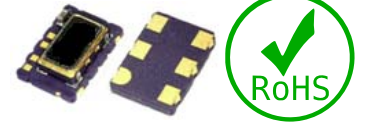


# (V)TDLV75 Series

TCXO/VC-TCXO, 7.0 x 5.0mm, LVDS output

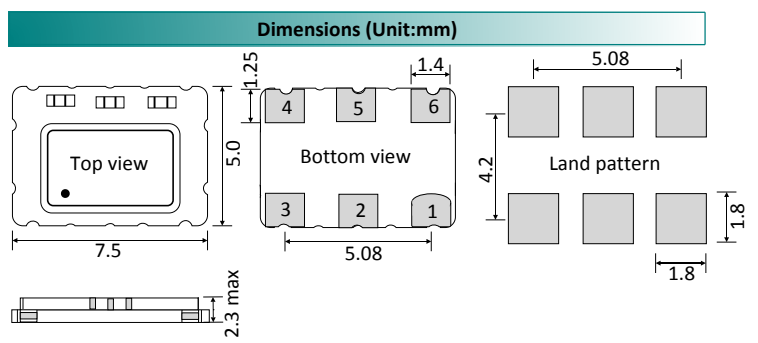
±2.0ppm stability over -30°C to 85°C  
 Moderate jitter specification  
 ESD sensitive device, Moisture sensitive level - 1



| Parameters                          |                | Specification   | Remarks                                       |
|-------------------------------------|----------------|---|---|
| Frequency range                     | F_nom          | 12.0MHz ~ 800.0MHz  |   |
| Supply voltage                      | Vcc            | 3.3V  |   |
| Initial frequency tolerance         | F_tol          | <±2.0ppm  | At +25°C±2°C                                  |
| Frequency stability                 | vs Temperature | F_stb ±1.0ppm ~ ±5.0ppm                                   | Table 1                                       |
|                                     | vs Load        | F_load ±0.3ppm max.                                       | ±10% load condition change                    |
|                                     | vs Voltage     | F_Vcc ±0.3ppm max.  | ±5% input voltage change                      |
|                                     | vs Aging       | F_age ±1.0ppm/year max.                                   | At +25°C                                      |
|                                     | vs Reflow      | ±1.0ppm/year max.   | 1 reflow and measured after 24hrs             |
| Operating temperature range (°C)    | Topr           | 0°C ~ +50°C to -40°C ~ +85°C                              | Table 1                                       |
| Storage temperature (°C)            | Tstg           | -55°C ~ +125°C  |   |
| Output waveform / Output load       |                | LVDS square wave/50Ω from each load                       |   |
| Output voltage high                 | Voh            | 1.4V typical ; 1.6V min.                                  |   |
| Output voltage low                  | Vol            | 0.9V min ; 1.1V max.                                      |   |
| Output differential voltage         | Vod            | 247mV min ; 355mV typical ; 454mV max.                    | Output 1 - Output 2                           |
| Output differential voltage error   | Dvod           | -50mV min ; 50mV max.                                     |   |
| Output offset voltage               | Vos            | 1.125V min ; 1.2V typical ; 1.375V max.                   |   |
| Output offset magnitude error       | Dvos           | 0mV min ; 3mV typical ; 25mV max.                         |   |
| Current consumption                 | Icc            | 12~24MHz : 33mA max ; 24~96MHz : 50mA<br>96~700MHz : 85mA | Max current measured with load                |
| Rise and fall time                  | Tr, Tf         | 1.5ns max.  | 20% to 80% of wave form.                      |
| Duty cycle                          | SYM            | 45%/55%   | Measured at 1.25V                             |
| Start-up time                       | T_str          | 5.0m sec (typ.), 10.0m sec. (Max.)                        | Reach 90% amplitude at +25°C±2°C              |
| Phase jitter (RMS) (12kHz to 20MHz) |                | 2.6ps (typ.) , 4.0ps (max)                                | For frequency 155.520MHz                      |
| Tristate                            |                | Yes, Pin 2  |   |
| <b>VC-TCXO option only</b>          |                |   |   |
| Control voltage                     | Vc             | 1.5V ± 1.0V   |   |
| Frequency tuning (ppm)              |                | ±5.0ppm min.  |   |
| Linearity/Slope polarity            |                | 6.0% typical;10%max/Positive slope                        | Positive voltage for positive frequency shift |

| Temp. (°C)    | Stability in ppm |      |      |      |      |      |
|---------------|------------------|------|------|------|------|------|
|               | ±1.0             | ±2.0 | ±2.5 | ±3.0 | ±4.0 | ±5.0 |
| 0°C to 50°C   | √                | √    | √    | √    | √    | √    |
| -10°C to 60°C | Enq.             | √    | √    | √    | √    | √    |
| -20°C to 70°C | X                | √    | √    | √    | √    | √    |
| -30°C to 75°C | X                | √    | √    | √    | √    | √    |
| -30°C to 85°C | X                | √    | √    | √    | √    | √    |
| -40°C to 85°C | X                | X    | X    | Enq. | Enq. | √    |

| Phase noise at 25°C (dBc/Hz) | 100MHz | 622.08MHz |
|------------------------------|--------|-----------|
| 10Hz                         | -75    | -55       |
| 100Hz                        | -104   | -85       |
| 1kHz                         | -115   | -109      |
| 10kHz                        | -120   | -115      |
| 100kHz                       | -122   | -110      |



- Pad 1: Control voltage for VCTCXO  
No connection for TCXO
- Pad 2: Tristate
- Pad 3: GND
- Pad 4: LVDS output
- Pad 5: Complimentary output
- Pad 6: Supply voltage

| Pad 2 (Tristate)    | Pad 4/Pad 5 (Output) |
|---------------------|----------------------|
| No connection       | Active               |
| Enable (>Vcc*0.45)  | Active               |
| Disable (<Vcc*0.45) | High impedance       |

| TCXO part number generation |  |  |                    |   |                         |                 |                          |          |                  |                                   |      |
|-----------------------------|--|--|--------------------|---|-------------------------|-----------------|--------------------------|----------|------------------|-----------------------------------|------|
| TLV75                       | 2600   | M  | B                  | X   | N                       | K               | X                        | X        | H                | L                                 | -PF  |
| ACT series Code             | Frequency (MHz)<br>Ex. 26.00MHz  | Temp. stability (±ppm)   | Supply voltage (V) | Operating temp. range (°C)  | Frequency tuning (±ppm) | Output waveform | Mechanical tuning (±ppm) | Polarity | Duty cycle (%/%) | Tape & Reel                       | RoHS |
| TLV75                       | < 100MHz<br>First 4 digit of frequency<br><br>> 100MHz<br>First 5 digit of frequency | 1.0 = P<br>2.0 = N<br>2.5 = M<br>3.0 = L<br>4.0 = J<br>5.0 = F | 3.3V = B           | 0 ~ 50 = D<br>-10 ~ +60 = F<br>-20 ~ +70 = B<br>-30 ~ +75 = W<br>-30 ~ +85 = X<br>-40 ~ +85 = K | None = N                | LVDS = K        | None = X                 | None = X | 45/55 = H        | Loose = L<br>1000 = C<br>2000 = E | -PF  |

Note: It is important to suffix the above part number with full frequency required to give a completed part number as illustrated below.  
Full Example Part Number : **TLV752600MBXNKXXHL-PF [26MHz]**, **TLV751474MBXNKXXHL-PF [14.7456MHz]**

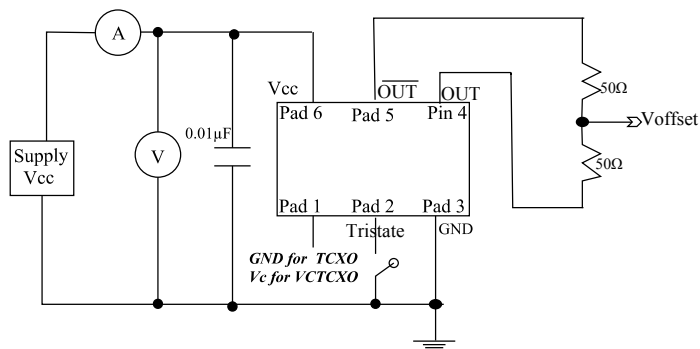
| VC-TCXO part number generation |  |  |                    |   |                                |                 |                          |                          |                    |                |            |                                   |      |
|--------------------------------|--|--|--------------------|---|--------------------------------|-----------------|--------------------------|--------------------------|--------------------|----------------|------------|-----------------------------------|------|
| VTLV75                         | 1474   | M  | B                  | X   | E                              | B               | X                        | D                        | P                  | E              | Z          | L                                 | -PF  |
| ACT series Code                | Frequency (MHz)<br>Ex. 14.7456MHz  | Temp. stability (±ppm)   | Supply voltage (V) | Operating temp. range (°C)  | Frequency tuning (±ppm)        | Output waveform | Mechanical tuning (±ppm) | Electrical tuning (±ppm) | Polarity           | Linearity      | Duty cycle | Tape & Reel                       | RoHS |
| VTLV75                         | < 100MHz<br>First 4 digit of frequency<br><br>> 100MHz<br>First 5 digit of frequency | 1.0 = P<br>2.0 = N<br>2.5 = M<br>3.0 = L<br>4.0 = J<br>5.0 = F | 3.3V = B           | 0 ~ 50 = D<br>-10 ~ +60 = F<br>-20 ~ +70 = B<br>-30 ~ +75 = W<br>-30 ~ +85 = X<br>-40 ~ +85 = K | Voltage Control Only<br>=<br>E | LVDS = K        | None<br>=<br>X           | ±5.0<br>=<br>D           | Positive<br>=<br>P | ±10%<br>=<br>E | 45/55 = H  | Loose = L<br>1000 = C<br>2000 = D | -PF  |

Note: It is important to suffix the above part number with full frequency required to give a completed part number as illustrated below.  
Full Example Part Number : **VTT751474MBXEKXDPEHL-PF (14.7456MHz)**

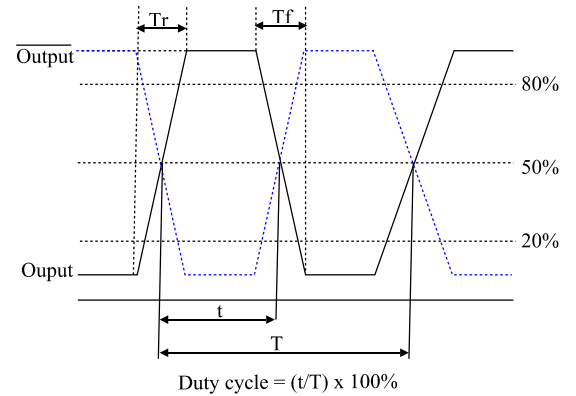
# (V)TDLV75 Series

TCXO/VC-TCXO, 7.0 x 5.0mm, LVDS output

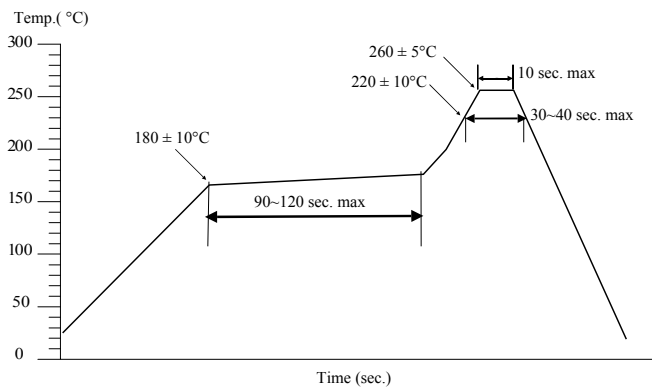
## Test circuit



## Test waveform



## Solder reflow profile



Drawing control: (Internal use only)  
 Commodity code: 854370 90 99  
 Issue number : 1  
 Date : 25042016  
 Internal reference : M6

Advanced Crystal Technology (A wholly owned Acal Bfi Company)  
 Tel: +44 (0) 118 978 8878 Email [info@actcrystals.com](mailto:info@actcrystals.com) / [www.actcrystals.com](http://www.actcrystals.com)

ISO9001 Registered

Specifications subject to change without notification