

## Crystal Oscillators

### Surface Mount Type

<b>NDOHC32</b> [ 3.2×2.5×1.00 mm ]	<b>NDOHC53</b> [ 5.0×3.2×1.25 mm ]	<b>NDOHC57</b> [ 7.0×5.0×1.45 mm ]
---------------------------------------	---------------------------------------	---------------------------------------

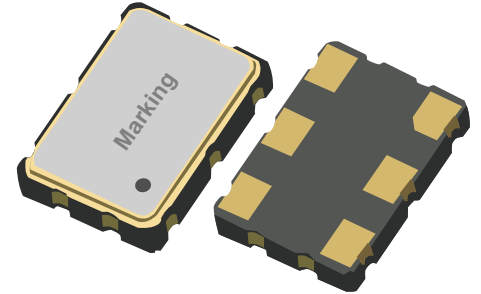
<b>Output</b>
<b>HCSL</b>

<b>Supply Voltage</b>
<b>2.5V / 3.3V</b>

<b>Frequency Range</b>
<b>13.5 kHz~220 MHz</b>

### Features

- Surface mount package size 3.2×2.5 (3225), 5.0×3.2 (5032), 7.0×5.0 (7050), mm×mm
- Differential output Simple Package Crystal Oscillator (SPXO)
- HCSL output, frequency range from 13.5 KHz to 220 MHz
- 2.5V / 3.3V operating voltage
- RoHS Compliant
- Very low phase jitter: 0.2 pS, typical, 12 KHz~20 MHz
- Tri-state available
- Applications: Fiber channel, Storage area network, SONET, Server, Smart grid, Gigabit ethernet, and more



### Standard Specifications

Item / Type	<b>NDOHC32</b> (SMD 3225 HCSL)	<b>NDOHC53</b> (SMD 5032 HCSL)	<b>NDOHC57</b> (SMD 7050 HCSL)
Dimensions	3.2×2.5×1.00 mm	5.0×3.2×1.20 mm	7.0×5.0×1.40 mm
Output	HCSL		
Output load	50Ω		
Output frequency range	13.5 KHz~220 MHz		
Supply voltage	2.5 V / 3.3 V		
Frequency tolerance (All condition)	±25 ppm, ±50 ppm, ±100 ppm		
Operating temperature	-20~+70°C, -40~+85°C		
Current consumption	100mA max.		
Disable current	60mA max.		
Symmetry	45 % to 55 %		
Output voltage Voh	0.75V Typ., 0.66V to 0.85V		
Output voltage Vol	0V Typ., -0.15V to 0.15V		
Input voltage Vih (min.)	70% Vcc min.		
Input voltage Vil (max.)	30% Vcc max.		
Rise time / Fall time	1 ns max.		
Start-up time	10ms max.		
Storage temperature	-55~+125°C		
Phase jitter (12 KHz~20 MHz)	0.2 pSec Typ.		

## Crystal Oscillators

### Surface Mount Type

<b>NDOLP32</b> NDOLV32 NDOHC32 [3.2×2.5×1.00 mm]	<b>NDOLP53</b> NDOLV53 NDOHC53 [5.0×3.2×1.25 mm]	<b>NDOLP57</b> NDOLV57 NDOHC57 [7.0×5.0×1.45 mm]
--	--	--

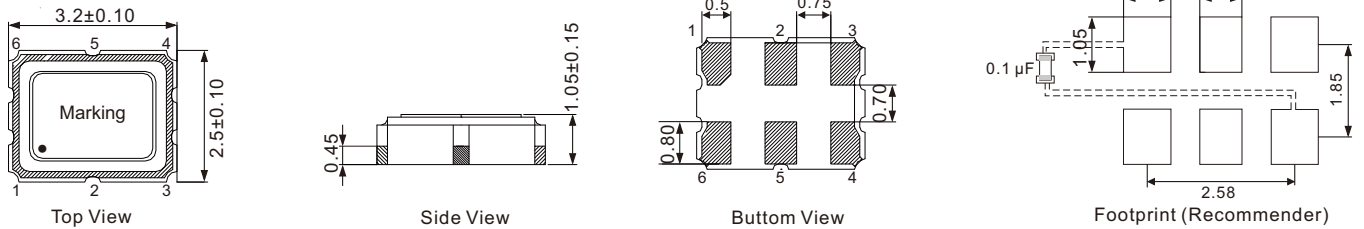
<b>Output</b> LVPECL, LVDS, HCSSL
--------------------------------------

<b>Supply Voltage</b> 2.5V / 3.3V
--------------------------------------

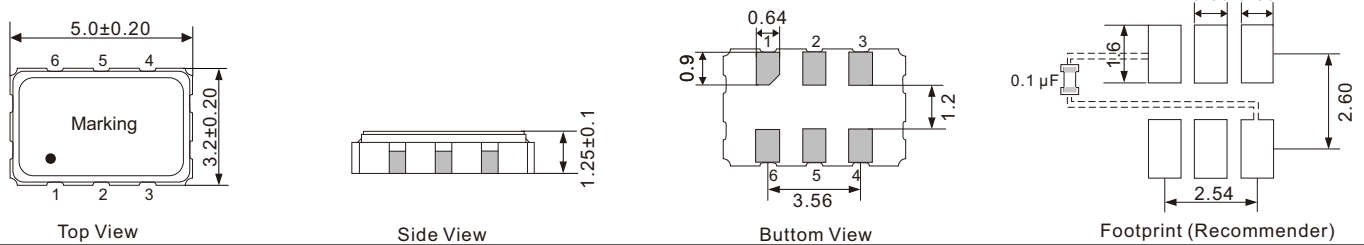
<b>Frequency Range</b> 13.5 kHz~220 MHz
--

### Outline Dimensions (Unit: mm)

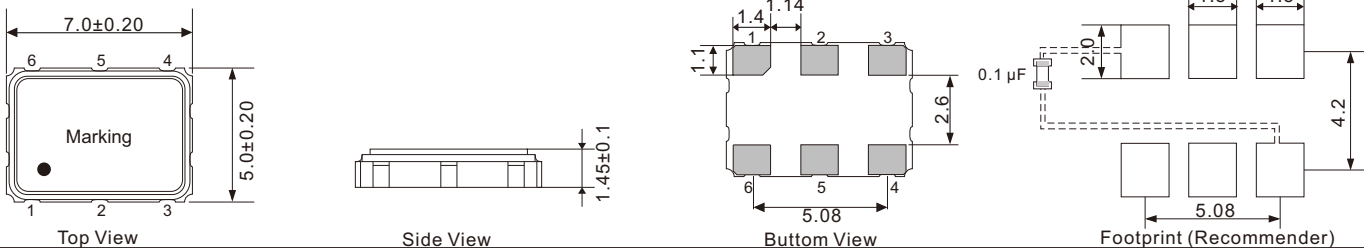
#### NDOLP32,NDOLV32,NDOHC32 (3.2×2.5×1.00 mm)



#### NDOLP53,NDOLV53,NDOHC53 (5.0×3.2×1.25 mm)

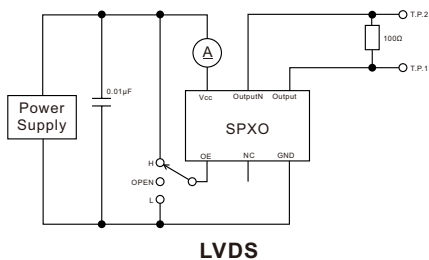


#### NDOLP57,NDOLV57,NDOHC57 (7.0×5.0×1.45 mm)

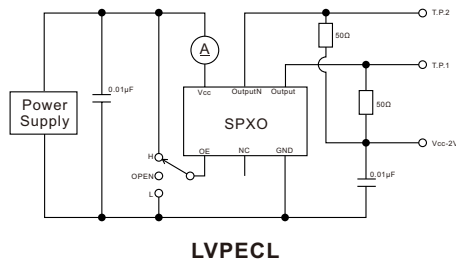


### Measurement Circuit

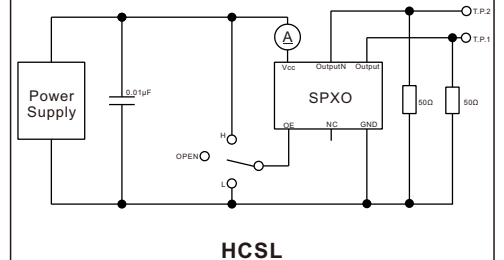
#### NDOLV32,NDOLV53,NDOLV57



#### NDOLP32,NDOLP53,NDOLP57



#### NDOHC32,NDOHC53,NDOHC57



### Pin Map

Pin	Connection	Function
1	OE / Tri-State	“H” or “OPEN”: specified frequency output; “L”: output is high impedance
2	N.C.	No connect (Open or Vcc)
3	GND	Vcc power supply ground
4	OUT	Oscillator output
5	OutputN	Complementary oscillator output
6	Vcc	Power supply voltage