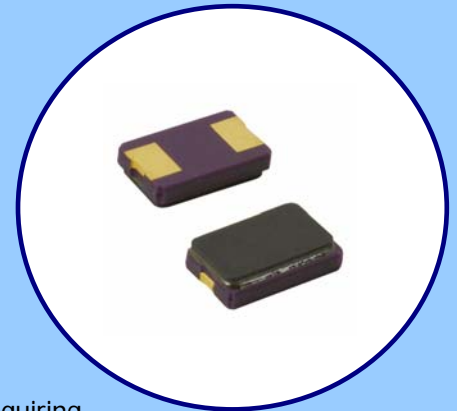


**FEATURES**

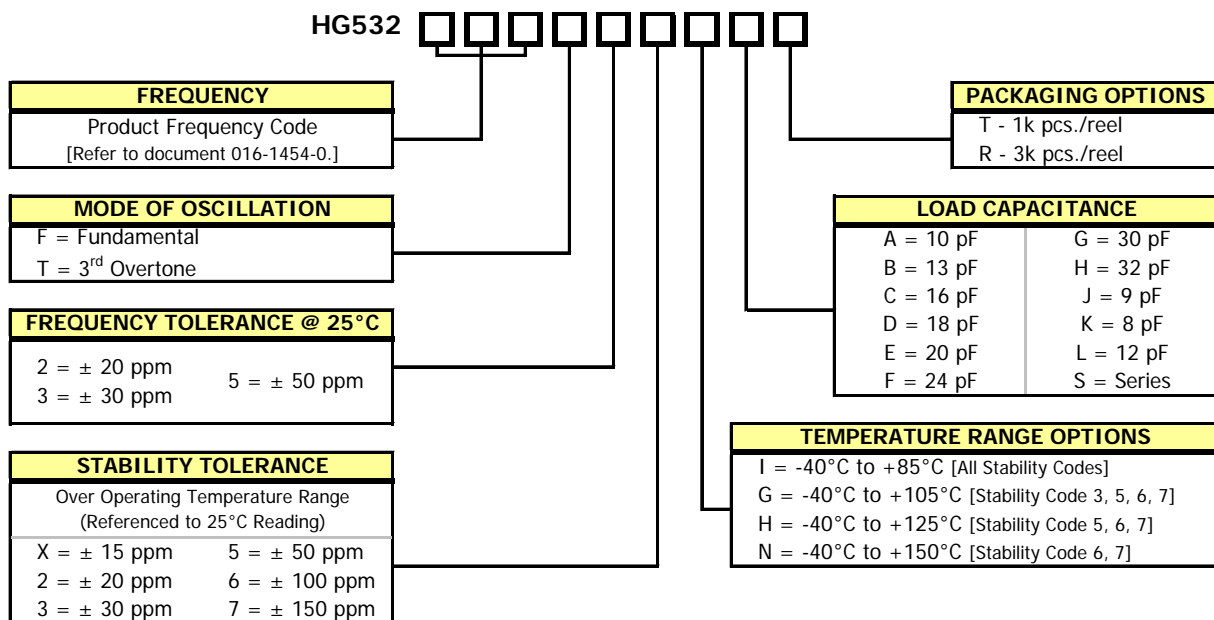
- **Standard 5.0mm x 3.2mm Glass Seal Package**
- **Fundamental Crystal Design**
- Frequency Range 8 – 40 MHz Fundamental, 24 – 120 MHz 3<sup>rd</sup> Overtone
- Frequency Tolerance;  $\pm 20$  ppm,  $\pm 30$  ppm and  $\pm 50$  ppm
- Frequency Stability, reference Ordering Information
- Operating Temperature, -40°C to +125°C standard
- Tape & Reel Packaging Standard, EIA-481
- **RoHS Compliant in Accordance with EU Directive 2011/65/EU**
  - Lead-Free Termination Finish
  - Exemption 7(c)-1, Electrical and electronic components containing lead [Pb] in glass



**APPLICATIONS**

Model HG532 is a low cost crystal developed for use in industrial applications requiring extended temperature ranges.

**ORDERING INFORMATION**

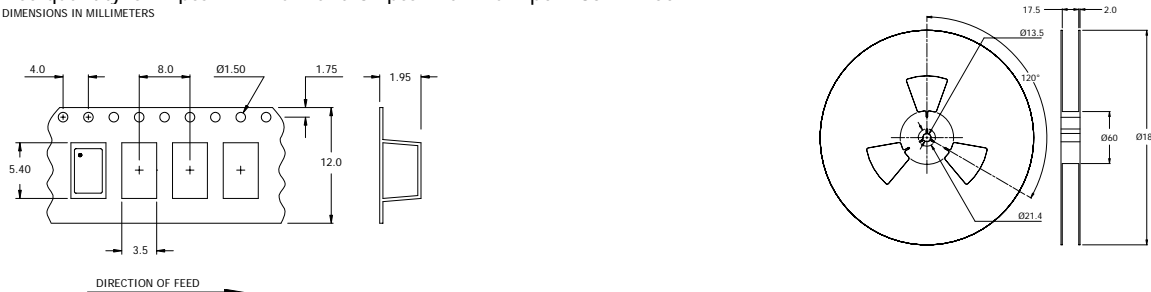


Not all performance combinations and frequencies may be available.  
Contact your local CTS Representative or CTS Customer Service for availability.

**PACKAGING INFORMATION [Reference]**

Device quantity is 1k pcs. minimum and 3k pcs. maximum per 180mm reel.

DIMENSIONS IN MILLIMETERS



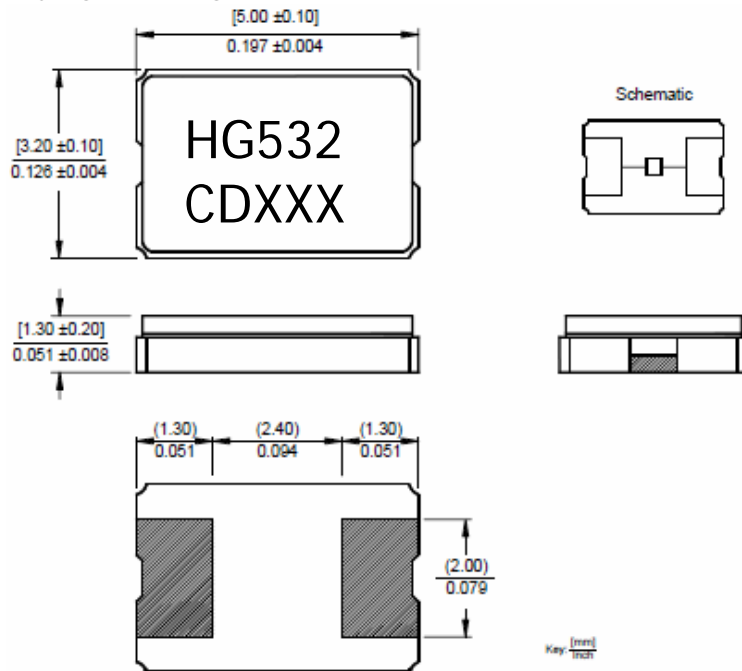
**ELECTRICAL CHARACTERISTICS**

| PARAMETER   | VALUE   |                  |                          |                  |
|---|---|------------------|--------------------------|------------------|
|   | Fundamental   |                  | 3 <sup>rd</sup> Overtone |                  |
| Operating Mode  | Fundamental   |                  | 3 <sup>rd</sup> Overtone |                  |
| Frequency Range   | 8.0 MHz to 40.0 MHz   |                  | 24.0 MHz to 120.0 MHz    |                  |
| Crystal Cut   | AT-Cut  |                  |                          |                  |
| Frequency Tolerance @ 25°C  | ±20 ppm, ±30 ppm, ±50 ppm   |                  |                          |                  |
| Frequency Stability Tolerance <sup>1</sup><br>[Operating Temperature Range, Referenced to 25°C Reading] | ±15 ppm, ±20 ppm, ±30 ppm,<br>±50 ppm, ±100 ppm, ±150 ppm   |                  |                          |                  |
| Operating Temperature Range <sup>1</sup>  | -40°C to +85°C [All Stability Codes]<br>-40°C to +105°C [Stability Code 3, 5, 6, 7]<br>-40°C to +125°C [Stability Code 5, 6, 7]<br>-40°C to +150°C [Stability Code 7] |                  |                          |                  |
| Equivalent Series Resistance  | 8.000 MHz - 9.999 MHz   | 150 Ohms maximum | 24.000 MHz - 53.999 MHz  | 150 Ohms maximum |
|   | 10.000 MHz - 15.999 MHz   | 60 Ohms maximum  | 54.000 MHz - 120.000 MHz | 100 Ohms maximum |
|   | 16.000 MHz - 40.000 MHz   | 50 Ohms maximum  |                          |                  |
| Load Capacitance or Resonance Mode<br>[See Ordering Information for More Options]                       | 8pF, 12pF standard  |                  |                          |                  |
| Shunt Capacitance (C <sub>0</sub> )   | 3.0 pF typical, 5.0 pF maximum  |                  |                          |                  |
| Drive Level   | 10 μW typical, 100 μW maximum   |                  |                          |                  |
| Aging @ +25°C   | ±5 ppm/yr maximum   |                  |                          |                  |
| Insulation Resistance [@ DC 100V]   | 500M Ohms minimum   |                  |                          |                  |
| Storage Temperature Range   | -40°C to +125°C   |                  |                          |                  |
| Reflow Condition, per JEDEC J-STD-020   | +260°C maximum, 10 Seconds maximum  |                  |                          |                  |

<sup>1</sup> See Ordering Information.

**MECHANICAL SPECIFICATIONS**

**PACKAGE DRAWING**



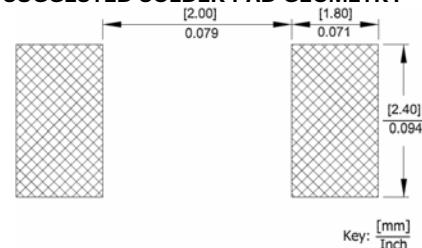
**MARKING INFORMATION**

1. HG532 - CTS Model Series.
2. C - CTS.
3. D - Date code. See Table I for codes.
4. XXX - Frequency code.  
[Reference CTS document 016-1450-0, Frequency Code Tables.]

**NOTES**

1. Complete CTS part number, frequency value, date code and manufacturing site code information must appear on reel and carton labels.
2. Termination pads [e4]; barrier plating is nickel [Ni] with gold [Au] flash plate.
3. Reflow conditions per JEDEC J-STD-020; 260°C maximum, 10 seconds.

**SUGGESTED SOLDER PAD GEOMETRY**



**TABLE I - DATE CODE**

| YEAR |      | MONTH |      |      |  |   | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------|------|-------|------|------|--|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 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   |     |