



## TM PRODUCT FAMILY Surface Mount TCXO 2.5 x 2.0mm

### Features

- Ultra-Small Package
- Temperature Stability  $\pm 0.5 \sim \pm 2.5$  ppm
- Operating Temperature Range  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$



### ❖ Specifications

Parameter		Value
FREQUENCY RANGE		13 ~ 52 MHz
SUPPLY VOLTAGE		1.8 ~ 3.3 V
INPUT CURRENT		2.5 mA max
FREQUENCY STABILITY	vs. TEMPERATURE	$\pm 0.5 \sim \pm 2.5$ ppm
	vs. LOAD ( $\pm 10\%$ )	$\pm 0.2$ ppm max
	vs. SUPPLY VOLTAGE	$\pm 0.2$ ppm max
	AGING 1 <sup>st</sup> YEAR	$\pm 1.0$ ppm max
FREQUENCY TOLERANCE at 25°C AFTER 2 REFLAWS		$\pm 2.0$ ppm max
OPERATING TEMPERATURE RANGE <sup>1</sup>		$-40 \sim +85^{\circ}\text{C}$
STORAGE TEMPERATURE RANGE		$-40 \sim +85^{\circ}\text{C}$
CLIPPED SINEWAVE OUTPUT VOLTAGE		0.8 V <sub>p-p</sub> typ
OUTPUT LOAD		10 k $\Omega$ // 10 pF
START-UP TIME		5 ms max
PHASE NOISE at 1 kHz OFFSET		-130 dBc/Hz max

NOTE: 1. NOT ALL STABILITIES ARE AVAILABLE FOR ALL OPERATING TEMPERATURE RANGES. CONTACT FACTORY FOR AVAILABILITY.

### ❖ Environmental

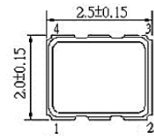
Parameter	Value
Moisture Sensitivity Level	1
RoHS	Compliant
REACH SVHC	Compliant
Halogen Free	Compliant
Termination Finish	Au
Unit Weight (grams)	0.051

RS, Professionally Approved Products, gives you professional quality parts across all products categories. Our range has been testified by engineers as giving comparable quality to that of the leading brands without paying a premium price.



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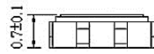
## ❖ Mechanical Specification



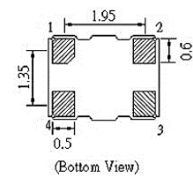
**OUTLINE TOLERANCE**  
IF NOT SPECIFIED  
±0.4mm / 0.015"

**PIN FUNCTIONS:**

- [1] V<sub>c</sub>
- [2] GND
- [3] OUTPUT \*
- [4] VCC



\* Add a 10 nF DC-cut capacitor to the output pad of the TCXO.



## ❖ Part Numbering

Product Family	-	Frequency	-	Stability	-	Temperature Range	-	Voltage	-	Output
TM		Frequency (kHz)		Stability (ppm) A = ±0.5 C = ±1.5		Temp Range (°C) D3 = -40 ~ +85 F3 = -30 ~ +85		Supply Voltage (V) 18 = 1.8V 33 = 3.3V		S = Clipped Sinewave

**EXAMPLE: TM-32.000-AF3-33-S**

Surface Mount TCXO 2.5 x 2.0mm, 32.000MHz, Stability ±0.5ppm over 30°C ~ +85°C, Supply Voltage 3.3V, Clipped Sinewave Output

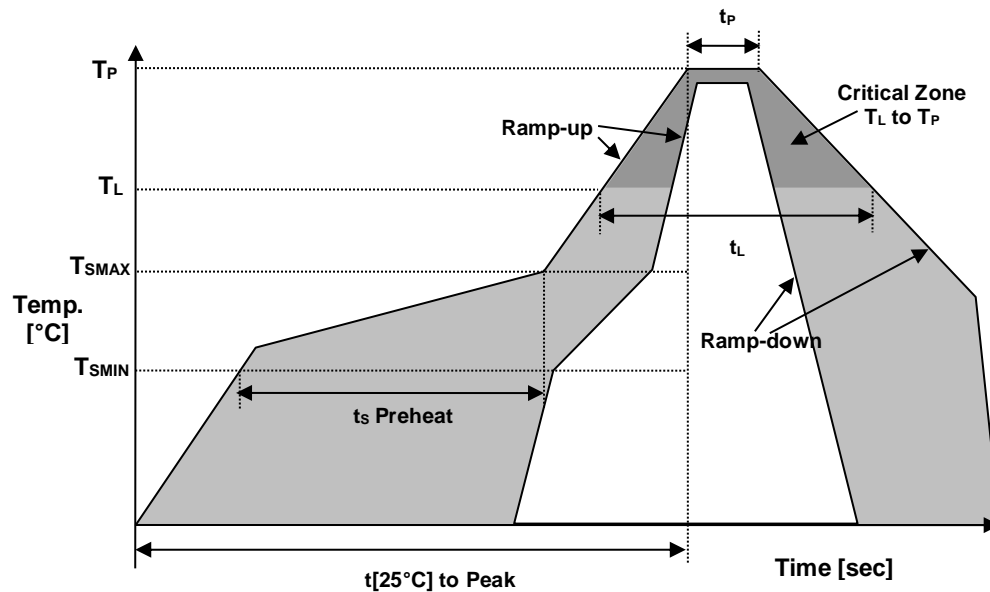
**EXAMPLE: TM-10.000-CD3-18-S**

Surface Mount TCXO 2.5 x 2.0mm, 10.000MHz, Stability ±1.5ppm over 40°C ~ +85°C, Supply Voltage 1.8V, Clipped Sinewave Output



## TM PRODUCT FAMILY

### Reflow Profile



Reflow Profile (Reference IPC/JEDEC J-STD-020)		
Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°C
Time ( $T_{SMIN}$ to $T_{SMAX}$ )	$t_s$	60 – 180 sec.
Temperature	$T_L$	217°C
Peak Temperature	$T_P$	260°C
Ramp-Up Rate	$R_{UP}$	3°C / sec. max
Ramp-Down Rate	$R_{DOWN}$	6°C / sec. max
Time within 5°C of Peak Temperature	$T_P$	10 sec.
Time $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}]$ to Peak	480 sec.
Time	$T_L$	60 – 150 sec.

July 27, 2017