

Helping Customers Innovate, Improve & Grow



Description

OX-501 is a small form factor precision OXCO providing excellent levels of overall stability in a tiny footprint, making the OX-501 ideal for designs where high performance is required but space is limited.

Features

- 6-Pin SMD package
- Fast warm-up
- Frequency Range, 10 MHz to 40 MHz
- Standard frequencies: 10, 12.8, 19.2, 20, 38.88, MHz

Applications

- Base stations
- Test equipment
- Small Cells
- Military communication equipment
- Packet based timing (e.g. 1588).

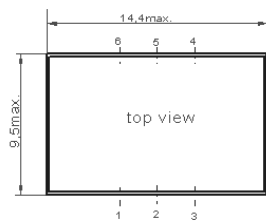
Performance Specifications

Parameter	Frequency Stabilities ¹				Condition	Options ⁵
	Min	Typ	Max	Units		
vs. operating temperature range (referenced to +25°C)	-20		+20	ppb	-20 to +70°C	
	-100		+100	ppb	-20 to +70°C	
	-20		+20	ppb	-40 to +85°C	
	-100		+100	ppb	-40 to +85°C	
Initial tolerance	-0.5		+0.5	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	-20		+20	ppb	V _s ±5% static	
vs. load change	-30		+30	ppb	Load ±5% static	
vs. aging / day	-5		+5	ppb	after 30 days of operation	
vs. aging / year	-500		+500	ppb	≤ 40 MHz after 30 days of operation	
Warm-up time			3	minutes	to ±200ppb of final frequency (1 hour reading) @ +25°C	

Performance Specifications

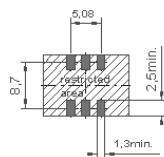
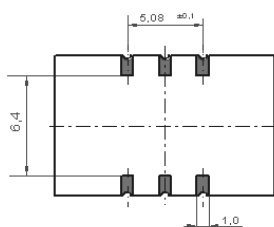
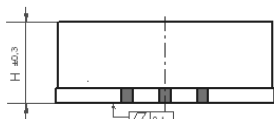
Supply Voltage (Vs)					
Parameter	Min	Typical	Max	Units	Condition
Supply voltage (standard)	3.135	3.3	3.465	VDC	
Power consumption		1.4	2.0	Watts	during warm-up
		0.5	0.66	Watts	steady state @ +25°C
RF Output					
Signal [standard]	HCMOS				
Load		15		pF	
Signal Level (Vol)			0.4	VDC	with Vs=3.3V and 15pF Load
Signal Level (Voh)	2.4			VDC	with Vs=3.3V and 15pF Load
Duty Cycle	45		55	%	@ (Voh-Vol)/2
Frequency Tuning (EFC)					
Tuning Range	Fixed OCXO; No adjust				
Linearity	10%				
Tuning Slope	Positive				
Control Voltage Range	0.0	1.4	2.8	VDC	with Vs=3.3V
Additional Parameters					
Phase Noise ³		-60	-45	dBc/Hz	1 Hz
		-100	-95	dBc/Hz	10 Hz
		-128	-120	dBc/Hz	100 Hz
		-140	-135	dBc/Hz	1 kHz
		-148	-145	dBc/Hz	10 kHz
Weight			8.0	g	
Processing & Packing	Handling & Processing Note				
Absolute Maximum Ratings					
Supply voltage (Vs)			4.0	V	with Vs=3.3 VDC
Output Load			50	pF	
Operable Temperature Range	-40		+85	°C	
Storage Temperature Range	-55		+85	°C	

Outline Drawing / Enclosure



Dimensions in mm

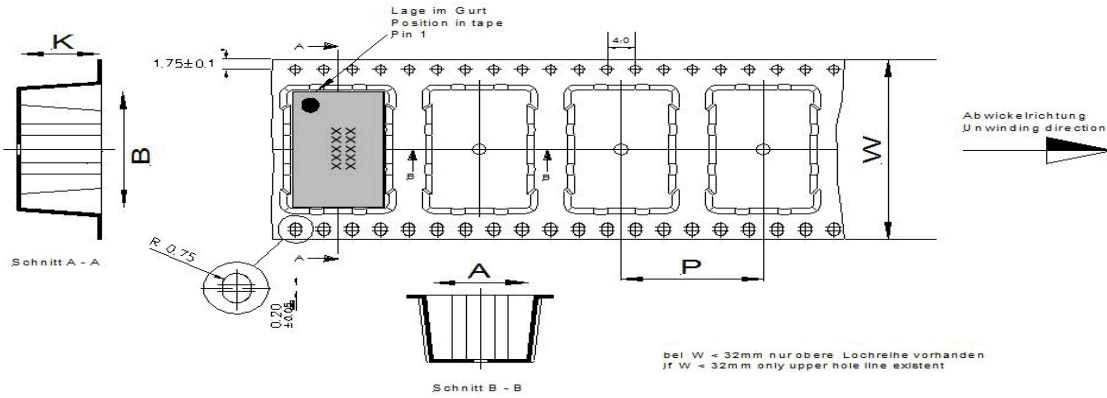
OX-501	
Height "H"	cover material
6.2	plastic



Padvorschlag
land pattern
recommendation

Pin Connections	
1	I.C (Do not connect)
2	N.C
3	Ground (Case)
4	RF Output
5	N.C
6	Supply Voltage Input

Standard Shipping Method (OX-501)



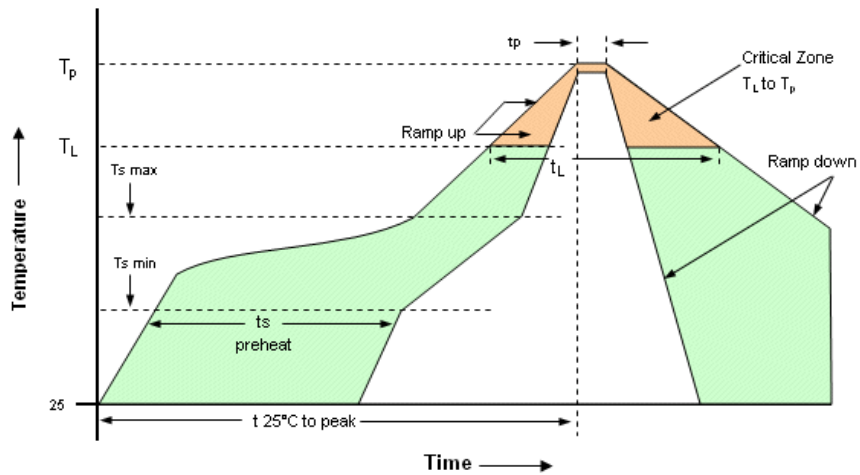
Maßangaben in mm :
A, B und K Maße vom Bauelement abhängig.
Fertigungstoleranzen entsprechen der DIN IEC 286-3

Dimension in mm :
A, B and K are dependent upon component dimensions,
production tolerance complying DIN IEC 286-3

All dimensions in millimetres unless otherwise stated.

Enclosure Type	Tape Width W (mm)	Quantity per meter	Quantity per reel	Dimension P
OX-5011 (6.2 mm)	24	83.5	850	12

Recommended Reflow Profile

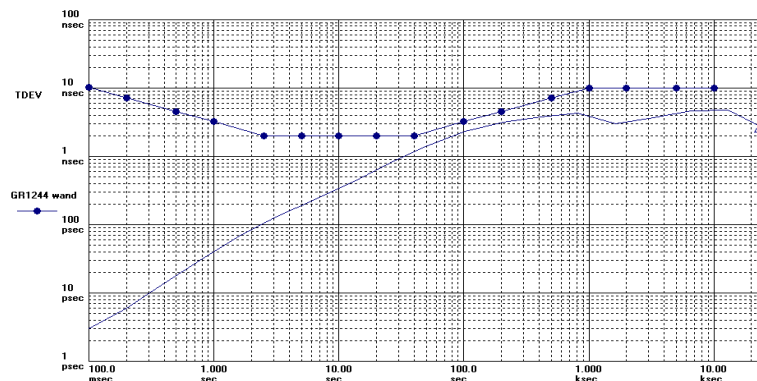
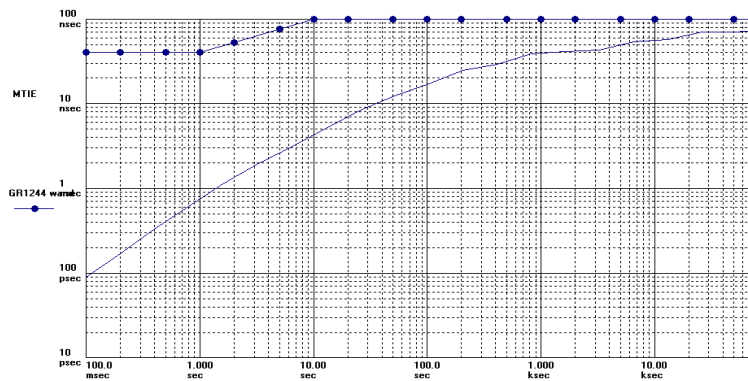


Profile Feature	Pb-Free Assembly/ Sn-Pb Assembly	Profile Feature	Pb-Free Assembly/ Sn-Pb Assembly
Average ramp-up rate (T_L to T_p)	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min T_{Smin} -Temperature Min T_{Smax} -Time (min to max) t_s	150°C 200°C 60-180 seconds	Time maintained above -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
T_{Smax} to T_L -Ramp-up Rate	3°C/second max		
Time maintained above -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds	Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Peak Temperature (T_p)	max 260°C	Ramp-down Rate	6°C/ second max

Note: All temperatures refer to topside of the package, measured on the package body surface.

Performance Data

GR-1244 Wander Generation: MTIE and TDEV with 3mHz high pass filter applied to free-running data



Ordering Information

OX - 501 1 - E A E - 208 0 - 20M0000000

Product Family
OX: OCXO

Package
SMD version

Height
1: 6.2mm

Supply Voltage
E: 3.3V

RF Output Code
A: HCMOS

Temperature Range
E: -40°C to +85°C
J: -20°C to +70°C

Stability Code
208: ±20ppb
107: ±100ppb

Frequency

Frequency Control
0: No Tuning

Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
3. Phase noise degrades with increasing output frequency.
4. Subject to technical modification.
5. Contact factory for availability.

For Additional Information, Please Contact

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