

FEATURES

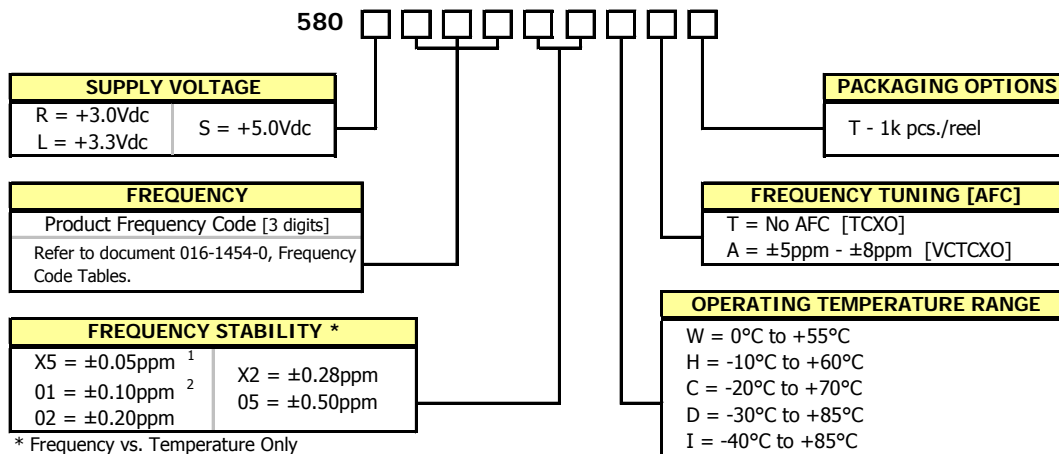
- **Clipped Sine Output**
- **Optional Voltage Control for Frequency Tuning [VCTCXO]**
- 5.0mm x 3.2mm Surface Mount Package
- Frequency Range 5 – 52 MHz
- Fundamental Crystal Design
- Operating Voltage, +3.3Vdc or +5.0Vdc
- Overall Frequency Stability ± 4.6 ppm
- Operating Temperature to -40°C to $+85^{\circ}\text{C}$
- Tape & Reel Packaging Standard, EIA-418
- **RoHS/Green Compliant [6/6]**



APPLICATIONS

The Model 580 is a quartz based analog TCXO with a Clipped Sine output and optional frequency tuning. M580 is suitable for applications requiring Stratum 3 performance such as base stations, small cells, 1588 and Synchronous Ethernet timing, wireless communications, test and measurement.

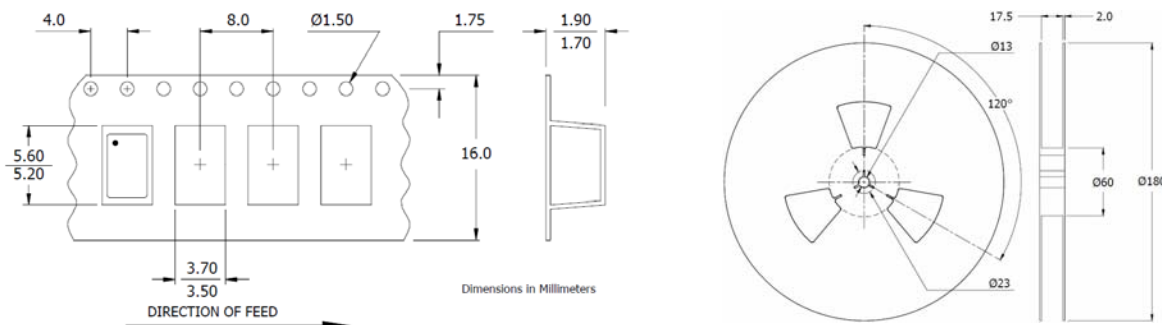
ORDERING INFORMATION



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. maximum per 180mm reel.

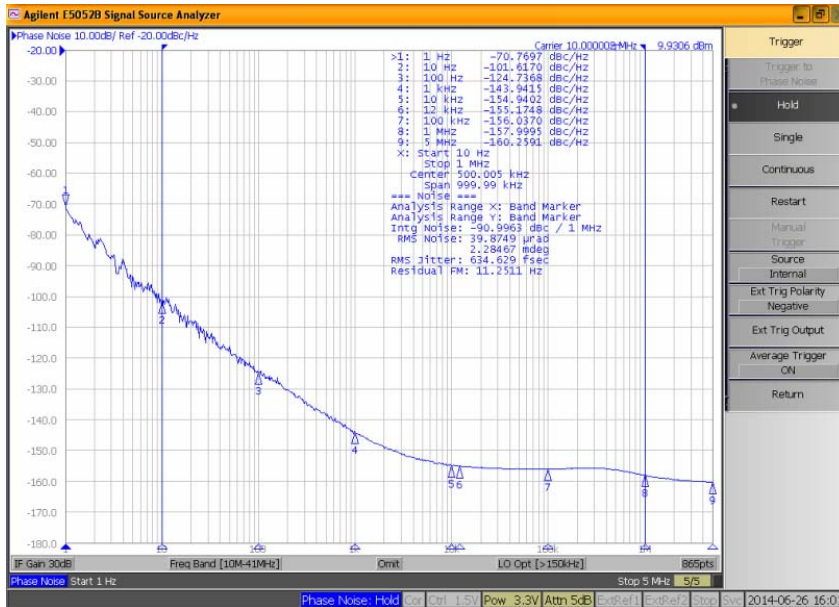


ELECTRICAL CHARACTERISTICS

| PARAMETER | | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNIT | | | | | |
|--------------------------|--|----------------------------------|--|----------------|-------|-----------------|--------|-------|--|---|---|------|
| ELECTRICAL PARAMETERS | Maximum Supply Voltage | V _{CC} | - | -0.6 | - | 6.0 | V | | | | | |
| | Maximum Control Voltage | V _C | - | -0.5 | - | V _{CC} | V | | | | | |
| | Storage Temperature | T _{STG} | - | -40 | - | +100 | °C | | | | | |
| | Operating Temperature | T _A | - | -20 | +25 | +70 | °C | | | | | |
| | Order Code 'C' | | | | | | | | | | | |
| | Order Code 'I' | | | -40 | | +85 | | | | | | |
| | Frequency Range | f ₀ | - | 5 | - | 52 | MHz | | | | | |
| | Supply Voltage | V _{CC} | ±5% | | 2.85 | 3.0 | 3.15 | V | | | | |
| | Order Code 'R' | | | | 3.14 | 3.3 | 3.47 | | | | | |
| | Order Code 'L' | | | | 4.75 | 5.0 | 5.25 | | | | | |
| | Order Code 'S' | | | | | | | | | | | |
| | Supply Current | I _{CC} | - | - | - | - | 3.5 | mA | | | | |
| | Frequency Stability | Δf/f ₀ | Reference to f ₀ , Including 20 years aging @ +25°C, at time of shipment | - | - | - | 4.60 | ± ppm | | | | |
| | Overall Frequency Stability | | | | | | | | | | | |
| | vs. Initial Calibration | | | | | | | | | | | |
| | vs. Operating Temperature ¹ | | | | | | | | [Fmax. - Fmin.]/2, over -40°C to +85°C | - | - | 0.28 |
| | vs. Supply Voltage | | | | | | | | ±5% change @ +25°C | - | - | 0.20 |
| | vs. Load | | | | | | | | ±5% change | - | - | 0.20 |
| | vs. Aging | 20 years @ +40°C | - | - | 3.00 | | | | | | | |
| | Holdover | Δf/f ₀ | [Fmax. - Fmin.]/2, over 24 hours | - | - | - | 0.40 | | | | | |
| | Control Voltage | V _C | - | 0.5 | 1.5 | 2.5 | V | | | | | |
| | Frequency Tuning [VCTCXO Only] | - | V _C = 1.5V ±1.0V, monotonic positive | | 5 - 8 | | | ± ppm | | | | |
| | V _C Input Impedance | ZV _C | - | 100 | - | - | | kOhm | | | | |
| | Output Waveform | | AC coupled Clipped Sinewave | | | | | | | | | |
| | Output Voltage Levels | | | 0.8 | - | - | | Vp-p | | | | |
| | Output Load | R _L // C _L | - | 10kOhm // 10pF | | | | | | | | |
| | Output Duty Cycle | SYM | @ 50% Level | 45 | - | 55 | | % | | | | |
| | Start Up Time | T _S | - | - | - | 2 | | ms | | | | |
| Phase Noise ² | - | - | | | | | dBc/Hz | | | | | |

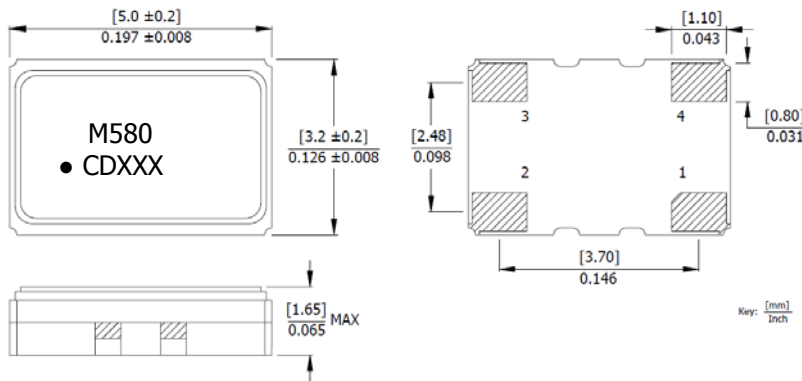
Notes:

- See Ordering Information for stability options.
- Phase Noise performance may vary based on output frequency. See example plot at 10MHz below.



MECHANICAL SPECIFICATIONS

PACKAGE DRAWING



MARKING INFORMATION

1. M580 – CTS Model Series.
 2. ● – Pin 1 identifier.
 3. C – CTS identifier.
 4. D – Date code. See Table II for codes.
 5. xxx – Frequency Code.
- Refer to document 016-1454-0, Frequency Code Tables.

NOTES

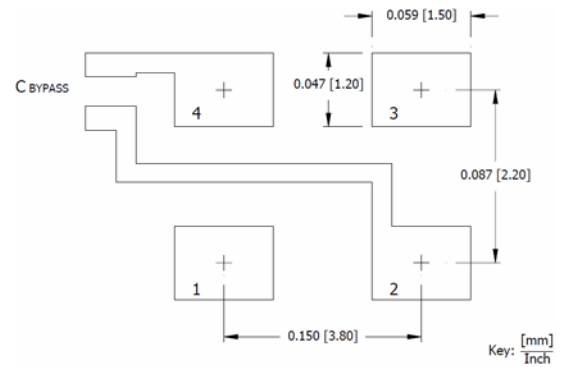
1. DO NOT make connections to non-labeled pins. Castellation pins may have internal connections used in the manufacturing process.
2. Termination pads (e4); barrier plating is nickel [Ni] with gold [Au] flash plate.
3. Reflow conditions per JEDEC J-STD-020, 260°C maximum.
4. MSL = 1.

D.U.T. PIN ASSIGNMENTS

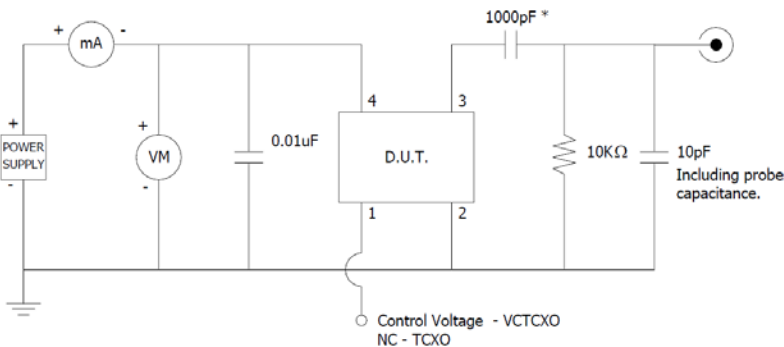
| PIN | SYMBOL | DESCRIPTION |
|-----|-----------------|---------------------------------------|
| 1 | V _C | Control Voltage – VCTCXO NC - TCXO |
| 2 | GND | Circuit & Package Ground |
| 3 | Output | Clipped Sine Wave Output |
| 4 | V _{CC} | Supply Voltage |

1. DC-Cut Capacitor Required.
Add 1000pF capacitor between TCXO output and input of load.

SUGGESTED SOLDER PAD GEOMETRY



TEST CIRCUIT – CLIPPED SINE LOAD



* DC-Cut Capacitor: Add 1000pF capacitor between the TCXO output and input of load.

TABLE II – DATE CODE

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



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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