moisture Sensitivity Level: 1 As defined in J-STD-020C
Second Level Interconnect code: e4

Absolute Maximum Ratings:

Parameter	Unit
V_{CC} Supply Voltage	-0.5V to +7.0V
Vi Input Voltage	-0.5V to V_{CC} + 0.5V
Vo Output Voltage	-0.5V to V_{CC} + 0.5V

Thermal Characteristics

The maximum die or junction temperature is 155°C
The thermal resistance junction to board is 30 to 50°C/Watt depending on the solder pads, ground plane and construction of the PCB.

Product information is current as of publication date. The product conforms to specifications per the terms of the Pletronics standard warranty. Production processsing does not necessarily include testing of all parameters.

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S3883 - 32.768K
CMOS Clock Oscillator
November 2008

Part Number:

S3883 E -32.768K -XX

-XX	**Packaging code or blank** T250 = 250 per cut Tape T500 = 500 per cut Tape T1K = 1000 per Tape and Reel
-32.768K	**Frequency in KHz**
E	**Optional Enhance OTR** Blank = -10°C to +60°C E = -40°C to +85°C
S3883	**Series Model**

Part Marking:

S3883		**S3883**	Where: *ywwa* or *ymd* = Date code
32.768K	or	**32.768K**	
PLE *ywwa*		**PLE *ymd***	

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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Reliability: Environmental Compliance

Parameter	Condition
Mechanical Shock	MIL-STD-883 Method 2002, Condition B
Vibration	MIL-STD-883 Method 2007, Condition A
Solderability	MIL-STD-883 Method 2003
Thermal Shock	MIL-STD-883 Method 1011, Condition A

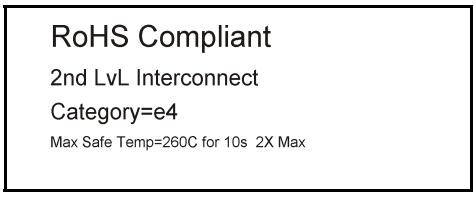
ESD Rating

Model	Minimum Voltage	Conditions
Human Body Model	1500	MIL-STD-883 Method 3115
Charged Device Model	1000	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



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Electrical Specification for Vcc 1.5V to 5.0V over - 10 to +60°C

Item	Min	Typ	Max	Unit	Condition	
Frequency		32.768		kHz		
Frequency Calibration Tolerance	-30	0	+30	ppm	at 25 °C	
Frequency Stability *	-60	-	+30	ppm	over -10 to +60 °C	
Output Waveform		CMOS				
Output High Level	90	-	-	%	of V_{CC} (See load circuit)	
Output Low Level	-	-	10	%	of V_{CC} (See load circuit)	
Output T_{RISE} and T_{FALL}	-	100	150	nS	C_{LOAD} = 15pF T_R / T_F 10% to 90% and D.C. at 50% point of V_{CC} (See load circuit)	
Output Symmetry	45	50	55	%		
Enable/Disable Internal Pull-up	1	-	-	Mohm	to V_{CC}	
V disable	-	-	30	%	of V_{CC} applied to pad 1	
V enable	70	-	-	%	of V_{CC} applied to pad 1	
Output leakage $V_{OUT} = V_{CC}$	-10	-	+10	uA	Pad 1 low, device disabled	
V_{OUT} = 0V	-10	-	+10	uA		
Supply Current (I_{CC})	-	3.3	9.0	uA	V_{CC} = 1.5V	C_{LOAD} = 15 pF
	-	4.0	10.0	uA	V_{CC} = 1.8V	
	-	4.2	11.0	uA	V_{CC} = 2.0V	
	-	5.0	12.0	uA	V_{CC} = 2.7V	
	-	6.0	15.0	uA	V_{CC} = 3.3V	
	-	8.0	20.0	uA	V_{CC} = 5.0V	
Standby Current I_{CC}	-	-	3	uA	Pad 1 low, device disabled	
Enable time	-	-	100	nS	Time for output to reach a logic state	
Disable time	-	-	100	nS	Time for output to reach a high Z state	
Start up time	-	-	500	mS	Time for output to reach specified frequency	
Operating Temperature Range	-10 -40	-	+60 +85	°C	Standard Optional “E”	
Storage Temperature Range	-55	-	+125	°C		

*For all supply voltages, load changes, aging for 1 year, shock, vibration and temperatures
Specifications with Pad 1 E/D open circuit

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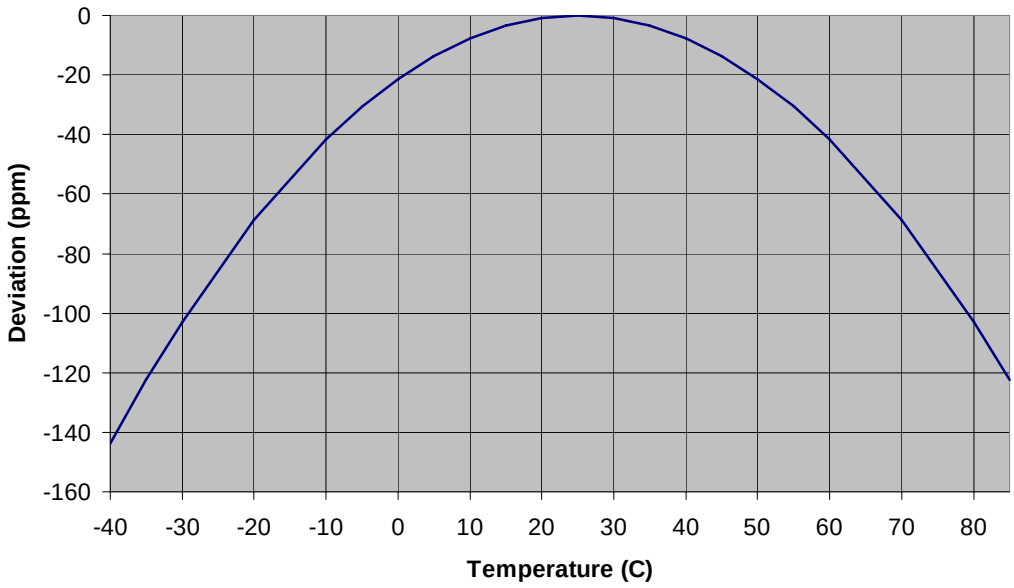
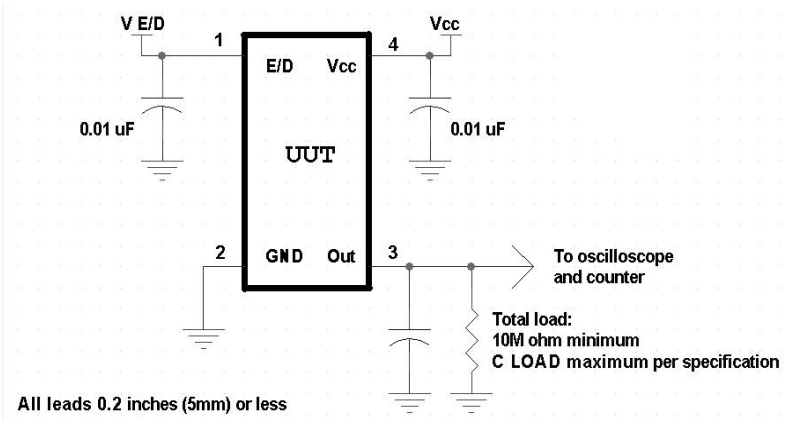
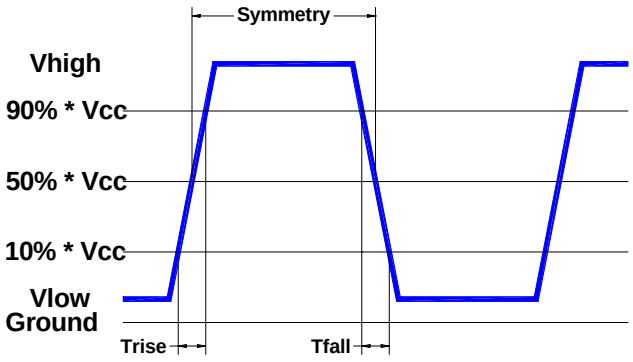
Typical Frequency versus Temperature Characteristics



Load Circuit and Test Waveform





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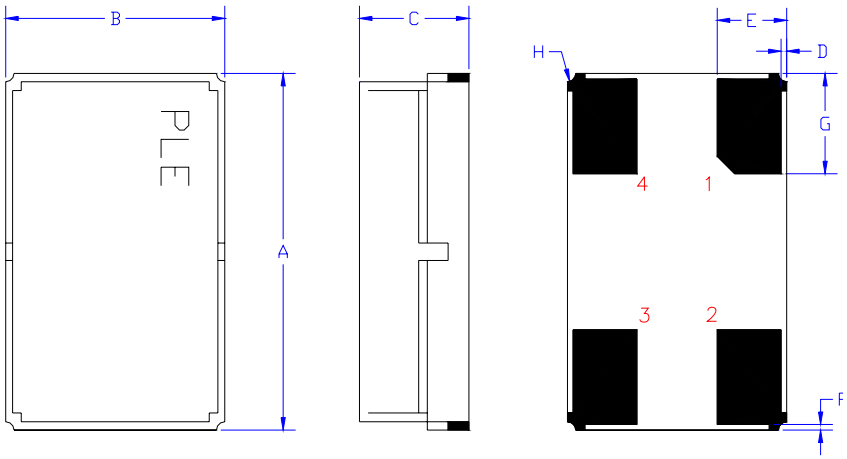
Mechanical:



	Inches	mm
A	0.256 ±0.008	6.50 ±0.20
B	0.158 ±0.008	4.01 ±0.20
C	0.074 ±0.008	1.87 ±0.20
D[1]	0.004	0.10
E[1]	0.050	1.27
F[1]	0.004	0.10
G[1]	0.072	1.83
H[1]	0.006	0.15

Not to Scale

[1] Typical dimensions

Contacts :
Gold 11.8 µinches 0.3 µm minimum over
Nickel 50 to 350 µinches 1.27 to 8.89 µm

Pad	Function	Note
1	Output Enable/Disable	When this pad is not connected the oscillator shall operate. When this pad is logic low the output will be inhibited (high impedance state.) Recommend connecting this pad to V_{CC} if the oscillator is to be always on.
2	Ground (GND)	
3	Output	
4	Supply Voltage (V_{CC})	Recommend connecting appropriate power supply bypass capacitors as close as possible.

Layout and application information

For Optimum Jitter Performance, Pletronics recommends:
- a ground plane under the device
- no large transient signals (both current and voltage) should be routed under the device
- do not layout near a large magnetic field such as a high frequency switching power supply
- do not place near piezoelectric buzzers or mechanical fans.

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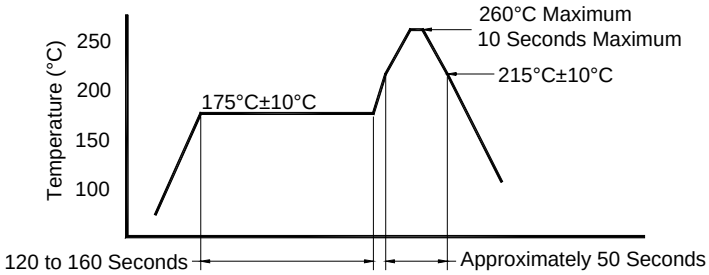
Reflow Cycle (typical for lead free processing)



The part may be reflowed 2 times without degradation.

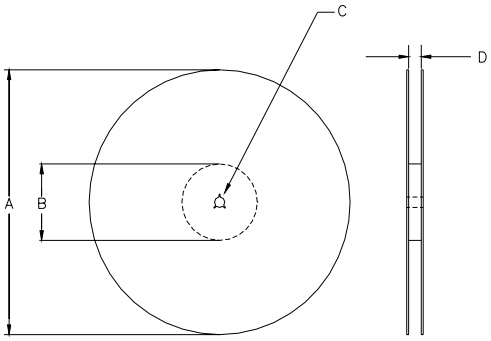
Allowed rate of temperature change
Maximum 4°C per second

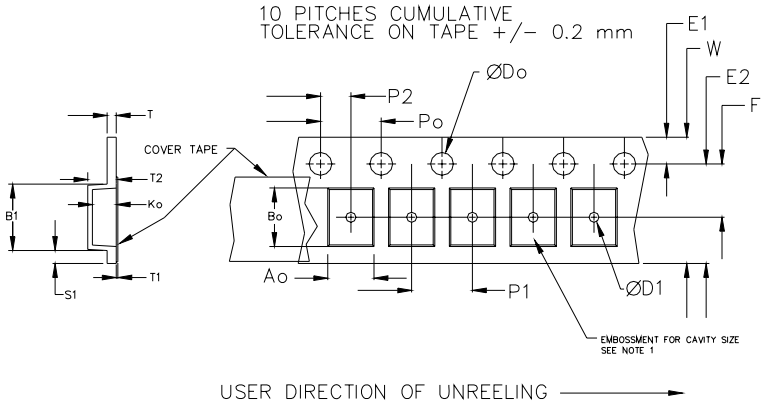
Tape and Reel: available for quantities of 1000 per reel, cut tape for < 1000

Constant Dimensions Table 1								
Tape Size	D0	D1 Min	E1	P0	P2	S1 Min	T Max	T1 Max
8mm	1.5 +0.1 -0.0	1.0	1.75 ±0.1	4.0 ±0.1	2.0 ±0.05	0.6	0.6	0.1
12mm		1.5						
16mm		1.5			2.0 ±0.1			
24mm		1.5						

Variable Dimensions Table 2							
Tape Size	B1 Max	E2 Min	F	P1	T2 Max	W Max	Ao, Bo & Ko
16 mm	12.1	14.25	7.5 ±0.1	8.0 ±0.1	8.0	16.3	Note 1

Note 1: Embossed cavity to conform to EIA-481-B Dimensions in mm Not to scale





		REEL DIMENSIONS			
A	inches	7.0	10.0	13.0	
	mm	177.8	254.0	330.2	
B	inches	2.50	4.00	3.75	
	mm	63.5	101.6	95.3	Tape Width
C	mm	13.0 +0.5 / -0.2			
D	mm	16.4 +2.0 -0.0	16.4 +2.0 -0.0	16.4 +2.0 -0.0	16.0

Reel dimensions may vary from the above

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