

# **ECS-TXO-2016**

## **SMD HCMOS TCXO**

Request a Sample



The sub miniature ECS-TXO-2016 is a miniatue SMD CMOS TCXO. The  $2.0 \times 1.6 \times 0.8$  mm ceramic package is ideal for LoRa WAN, and wireless IoT applications where stability is critical.

### **OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS**



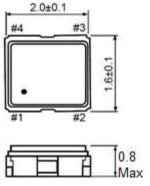
- Low Profile
- 2.0 x 1.6 mm Footprint
- Extended Temp Range
- RoHS Compliant

PARAIVIETERS	CONDITIONS ECS-1XO-2016		UNITS		
		MIN	TYP	MAX	
Frequency Range		9.500		60.000	MHz
	Tolerance at +25°C			± 2.0	ppm
	Vs. Temp (-30 ~ +85°C)			±2.0	ppm
Frequency Stability	Vs. Temp (-40 ~ +85°C)			± 2.5	ppm
	Voltage Change Vdd ±5%			±0.2	ppm
	Load Change (±10%)			±0.2	ppm
Aging	Per year @ +25°C			±1.0	ppm
Supply Voltage (Vdd)	Specify in P/N	+1.8, +2.5, +2.8, +3.3 ±10% V DC		V DC	
Standby Current		10 μ		μΑ	
Output	CMOS		15		pF
Output voltage Level	Vol:10%Vdd max./Voh:90%Vdd min.V DC				
Rise & Fall time	10%Vdd - 90%Vdd			5	ns
Duty Cycle	@ ½ Vdd			45/55	%
Phase Noise	@ 10 KHz offset		-145		dBc/Hz

#### **DIMENSIONS (mm)**

#### **CURRENT CONSUMPTION, mA** Max.

FREQ.	9.5~ 10 MHz	10.1~ 20 MHz	20.1~ 30 MHz	30.1~ 40 MHz	40.1 ~60 MHz
+1.8V & +2.5V	3.1	3.7	4.2	4.6	5.5
+2.8V & +3.3V	4.0	4.8	5.5	6.0	7.0



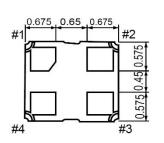


Figure 1)	Тор,	Side,	and	Bottom	views

PAD CONNECTIONS		
1	Tri-state	
2	Gnd	
3	Output	
4	Vdd	

Tri State Function		
Pin 1	Output	
High or NC	Active	
Low	Disable Hi-Z	

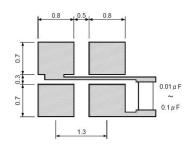


Figure 2) Suggested Land Pattern

#### PART NUMBERING GUIDE: Example ECS-TXO-2016-33-160-TR

ECS - SERIES	Voltage	FREQUENCY ABBREVIATION	PACKAGING
TXO-2016 2.0 x 1.60 mm TCXO	18 = +1.8V 25 = +2.5V 28= +2.8V 33 = +3.3V	160 = 16.000 MHz See Developed Frequencies Pg.2	TR = Tape & Reel 1K/Reel

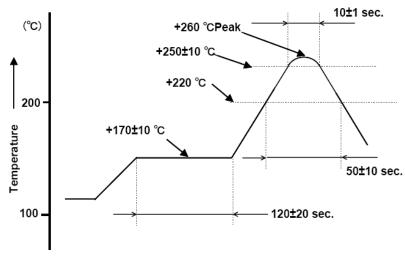
<sup>\*</sup> Standard specification, contact ECS for custom Options





#### **FREQUENCY ABBREVIATIONS**

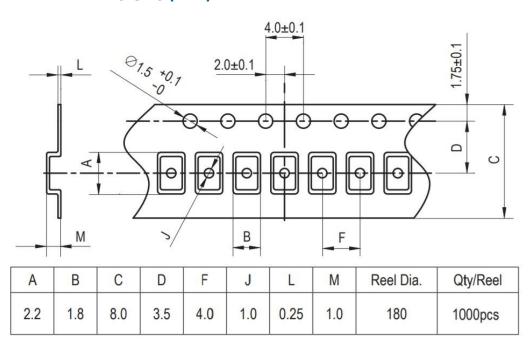
FREQUENCY MHz	CODE
10.000	100
12.000	120
16.000	160
20.000	200
25.000	250
32.000	320
40.000	400
50.000	500



SOLDER PROFILE
Peak solder Temp +260°C Max 10 sec Max.
2 Cycles Max.
MSL 1, Lead Finish Au

Figure 1) Suggested Reflow Profile

#### **POCKET TAPE DIMENSIONS (mm)**



# **Mouser Electronics**

**Authorized Distributor** 

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## ECS:

ECS-TXO-2016-33-250-TR ECS-TXO-2016-33-320-TR ECS-TXO-2016-33-400-TR ECS-TXO-2016-33-500-TR ECS-TXO-2016-33-100-TR ECS-TXO-2016-33-160-TR ECS-TXO-2016-33-200-TR