CM SERIES:
CLOCK OSCILLATOR, CMOS FOR SPREAD SPECTRUM APPLICATIONS

- **For Reduced EMI Applications**

n ELECTRICAL PARAMETERS:

PARAMETER	SYMBOL	TEST CONDITIONS*1	VALUE	UNIT
Nominal Frequency	fo		10.000 ~ 160.000	MHz
Supply Voltage	Vcc		+3.3 or +5.0 ±5%	VDC
Supply Current	Is		45.0 MAX *2	mA
Output Logic Type			HCMOS	
Load			15 TYP	pF
Output Voltage Levels	Voh / Vol		0.9•Vcc / 0.1•Vcc	VDC
Duty Cycle	DC	Measured at 50% of Vcc	40/60 to 60/40	%
Rise / Fall Time	tr / tf	Measured at 20/80% and 80/20% Vcc Levels	1.5 TYP *2	ns
Jitter	J	1σ	40 TYP	ps
Overall Frequency Stability	Δf/fc	Op. Temp., Aging, Load, Supply and Cal. Variations	±25, ±50, or ±100 MAX	ppm
Output Enabled Output Disabled	En Dis	High Voltage or No Connect Ground (Output = High Impedance)	0.7•Vcc MIN 0.3•Vcc MAX	VDC VDC
EMI Peak Freq. Reduction		3rd to 19th Odd Harmonic	7 ~ 14	dB
Absolute voltage range	Vcc(abs)	Non-Destructive	-0.5…+7.0	VDC

*1 Test Conditions Unless Stated Otherwise: Nominal Vcc, Nominal Load, +25 ±3°C
*2 Frequency Dependent

n ENVIRONMENTAL PARAMETERS:

PARAMETER	SYMBOL	TESTCONDITIONS*1	VALUE	UNIT
Operating temperature range	Ta		SEE PART NUMBER TABLE	°C
Storage temperature range	T(stg)		-55…+125	°C

n PART NUMBERING SYSTEM:

SERIES	PACKAGE	FREQUENCY STABILITY (Overall)	TEMPERATURE RANGE (°C)	VOLTAGE SUPPLY	FREQUENCY (MHz)	MODULATION DIRECTION & MODULATION RATE CODE
CM: Spread Spectrum with HCMOS Output	07: 7x5 mm 11: 11.4x9.6 mm 14: 14x9 mm	I: ±25 ppm H: ±50 ppm J: ±100 ppm	LV: 0…+50 LZ: 0…+70 HZ: -20…+70 D3: -40…+85	33: +3.3 VDC 50: +5.0 VDC	10.000…160.000	See Table Below

MODULATION DIRECTION AND MODULATION RATE:

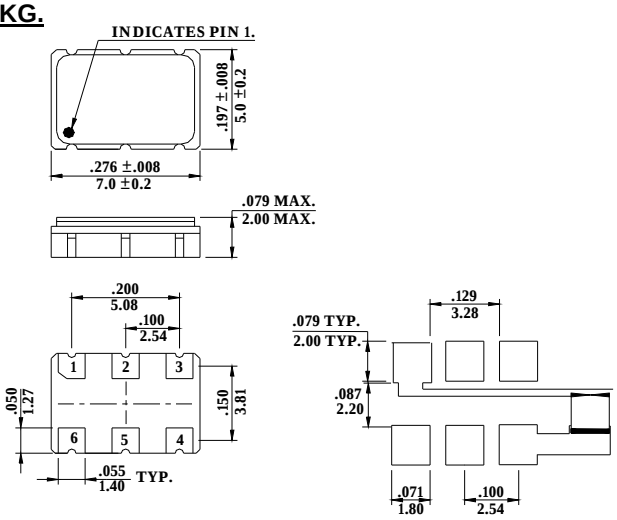
DOWN SPREAD		CENTER SPREAD		DOWN AND CENTER SPREAD	
CODE	RATE %	CODE	RATE %	CODE	RATE %
D100	-1.00	C050	±0.50	D25C075	+0.25/-0.75%
D150	-1.50	C075	±0.75	D25C125	+0.25/-1.00%
D250	-2.50	C100	±1.00	D25C150	+0.25/-1.25%
		C125	±1.25	D25C200	+0.25/-2.00%
				D50C100	+0.50/-1.00%
				D50C150	+0.50/-1.50%
				D50C300	+0.50/-3.00%

EXAMPLE: CM11-LZH-33-155.520-D150

Spread Spectrum Oscillator, HCMOS Output, 11.4x9.6 mm Package, 0…+70°C Operating Temperature Range, ±50 ppm Total Frequency Stability, +3.3 VDC Supply Voltage, 155.52 MHz, Downspread –1.50% Modulation.

n MECHANICAL SPECIFICATION

7 x 5 mm PKG.



SOLDER PATTERN

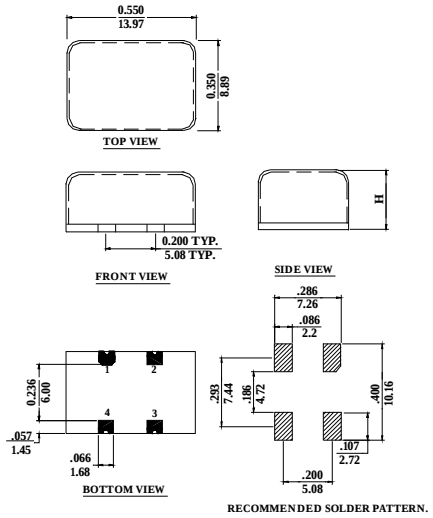
OUTLINE TOLERANCE:
±0.015" / 0.4mm
(Unless otherwise specified)

PIN FUNCTIONS:
[1] ENABLE/DISABLE
[2] NO CONNECT
[3] CASE/GROUND
[4] OUTPUT
[5] NO CONNECT
[6] Vcc

EXAMPLE MARKING:
CP07-LZH
155D150
RAL D/C

***0.01mF external by-pass filter is recommended as seen on solder pattern.**

14 x 9 mm PKG.



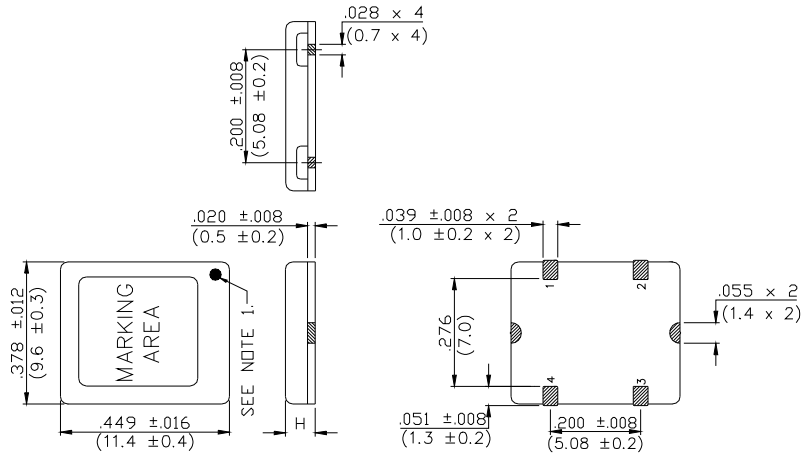
OUTLINE TOLERANCE:
±0.015" / 0.4mm
(Unless otherwise specified)

H = T.B.D.

PIN FUNCTIONS (6 pins):
[1] ENABLE/DISABLE
[2] NO CONNECT
[3] CASE/GROUND
[4] OUTPUT
[5] NO CONNECT
[6] Vcc

EXAMPLE MARKING:
CP14-LZH-33
155.52D150
RAL D/C

11.4 x 9.6 mm PKG.



OUTLINE TOLERANCE:
±0.015" / 0.4mm
(Unless otherwise specified)

H = T.B.D.

PIN FUNCTIONS:
[1] ENABLE/DISABLE
[2] CASE/GROUND
[3] OUTPUT
[4] Vcc

MARKING (EXAMPLE):
CP11-LZH-33
155.52D125
RAL D/C