

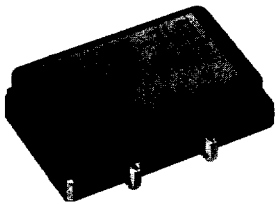
NEL Crystal Clock Oscillators

SURFACE MOUNT-CMOS

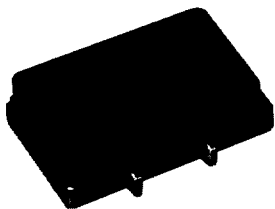
AVAILABLE FROM 25 MHZ TO 150 MHZ

HJ-360, HJ-370 Series

HJ-1400 Series (Enable/Disable)



HJ-360, HJ-370 Series

HJ-1400 Series
(Enable/Disable)

Description

The HJ-360 Series & HJ-370 Series of quartz crystal clock oscillators are general purpose CMOS oscillators (including 4000 series CMOS, AC MOS, MOS, HCMOS, 74C, 74HC, & NMOS).

The HJ-1410 Series & HJ-1420 Series of quartz crystal oscillators provide an enable/disable three-state TTL compatible signal for bus connected systems. Supplying pin 1 of the HJ-1410 units with a logic "1" enables its pin 8 output. In the disable mode, pin 8 presents a high impedance to the output.

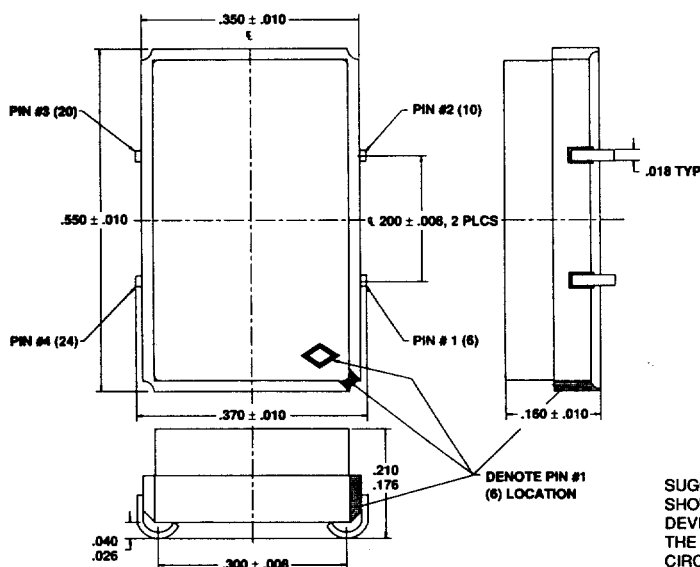
Features

- ☐ Hermetically sealed ceramic SMD package
- ☐ J-lead termination
- ☐ .200" x .300" footprint
- ☐ Solderable at 260°C for 10 seconds
- ☐ Shock resistance to 3000 Gs

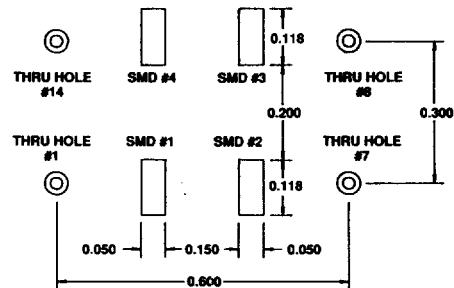
NEL TYPE, FREQUENCY RANGE, PIN CONNECTIONS

NEL OSC. TYPE	FREQUENCY RANGE	PIN CONNECTIONS (Jedec/Crystal Industry)				ENABLE	
		6/1	10/2	20/3	24/4	LOG. 1	LOG. 0
HJ-360	80 to 150 MHz	N/C	GRD	OUTPUT	V _{DD}	N/A	N/A
HJ-370	25 to 80 MHz	N/C	GRD	OUTPUT	V _{DD}	N/A	N/A
HJ-1410	80 to 150 MHz	EN/DIS.	GRD	OUTPUT	V _{DD}	X	-
HJ-1420	25 to 80 MHz	EN/DIS.	GRD	OUTPUT	V _{DD}	X	-

PACKAGE OUTLINE AND DIMENSIONS



SUGGESTED SOLDER PAD LAYOUT



SUGGESTED PAD LAYOUT FOR THE NEL HJ SERIES OF CLOCK OSCILLATORS. ALSO SHOWN IS PLACEMENT OF THE PLATED HOLES FOR A 14 PIN COMPATIBLE THRU HOLE DEVICE. THIS IS NOT INTENDED AS A REQUIREMENT BUT AS A GUIDE TO BE MODIFIED BY THE END USER PER THEIR STANDARD SMD PC BOARD LAYOUT TECHNIQUES FOR RF CIRCUITS. GOOD HIGH FREQUENCY POWER SUPPLY DECOUPLING IS ENCOURAGED.

Crystal Clock Oscillators



CMOS Operating Conditions and Output Characteristics

		HJ-360/HJ-1410		HJ-370/HJ-1420	
PARAMETER	CONDITIONS	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
General Characteristics					
Supply voltage	V _{DD} ²	4.75 V	5.25 V	4.75 V	5.25 V
	Breakdown	−0.5 V	7.0 V ¹	−0.5 V	7.0 V ¹
Supply current (I _{CC})	No output load				
	@100 MHz	0.0 mA	80 mA		
	—			0.0 mA	50 mA
Output current (I _O)	—	0.0 mA	16 mA	0.0 mA	16 mA
Operating temperature (T _A) ³	—	0° C	70° C	0° C	70° C
Storage temperature (T _S)	—	−55° C	+125° C	−55° C	+125° C
Power dissipation (P _D)	—	—	450 mW	—	400 mW
Lead temperature (T _L)	Soldering, 10s	—	300° C	—	300° C

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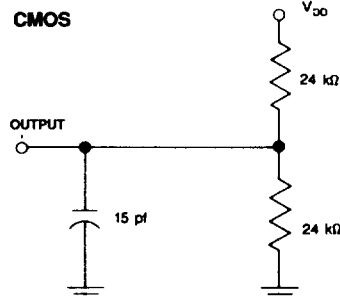
Output Characteristics

Frequency	—	80 MHz	150 MHz	25 MHz	80 MHz
Tolerance	User specified	±.005%	—	±.005%	—
Symmetry	@ 0.5 V_{DD}	40/60%	60/40%	40/60%	60/40%
Logic 0 (V_{OL})	Driving equiv. load	—	0.2 V	—	0.2 V
Logic 1 (V_{OH})	Driving equiv. load	$V_{DD}-0.2$ V	—	$V_{DD}-0.2$ V	—
Logic 0 (I_{OL} sink)	Driving equiv. load	—	600 μ A	—	600 μ A
Logic 1 (I_{OH} source)	Driving equiv. load	—	400 μ A	—	400 μ A
Rise & fall time (t_r, t_f)	@10% to 90% of V_{DD}	—	5 ns	—	5 ns
3-state enable/disable time (t_{p2})	(HJ-360 & HJ-370) (HJ-1410 & HJ-1420)	N/A —	N/A 25 ns	N/A —	N/A 25 ns

Footnotes:

1. Overvoltage causes the oscillator to draw extreme current, and damage occurs.
2. Lower voltage operation option to 3 V available.
3. -55°C to +125°C available for some frequencies.

Equivalent Load



This information is believed to be reliable at the time of printing; no responsibility is assumed for inaccuracies. NEL Frequency Controls reserves the right to make changes at any time.

Output Waveform

