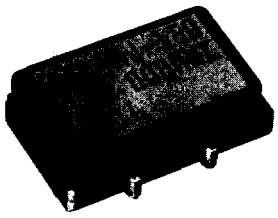
NEL Crystal Clock Oscillators

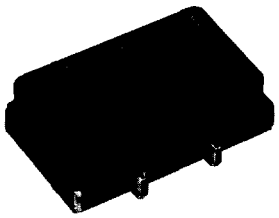
SURFACE MOUNT-TTL
AVAILABLE FROM 25 MHZ TO 150 MHZ

HJ-150, HJ-160 Series

HJ-1500 Series (Enable/Disable)



HJ-150, HJ-160 Series



HJ-1500 Series (Enable/Disable)

Description

The HJ-150 Series & HJ-160 Series of quartz crystal clock oscillators are general purpose TTL & STTL compatible units.

The HJ-1510 Series & HJ-1520 Series of quartz crystal oscillators provide enable/disable three-state TTL compatible signals for bus connected systems. Supplying pin 1 of the HJ-1510 units with a logic "1" enables its pin 8 output. In the disable mode, pin 8 presents a high impedance to the output.

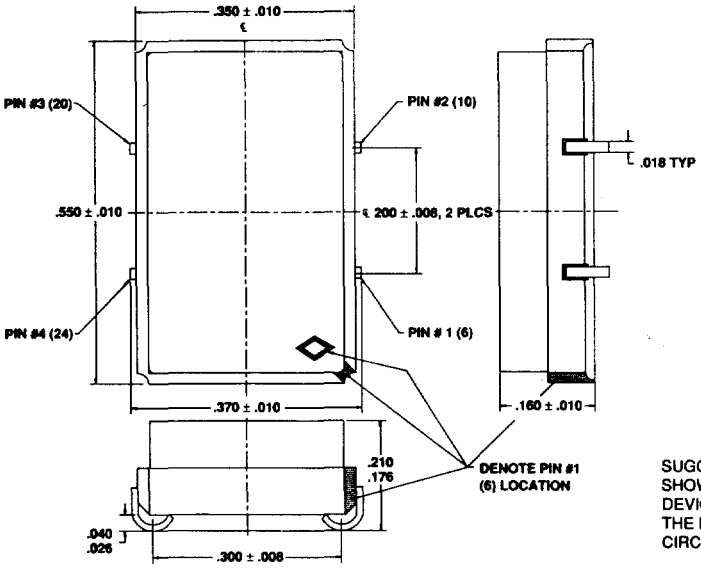
Features

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

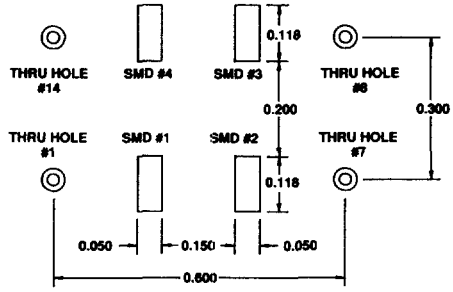
NEL TYPE, FREQUENCY RANGE, PIN CONNECTIONS

NEL OSC. TYPE	FREQUENCY RANGE	PIN CONNECTIONS (Jedec/Crystal Industry)				ENABLE	
		6/1	10/2	20/3	24/4	LOG.1	LOG. 0
HJ-150	80 to 150 MHz	N/C	GRD	OUTPUT	V_{CC}	N/A	N/A
HJ-160	25 to 80 MHz	N/C	GRD	OUTPUT	V_{CC}	N/A	N/A
HJ-1510	80 to 150 MHz	EN/DIS.	GRD	OUTPUT	V_{CC}	X	-
HJ-1520	25 to 80 MHz	EN/DIS.	GRD	OUTPUT	V_{CC}	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.

NELFS00174

NEL FREQUENCY CONTROLS, INC. 357 Beloit Street, P.O. Box 457, Burlington WI 53105-0457 U.S.A. Phone 414/763-3591 FAX 414/763-2881

Crystal Clock Oscillators

SURFACE MOUNT-TTL

AVAILABLE FROM 25 MHZ TO 150 MHZ

HJ-150, HJ-160 Series

HJ-1500 Series (Enable/Disable)

TTL Operating Conditions and Output Characteristics

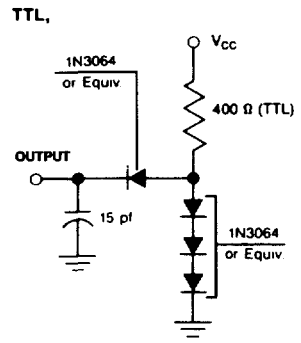
		HJ-150/HJ-1510		HJ-160/HJ-1520	
PARAMETER	CONDITIONS	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
General Characteristics					
Supply voltage (V_{CC})	V_{CC}[2]	4.75 V	5.25 V	4.75 V	5.25 V
	Breakdown	–0.5 V	7.0 V[1]	–0.5 V	7.0 V[1]
Supply current (I_{CC})	No output load @100 MHz	0.0 mA	80 mA		
	—			0.0 mA	50 mA
Output current (I_O)	—	0.0 mA	16 mA	0.0 mA	15 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
Output Characteristics					
Frequency	—	80 MHz	150 MHz	25 MHz	80 MHz
Tolerance	User specified	±.005%	—	±.005%	—
Symmetry	@1.4 V	40/60%	60/40%	40/60%	60/40%
Logic 0 (V_{OL})	Driving equiv. load	—	0.4 V	—	0.4 V
Logic 1 (V_{OH})	Driving equiv. load	2.4 V	—	2.4 V	—
Logic 0 (I_{OL} sink)	Driving equiv. load	—	16 mA	—	16 mA
Logic 1 (I_{OH} source)	Driving equiv. load	—	400 uA	—	400 uA
Rise & fall time (t_r,t_f)	0.4 V to 2.4 V	—	3 ns	—	5 ns
3-state enable/disable time (t_{pz})	(HJ-150 & HJ-160)	N/A	N/A	N/A	N/A
	(HJ-1510 & HJ-1520)	—	25 ns	—	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.

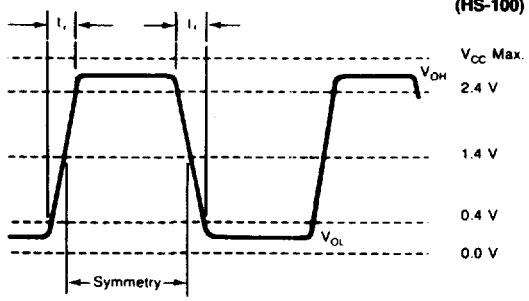
This information is believed to be reliable at the time of printing; no responsibility is assumed for inaccuracies. NEL Frequency Controls reserves the right to make changes at any time.

Equivalent Loads



Output Waveform

TTL (HS-100)



NEL FREQUENCY CONTROLS, INC. 357 Beloit Street, P.O. Box 457, Burlington WI 53105-0457 U.S.A. Phone 414/763-3591 FAX 414/763-2881