

VCXO



HUAFENG
CRYSTAL

HVD,HVE,HVF Series

- Voltage controlled crystal oscillator
- HCMOS / TTL output
- 5.0V / 3.3V supply voltage
- Custom lead length options available
- Wide frequency and pull range
- Surface mount package
- Available on tape and reel



ELECTRICAL SPECIFICATIONS

Frequency Range	1.000 to 60.000MHz		
Operating Temperature Range	0 to +70°C or -40 to +85°C		
Storage Temperature Range	-40 to +85°C		
Supply Voltage(V _{cc})	5.0V _{cc} ± 5%		3.3V _{cc} ± 5%
Aging(at 25°C)	± 3ppm/year Max		
Load drive Capability	10TTL Load or 15pF HCMOS Load		
Start Up Time	10msec Max		
Frequency Deviation/ Pin 1 Control Voltage	2.5V _{cc} ± 2.0V _{cc}	± 10, ± 30, ± 50, ± 100ppm Min	
	2.5V _{cc} ± 2.5V _{cc}	± 10, ± 30, ± 50, ± 100, ± 150ppm Min	
	1.65V _{cc} ± 1.65V _{cc} (or ± 1.5V _{cc})	± 10, ± 30, ± 50, ± 100, ± 150ppm Min	
Linearity	± 20, ± 15, ± 10, ± 5%(Optional)		
Input Current	1.000 to 20.000MHz	20mA Max	15mA Max
	20.001 to 40.000MHz	30mA Max	25mA Max
	40.001 to 60.000MHz	40mA Max	35mA Max
Frequency Stability	± 50, ± 25, ± 20, ± 10ppm (See table 1.)		
Output Voltage Logic High(V _{OH})	w/TTL Load	2.4V _{cc} Min	
	w/HCMOS Load	90% of V _{cc} Min	
Output Voltage Logic Low(V _{OL})	w/TTL Load	0.4V _{cc} Max	
	w/HCMOS Load	10% of V _{cc} Max	
Duty Cycle	at 50% of Waveform	50 ± 10%(STD)	
	w/HCMOS Load or 1.4V _{cc} w/TTL Load	50 ± 5%(Optional)	
Rise / Fall Time	5nsec Max		
Period Jitter: Absolute	± 100ps Max		
Period Jitter: One Sigma	± 25ps Max		

PART NUMBERING GUIDE

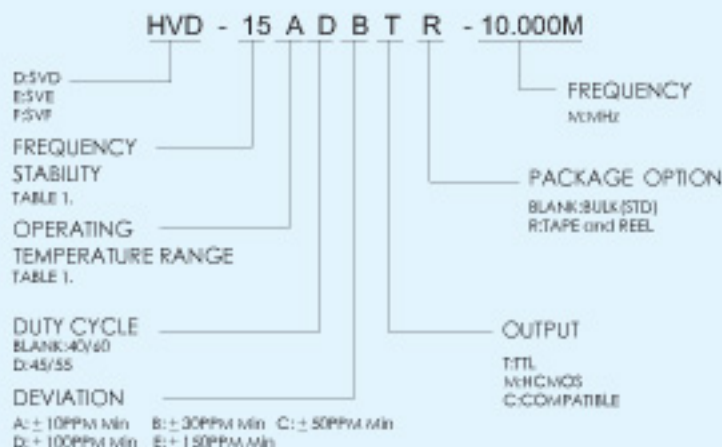
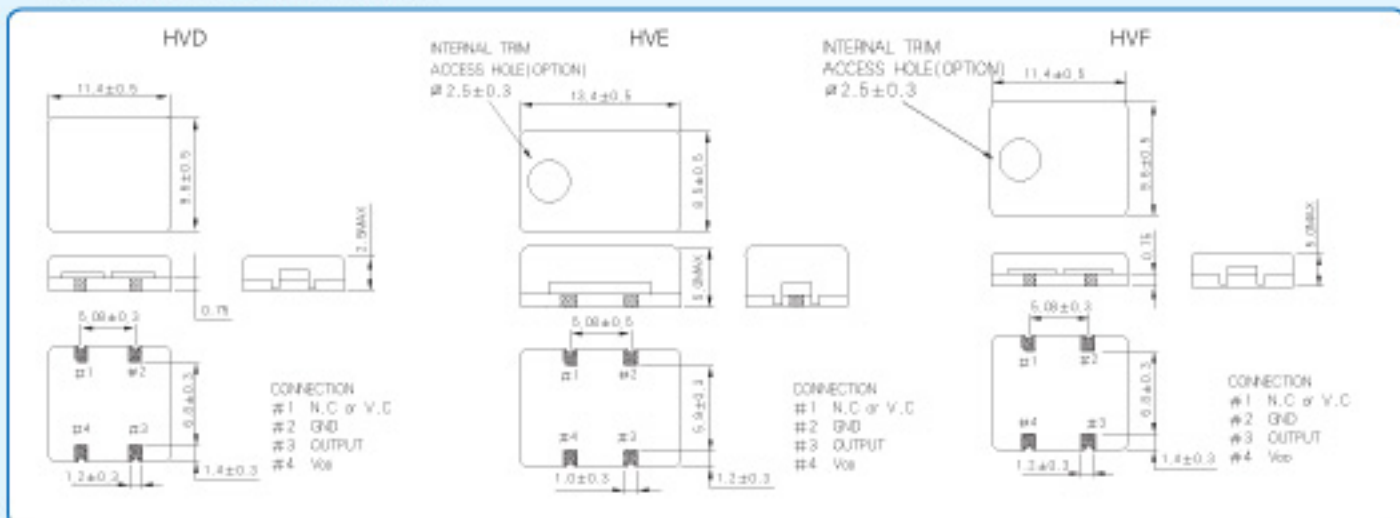


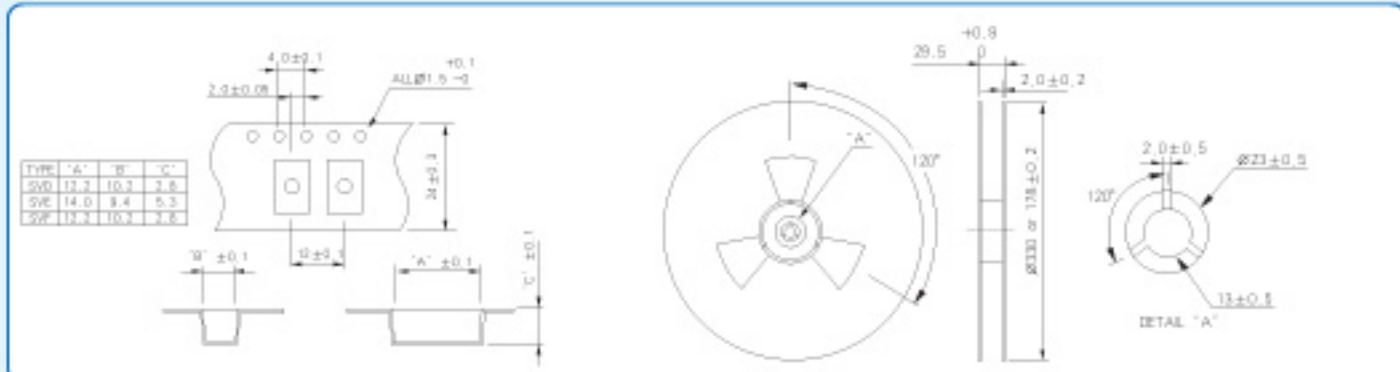
TABLE 1.

OPERATING TEMPERATURE Range	FREQUENCY STABILITY (\pm PPM) * Denotes Availability						
	Code	5PPM	10PPM	15PPM	20PPM	30PPM	50PPM
0~50°C	A	*	*	*	*	*	*
0~60°C	B		*	*	*	*	*
-10~60°C	C		*	*	*	*	*
0~70°C	D			*	*	*	*
-10~70°C	E			*	*	*	*
-20~70°C	F			*	*	*	*
-40~85°C	G					*	*

MECHANICAL DIMENSIONS



TAPE AND REEL DIMENSIONS



ENVIRONMENTAL / MECHANICAL SPECIFICATIONS

PARAMETER	SPECIFICATIONS
Seal Integrity	Bubble test in Perfluorocarbon at $+125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 60 seconds minimum (Internal Crystal Only).
Solderability	Sn63 Solder dip at $+230^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 5 seconds/95% coverage.
Marking Permanency	10 Stokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 3 times from a height of 50cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.