



20.2 x 12.6 x 5.08 mm

# TTL / CMOS • FULL-SIZE DIP • 5Vdc or 3.3Vdc VOLTAGE-CONTROLLED CRYSTAL OSCILLATORS ACVX1222 and ACVX1222L

## FEATURES:

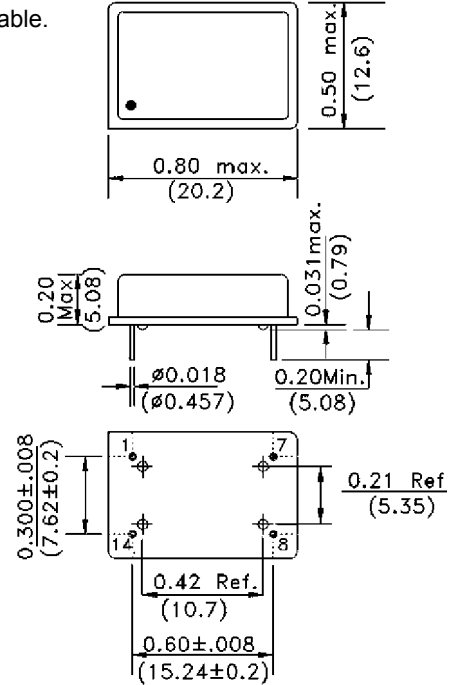
- 14-Pin DIP 5Vdc or 3.3Vdc ; 5.08mm height.
- Tight symmetry (45/55%) available.
- Large frequency deviation available.
- Good linearity (10%).

## APPLICATIONS:

- Phase locked loops (PLLs)
- Reference signal tracking.
- Clock recovery.
- Synthesizers.

## STANDARD SPECIFICATIONS

PARAMETERS	ACVX 1222	ACVX 1222L
Frequency Range (F <sub>0</sub> )	1MHz - 200MHz	
Operating Temperature (T <sub>OPR</sub> )	0°C to +70°C (See Options)	
Storage Temperature (T <sub>STO</sub> )	-40°C to +85°C	
Frequency Stability -vs- Temp. -vs- Aging -vs- V <sub>dd</sub>	±100ppm max. (See Options) ±5ppm / year max. ±5ppm max.	
Supply Voltage (V <sub>dd</sub> )	5Vdc ±5%	3.3Vdc ±5%
Input Current (I <sub>dd</sub> )	25mA max. for F ≤ 26 MHz 30mA max. for F ≤ 45 MHz	60 mA max. for F ≤ 70 MHz 90 mA max. for F ≤ 200 MHz
Duty Cycle or Symmetry	40 / 60% max. @ 1/2V <sub>dd</sub> (See Options)	
Rise and Fall Times (T <sub>R</sub> / T <sub>F</sub> )	10ns max. for F ≤ 24MHz 5ns max. F > 24MHz	10ns
Output Load	TTL / CMOS (15 pF or 10TTL gate)	
Output Voltage (V <sub>OH</sub> ) (V <sub>OL</sub> )	0.9 *V <sub>dd</sub> min. 0.4V <sub>dc</sub> max.	
Transfer Function	Positive	
Voltage Control (V <sub>c</sub> )	0.5Vdc to 4.5Vdc	0.3Vdc to 3Vdc
Center Voltage	2.5Vdc ±0.5Vdc	1.5Vdc ±0.25V
Frequency Deviation	±100ppm min. (See Options)	
Linearity	±10% max.	
Start-up Time (T <sub>Osc</sub> )	10ms max.	
Input impedance	50K Ω min.	
Period jitter: Absolute	±100ps max. ≤ 60MHz ; ±200ps max. > 60MHz	
Period jitter: One sigma	±25ps max. ≤ 60MHz ; ±50ps max. > 60MHz	



PIN No.	FUNCTION
1	Voltage Control V <sub>c</sub>
7	GND / Case
8	Output
14	V <sub>dd</sub>

OFFSET FREQUENCY (Hz)	PHASE NOISE (dBc/Hz)
10	-70
100	-100
1 kHz	-125
10 kHz	-150
100 kHz	-150

TYPICAL PHASE NOISE @ 20 MHz

Please call us for higher frequencies, other pulling specs., control voltage range or linearity.  
Test circuit, waveforms, see appendix B. Value added, see appendix D. Marking, see appendix G.  
Environmental and mechanical specifications, see appendix C. Group 1.  
Application notes, see appendix A. Recommended handling, see appendix F.

## ORDERING OPTIONS

ACVX1222X - Frequency - Temperature - Stability - Duty Cycle - Pulling - Value Added - Packaging

Blank or L    XX.XXXXX MHz

-I for -0°C to +50°C  
-D for -10°C to +60°C  
-E for -20°C to +70°C  
-F for -30°C to +70°C  
-N for -30°C to +85°C  
-L for -40°C to +85°C

-Y for ± 10ppm max.\*  
-J for ± 20ppm max.  
-R for ± 25ppm max.  
-K for ± 30ppm max.  
-H for ± 35ppm max.  
-C for ± 50ppm max.

-N15 ± 150 ppm min.  
-N20 ± 200 ppm min.  
-N25 ± 250 ppm min.\*\*  
-N30 ± 300 ppm min.\*\*

-S for 45/55% @ 1/2 V<sub>dd</sub>  
-S1 for 45/55% @ 1.4 V<sub>dc</sub>

-TY for Tray packing

-G Gull Wing  
-QXX (Trimmed Leads)

\*\* ACVX 1222 only

\* Please contact us for availability.

NOTE: Left blank if standard • All specifications and markings subject to change without notice



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