

TTL / CMOS • FULL-SIZE DIP • 5 Vdc or 3.3 Vdc

## VOLTAGE-CONTROLLED CRYSTAL OSCILLATORS

# ACVX1220 and ACVX1220L



### FEATURES:

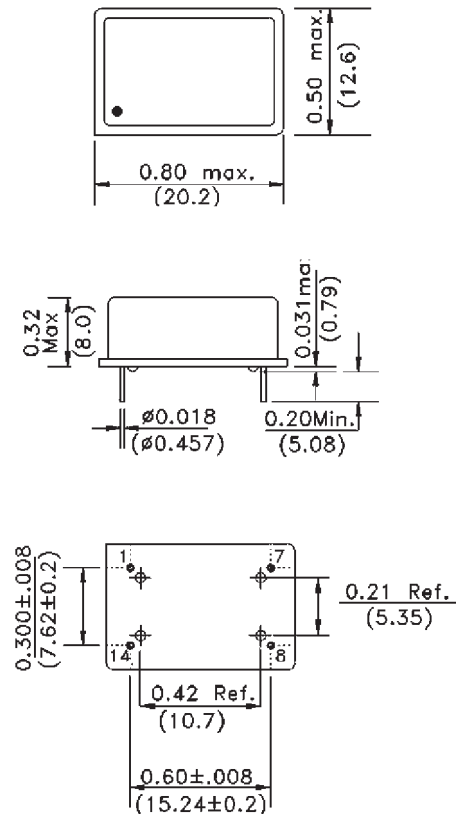
- 14-Pin DIP 5Vdc or 3.3 Vdc.
- Hermetically Sealed.
- Large Frequency Deviation Available.
- Tight Symmetry (45/55%) Available.

### APPLICATIONS:

- Phase Locked Loops (PLLs)
- Reference Signal Tracking.
- Clock Recovery.
- Synthesizers.

## STANDARD SPECIFICATIONS

| PARAMETERS   | ACVX 1220  | ACVX 1220L  |
|--|--|---|
| Frequency Range (F <sub>0</sub> )                                    | 1 MHz - 160 MHz  | 1 MHz - 120 MHz   |
| 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.<br>-vs- Aging<br>-vs- V <sub>dd</sub> | ± 30 ppm max. (See Options)<br>± 5 ppm / year max.<br>± 5 ppm max. |   |
| Supply Voltage (V <sub>dd</sub> )                                    | 5 Vdc ± 5%   | 3.3 Vdc ± 5%  |
| Input Current (I <sub>dd</sub> )                                     | 25 mA max. for F ≤ 24 MHz<br>30 mA max. for F ≤ 45 MHz             | 60 mA max. for F ≤ 70 MHz<br>90 mA max. for F ≤ 160 MHz |
| Duty Cycle or Symmetry   | 40 / 60% max. @ 1/2 V <sub>dd</sub> (See Options)                  |   |
| Rise and Fall Times (T <sub>R</sub> / T <sub>F</sub> )               | 10 ns max.   |   |
| Output Load  | TTL / CMOS (15 pF or 5TTL gate)                                    |   |
| Output Voltage (V <sub>OH</sub> )<br>(V <sub>OL</sub> )              | 0.9 * V <sub>dd</sub> min.<br>0.4 V <sub>dc</sub> max.             |   |
| Transfer Function  | Positive   |   |
| Voltage Control (V <sub>c</sub> )                                    | 0.5 Vdc to 4.5 V   | 0.3 Vdc to 3 Vdc  |
| Center Voltage   | 2.5 Vdc ± 0.5 V  | 1.5 Vdc ± 0.25 V  |
| Frequency Deviation  | ± 100 ppm min. (See Options)                                       |   |
| Linearity  | ± 10% max.   |   |
| Start-up Time (T <sub>osc</sub> )                                    | 10 ms max.   |   |



### TYPICAL PHASE NOISE

| OFFSET FREQUENCY (Hz) | PHASE NOISE (dBc/Hz) |
|-----------------------|----------------------|
| 10                    | -70                  |
| 100                   | -100                 |
| 1 kHz                 | -125                 |
| 10 kHz                | -150                 |
| 100 kHz               | -160                 |

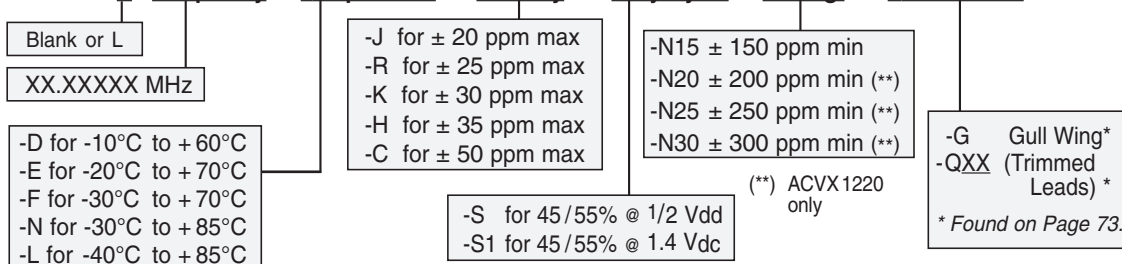
Please Inquire factory for higher frequencies, other pulling specs., control voltage range or linearity.

For test circuit, waveforms, please see page 67.

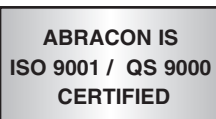
Environmental and mechanical specifications on page 68, Group 1. Marking, see page 79.

## ORDERING OPTIONS

ACVX1220X - Frequency - Temperature - Stability - Duty Cycle - Pulling - Value Added



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



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

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