



# Model 345

## HFF LVPECL VCXO

### Features

- Ceramic Surface Mount Package
- Ultra-Low Phase Jitter Performance
- High Frequency Fundamental Crystal Design
- Frequency Range 100 – 250MHz \*
- +3.3V Operation
- Output Enable Standard
- Tape and Reel Packaging, EIA-418



Part Dimensions:  
5.0 × 3.2 × 1.2mm • 62.28mg

### Applications

- Small Cells
- Wireless Communication
- Broadband Access
- SONET/SDH/DWDM
- Base Stations
- Ethernet/GbE/SyncE
- Digital Video
- Test and Measurement

#### Standard Frequencies

- |             |               |
|-------------|---------------|
| - 100.00MHz | - 156.25MHz   |
| - 122.88MHz | - 166.00MHz   |
| - 125.00MHz | - 200.00MHz   |
| - 153.60MHz | - 204.80MHz   |
| - 155.52MHz | - 245.76MHz * |

\* Check with factory for availability.

### Description

CTS Model 345 is a low cost, small size, high performance VCXO. Employing the latest IC technology, coupled with a high frequency fundamental crystal, M345 has excellent stability and low jitter/phase noise performance.

### Ordering Information

| Model                                                                                            | Supply Voltage      | Absolute Pull Range | Frequency Stability | Temperature Range | Frequency Code [MHz] | Packaging                                                                                                                                                                  |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
|--------------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|-------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|-------------|---|----------------|---|----------------|-----------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------|---------|---|--------------|-----------|-------------------------------------|--|
| 345                                                                                              | L                   | B                   | 3                   | I                 | XXX or XXXX          | T                                                                                                                                                                          |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
|                                                                                                  |                     |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| <table><tr><th>Code</th><th>Voltage</th></tr><tr><td>L</td><td>+3.3V ±5%</td></tr></table>       |                     | Code                | Voltage             | L                 | +3.3V ±5%            | <table><tr><th>Code</th><th>Stability</th></tr><tr><td>3</td><td>±50ppm</td></tr><tr><td>5</td><td>±25ppm</td></tr><tr><td>6</td><td>±20ppm <sup>1</sup></td></tr></table> |  | Code | Stability   | 3 | ±50ppm         | 5 | ±25ppm         | 6                                                                                             | ±20ppm <sup>1</sup> | <table><tr><th>Code</th><th>Frequency</th></tr><tr><td colspan="2">Product Frequency Code <sup>2</sup></td></tr></table> |         |   | Code         | Frequency | Product Frequency Code <sup>2</sup> |  |
| Code                                                                                             | Voltage             |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| L                                                                                                | +3.3V ±5%           |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| Code                                                                                             | Stability           |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| 3                                                                                                | ±50ppm              |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| 5                                                                                                | ±25ppm              |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| 6                                                                                                | ±20ppm <sup>1</sup> |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| Code                                                                                             | Frequency           |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| Product Frequency Code <sup>2</sup>                                                              |                     |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| <table><tr><th>Code</th><th>APR</th></tr><tr><td>B</td><td>±50ppm <sup>3</sup></td></tr></table> |                     | Code                | APR                 | B                 | ±50ppm <sup>3</sup>  | <table><tr><th>Code</th><th>Temp. Range</th></tr><tr><td>C</td><td>-20°C to +70°C</td></tr><tr><td>I</td><td>-40°C to +85°C</td></tr></table>                              |  | Code | Temp. Range | C | -20°C to +70°C | I | -40°C to +85°C | <table><tr><th>Code</th><th>Packing</th></tr><tr><td>T</td><td>1k pcs./reel</td></tr></table> |                     | Code                                                                                                                     | Packing | T | 1k pcs./reel |           |                                     |  |
| Code                                                                                             | APR                 |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| B                                                                                                | ±50ppm <sup>3</sup> |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| Code                                                                                             | Temp. Range         |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| C                                                                                                | -20°C to +70°C      |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| I                                                                                                | -40°C to +85°C      |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| Code                                                                                             | Packing             |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |
| T                                                                                                | 1k pcs./reel        |                     |                     |                   |                      |                                                                                                                                                                            |  |      |             |   |                |   |                |                                                                                               |                     |                                                                                                                          |         |   |              |           |                                     |  |

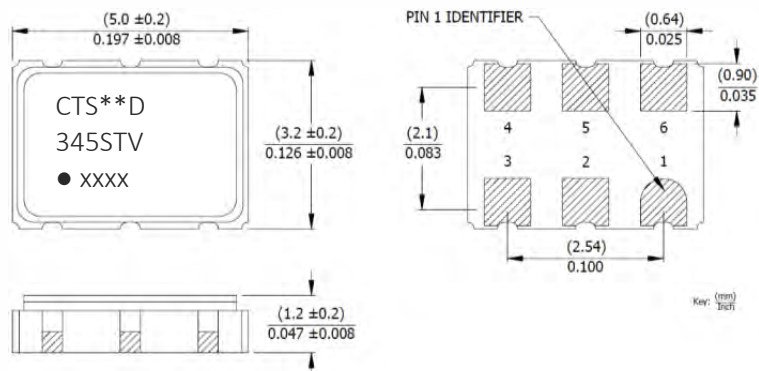
#### Notes:

- 1] Only available with "C" temperature range.
- 2] Refer to document 016-1454-0, Frequency Code Tables.  
3-digits for frequencies <100MHz, 4-digits for frequencies 100MHz or greater.
- 3] Frequencies ≥200MHz, APR is ±30ppm.

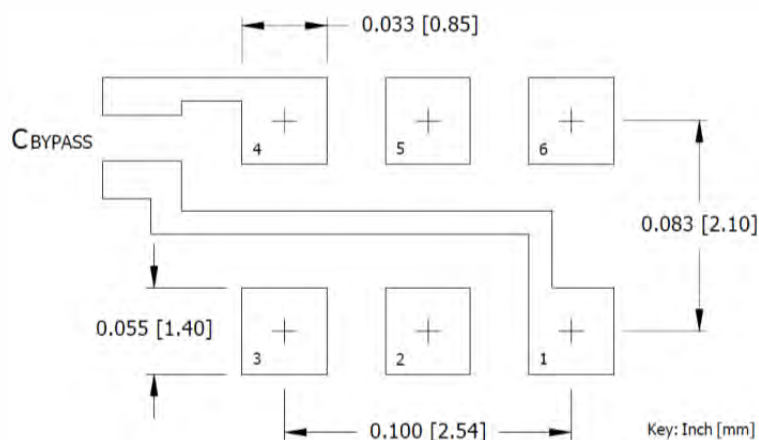
**Not all performance combinations and frequencies may be available.  
Contact your local CTS Representative or CTS Customer Service for availability.**

SHENZHEN YIJIN ELECTRONICS CO: LTD TEL: 0755-27876565

18924600166 QQ: 857950243 <http://www.vc-tcxo.com>



1. \*\* - Manufacturing Site Code.
  2. D – Date Code. See Table I for codes.
  3. ST – Frequency Stability/Temperature Code. [Refer to Ordering Information]
  4. V – Voltage Code. L = 3.3V
  5. xxxx – Frequency Code. 4-digits required for frequencies 100MHz and above.
- [See document 016-1454-0, Frequency Code Tables.]



1. Termination pads (e4). Barrier-plating is nickel [Ni] with gold [Au] flash plate.
2. Reflow conditions per JEDEC J-STD-020; +260°C maximum, 20 seconds.
3. MSL = 1.

| 1 | V <sub>C</sub>  | Control Voltage          |
|---|-----------------|--------------------------|
| 2 | EOH             | Enable                   |
| 3 | GND             | Circuit & Package        |
| 4 | Output          | RF Output                |
| 5 | Output          | RF Output, Complementary |
| 6 | V <sub>CC</sub> | Supply Voltage           |

Table I - Date Code

| MONTH |      |      |      |      | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| YEAR  |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |
| 2001  | 2005 | 2009 | 2013 | 2017 | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
| 2002  | 2006 | 2010 | 2014 | 2018 | N   | P   | Q   | R   | S   | T   | U   | V   | W   | X   | Y   | Z   |
| 2003  | 2007 | 2011 | 2015 | 2019 | a   | b   | c   | d   | e   | f   | g   | h   | j   | k   | l   | m   |
| 2004  | 2008 | 2012 | 2016 | 2020 | n   | p   | q   | r   | s   | t   | u   | v   | w   | x   | y   | z   |