



# CRYSTAL CONTROLLED OSCILLATORS

AURORA, IL 60505  
PHONE (630) 851-4722  
FAX (630) 851-5040  
www.conwin.com

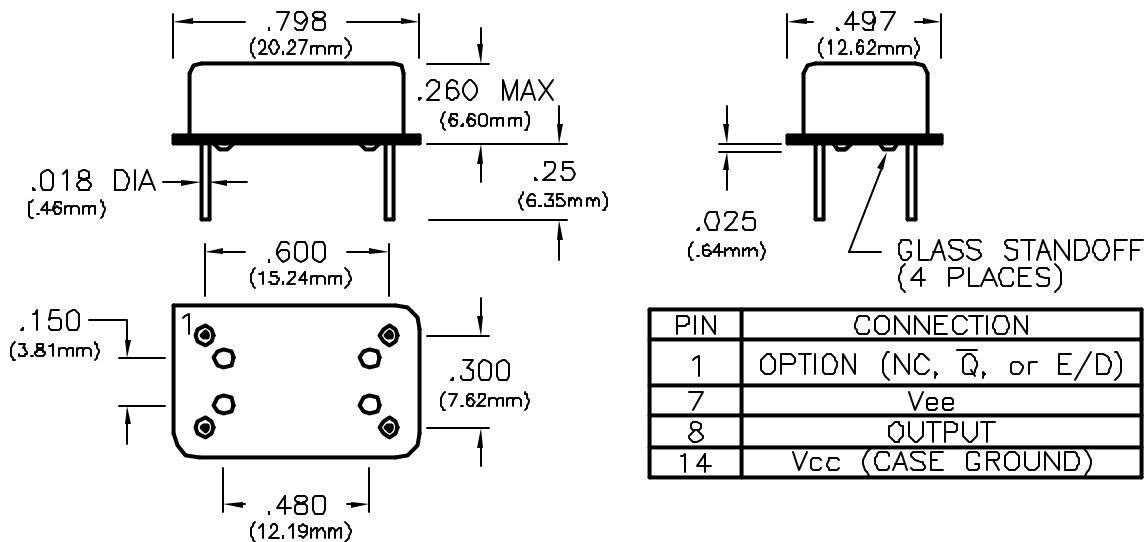
## 14 PIN DIP ECL PLL FREQUENCY MULTIPLIER

| SPECIFICATIONS                            | GA01-52*   | GA01-53*   | GA01-54* | GA01-62*   | GA01-63* | GA01-64* |
|---|--|--|----------|--|----------|----------|
| Available Frequency Ranges                | 120 to 135 MHz<br>144 to 168 MHz<br>174 to 205 MHz<br>232 to 270 MHz<br>288 to 336 MHz<br>348 to 410 MHz<br>464 to 540 MHz<br>576 to 672 MHz |  |          | 144 to 168 MHz<br>174 to 205 MHz<br>288 to 336 MHz<br>348 to 410 MHz<br>576 to 672 MHz |          |          |
| Frequency Stability                       | ±50ppm   | ±100ppm  | ±20ppm   | ±50ppm   | ±100ppm  | ±20ppm   |
|   | Inclusive of calibration tolerance at 25°, operating temperature range, supply voltage change, load change, aging, shock and vibration.      |  |          |  |          |          |
| Operating Temp Range                      | 0°C to +70°C   |  |          | -40°C to +85°C   |          |          |
| Storage Temp Range                        | -55°C to +125°C  |  |          |  |          |          |
| Output                                    | Waveform   | ECL Squarewave, 100K Compatible  |          |  |          |          |
|   | Load   | Output must be terminated into 50 Ohms to -2Vdc.   |          |  |          |          |
|   | Voltage $V_{oh}$   | -1.0V Minimum, -0.5V Maximum   |          |  |          |          |
|   | $V_{ol}$   | -2.1V Minimum, -1.6V Maximum   |          |  |          |          |
|   | Symmetry   | 45/55 Maximum measured at 50% level  |          |  |          |          |
|   | Rise/Fall Time   | 750pS Maximum  |          |  |          |          |
|   | Jitter   | 10pS rms Maximum   |          |  |          |          |
| SSB Phase Noise                           | -100dBc/Hz typical @ 10KHz offset  |  |          |  |          |          |
| Enable/Disable Option (Pin 1):            | Enable ( $V_{il}$ )  | -4.5Vdc Maximum  |          |  |          |          |
|   | Disable ( $V_{ih}$ )   | -3.5Vdc Minimum  |          |  |          |          |
|   |  | Q (Pin 8) disables to low state.<br>When Pin 1 is floating, output is in disabled state. |          |  |          |          |
| Supply Voltage ( $V_{ee}$ )               | -5.2Vdc ±5%  |  |          |  |          |          |
| Supply Current                            | 100mA Maximum  |  |          |  |          |          |
| Package                                   | All metal, hermetically sealed, welded package   |  |          |  |          |          |
| Options<br>* - add suffix to model number | 0  | Pin 1: No Connection   |          |  |          |          |
|   | 1  | Pin 1: Complementary Output  |          |  |          |          |
|   | 2  | Pin 1: Enable/Disable  |          |  |          |          |

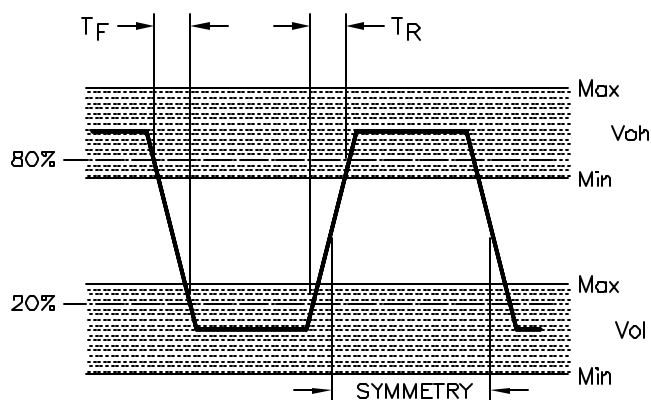
BULLETIN #: GA006  
PAGE 1 OF 2

REV: 10  
DATE: 2/6/04

Specifications subject to change without notice. **C-W © 2000**  
ISSUED BY: \_\_\_\_\_  
Dimensional Tolerance: ±.02"  
±.005"



## OUTPUT WAVEFORM



## TEST CIRCUIT

