PETERMANN TECHNIK
your clocking experts

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LOW POWER HIGH STABILITY TCXO

SERIES „TXO2016-18-2.5-W-32M-1-CSW“

TCXO SPECIFICATION

PARAMETER AND CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITION
FREQUENCY RANGE						
Output Frequency Range	f		32.000		MHz	
FREQUENCY STABILITY AND AGING						
Frequency Stability / Initial Tolerance	f_In.-T.	-1.5	-	+1.5	ppm	Max. after 2 times reflow (ref. to nominal frequency)[1]
Frequency Stability vs. Temperature	f_Temp.	-2.5	-	+2.5	ppm	Over –40/+85°C (ref. to +25°C)
Frequency Stability vs. Supply Voltage	f_V_{DD}	-0.2	-	+0.2	ppm	1.8 VDC ±5%
Frequency Stability vs. Load Variation	f_Load	-0.2	-	+0.2	ppm	Load R//C=(10 kΩ//10pF)±10%
Frequency Stability vs. Aging	f_Aging	-1.0	-	+1.0	ppm	Max. per year (ref. +25°C)
OPERATING TEMPERATURE RANGE						
Operating Temperature Range	T_use	-40	–	+85	°C	
Storage Temperature Range	T_stor	-40	–	+85	°C	
SUPPLY VOLTAGE AND CURRENT CONSUMPTION						
Operable Supply Voltage	V_{DD}	+1.71	+1.8	+1.89	VDC	Specified frequency tolerances are guaranteed for 1.8 VDC ±5%
Current Consumption	I_{DD}	-	-	+2.0	mA	Without load
CLIPPED SINE WAVE OUTPUT CHARACTERISTICS						
Output Level		0.8	-	-	Vp-p	Clipped Sine Wave
Symmetry		40/60	-	60/40	%	GND level (DC cut)
Load Impedance (resistance part)	Load_R	9	10	11	kΩ	
Load Impedance (parallel capacitance)	Load_C	9	10	11	pF	
PHASE NOISE / HARMONICS						
Phase Noise / 1 kHz offset	SSB	-	-	-130	dBc/Hz	Relative to f0 offset 1 kHz
Harmonics		-	-	-5	dBc	
STARTUP TIMING						
Startup Time	T_start	-	-	2.0	ms	90% of final Vout Level
ORDERING DATA						
RoHS	Lead free and RoHS compliant					
Delivery Form	Tape & Reel / 3.000 pcs per reel					
Ordering Code	TXO2016-18-2.5-W-32M-1-CSW					
Marking	Line 1 = Frequency + Model code Line 2 = Logo + Date code (xxx)					
Customer P/N						
PETERMANN P/N	OEU90010109					

Note:
1. Please leave after reflow in 2 hours or more at +25°C, reflow solder process can shift the frequency ±1.5 ppm max. If frequency get shifted by reflow process, frequency do not come back to initial value before reflow solder process.
2. Reference Temperature for all parameters: +25°C
3. Do not use ground-line below oscillator.
4. Do not use cleaning baths operating at ultrasonic frequencies or ultrasonic welding processes.

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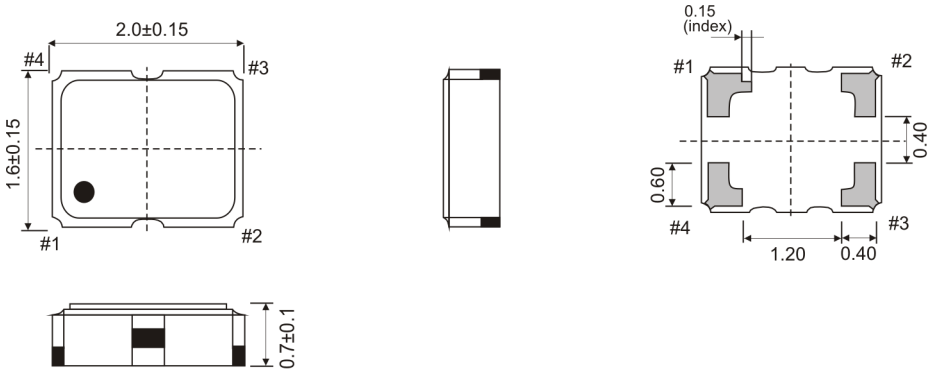
DIMENSIONS AND PATTERNS

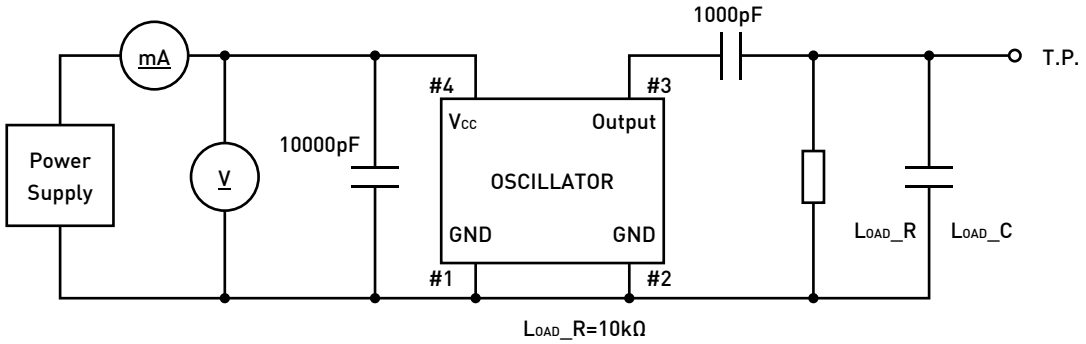
PACKAGE SIZE – DIMENSIONS (UNIT:MM)

2.0 X 1.6 X 0.7 MM



PIN	CONNECTION
#1	GROUND
#2	GROUND
#3	OUTPUT
#4	VDD

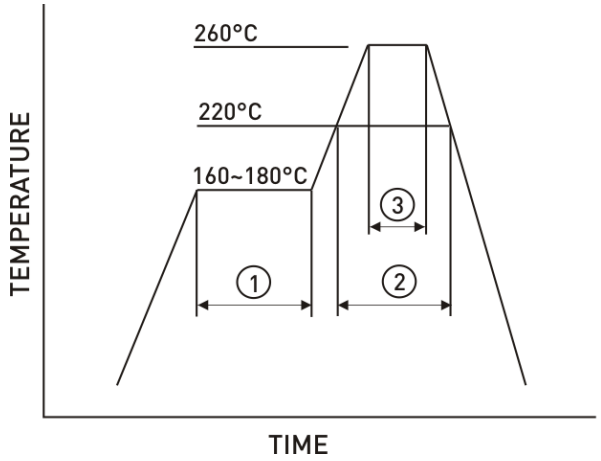
TEST CIRCUIT CLIPPED SINE WAVE OUTPUT



LOAD_R=10kΩ

LOAD_C=10pF (Include Jig stray capacitance)

REFLOW SOLDER PROFILE



①	Preheat	160~180°C	120sec.
②	Primery heat	220°C	60sec.
③	Peak	260°C	10sec. max.

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PREMIUM QUALITY BY PETERMANN-TECHNIK

DMSZ certified according to ISO 9001 QM 00886

OUR COMPANY IS CERTIFIED ACCORDING TO ISO 9001:2015 IN OCTOBER 2016 BY THE DMSZ CERTIFIKATION GMBH.

THIS IS FOR YOU TO ENSURE THAT THE PRINCIPLES OF QUALITY MANAGEMENT ARE FULLY IMPLEMENTED IN OUR QUALITY MANAGEMENT SYSTEM AND QUALITY CONTROL METHODS ALSO DOMINATE OUR QUALITY STANDARDS.