CRYSTEK CRYSTALS
A DIVISION OF CRYSTEK CORPORATION

RoHS Compliant

Clock Oscillator

C32xx/C39xx Model
5×7 mm SMD, 5V, HCMOS

Frequency Range:	1.544 MHz to 100.000 MHz
Frequency Stability Options:	±20*, ±25, ±50, ±100 (ppm)
Temperature Range: (standard)	0°C to +70°C
(Option "M")	-20°C to +70°C
(Option "E"*)	-40°C to +85°C
Storage Temperature:	-45°C to 90°C
Input Voltage:	5.0V ±0.5V
Input Current:	60mA Max
Standby Current:	10uA Max
Output:	HCMOS
Symmetry:	
(Standard "2")	40/60% Max @ 50% Vdd
(Option "9")	45/55% Max @ 50% Vdd
Rise/Fall Time:	6ns Max @ 20% to 80% Vdd
Logic:	"0" = 10% Vdd Max
	"1" = 90% Vdd Min
Disable Time:	200ns Max
Start-up Time:	10ms Max
Load:	30pF Max
Jitter RMS: 12kHz~20MHz	0.5ps Typical, 1ps Max
Sub-harmonics:	None
Aging:	<3ppm 1st year, <1ppm every year thereafter

*available in select frequencies -40/85

Model C32xx/C39xx is a 1.544 MHz to 100.000 MHz HCMOS Clock Oscillator operating at 5.0 Volts. The oscillator utilizes Fundamental or High Q Third Overtone crystal design providing very low Jitter and Phase Noise. No Sub-Harmonics are present in the Output Signal.

Applications:
Digital Video
SONET/SDH/DWDM
Storage Area Networks
Broadband Access
Ethernet, Gigabit Ethernet

Mechanical:
Shock: MIL-STD-883, Method 2002, Condition B
Vibration: MIL-STD-883, Method 2007, Condition A
Solderability: MIL-STD-883, Method 2003
Solvent Resistance: MIL-STD-202, Method 215
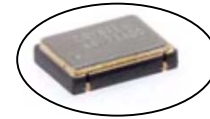Resistance to Soldering Heat: MIL-STD-202, Method 210, Condition I or J

Environmental:
Thermal Shock: MIL-STD-883, Method 1011, Condition A
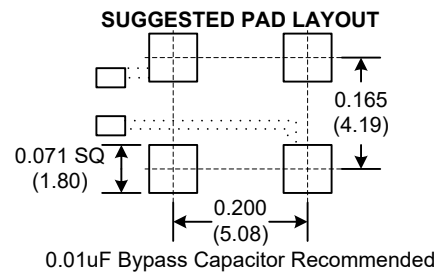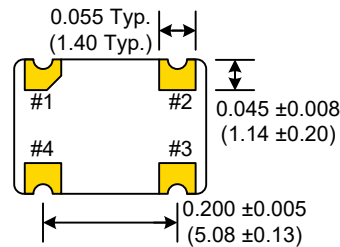Moisture Resistance: MIL-STD-883, Method 1004

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C32xx/C39xx Model
5×7 mm SMD, 5V, HCMOS

0.283
(7.20)

P/N YYWW
Frequency
XX

0.205
(5.20)

Denotes pad 1

YYWW=Date Code   XX=Lot Code

0.071
(1.80)

0.055 Typ.
(1.40 Typ.)

#1   #2

0.045 ±0.008
(1.14 ±0.20)

#4   #3

0.200 ±0.005
(5.08 ±0.13)

SUGGESTED PAD LAYOUT

0.165
(4.19)

0.071 SQ
(1.80)

0.200
(5.08)

0.01uF Bypass Capacitor Recommended

Dimensions inches (mm)
All dimensions are Max unless otherwise specified.

Enable/Disable	
Function pin 1	Output pin
Open	Active
"1" level 0.7×Vcc Min	Active
"0" level 0.3×Vcc Max	High Z

PIN	Function
1	E/D
2	GND
3	OUT
4	Vcc

Crystek Part Number Guide

C X 3 X 9 X - 44.736MHz
#1 #2 #3   #4

#1 Temp. Range: Blank = 0/70°C, M = -20/70°C, E = -40/85°C
#2 Symmetry: 2 = 40/60%, 9 = 45/55%
#3 Stability: (see Table 1)
#4 Frequency in MHz: 3 or 6 decimal places

Stability Indicator	
0	±100ppm
2	± 50ppm
1	± 25ppm
8*	± 20ppm

*available in select frequencies -40/85

Table 1

Example:
C3292-44.736MHz = 5.0V, 0/70°C, 40/60%, ±50ppm, 44.736MHz
CM3991-44.736MHz = 5.0V, -20/70°C, 45/55%, ±25ppm, 44.736MHz
CE3290-44.736MHz = 5.0V, -40/85°C, 40/60%, ±100ppm, 44.736MHz

RECOMMENDED REFLOW SOLDERING PROFILE

Ramp-Up 3°C/Sec Max.
Critical Temperature Zone
Ramp-Down 6°C/Sec.

TEMPERATURE

260°C
217°C
200°C
150°C

Preheat 180 Secs. Max.
90 Secs. Max.
8 Minutes Max.
260°C for 10 Secs. Max.

NOTE: Reflow Profile with 240°C peak also acceptable.

TEST CIRCUIT

mA M

PWR Supply

VM

Bypass Cap.

pin 4   pin 3
Vcc   OUT
OSC.
E/D   GND
pin 1   pin 2

OUT
O/P Load incl Probe Cl

High Impedance GND or "LOW"
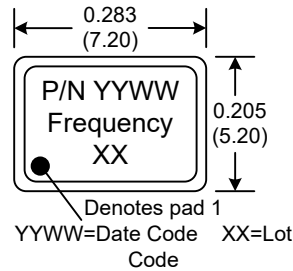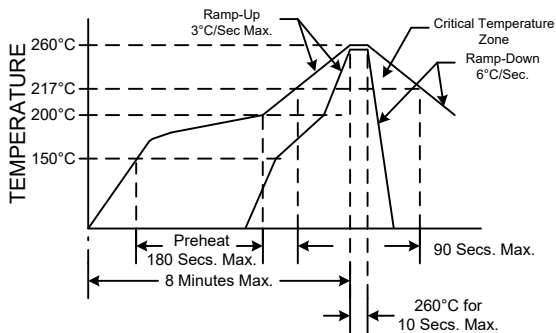Output Pin: Active OPEN or "HIGH"
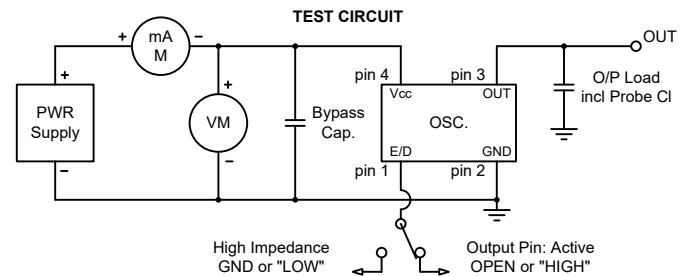
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Page 2 of 2

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