OX-221-9101-24M576

OCXO

Nominal frequency (f0) **24.576 MHz**

Performance Specifications

Frequency stabilities					
Parameter	Min	Typical	Max	Units	Condition
Over all (df/f0)	-4.6		+4.6	ppm	-40...85°C include: Temp. Stab, supply, load stab, initial, 20 years aging
vs. operating temp. range (df/f@25°C)	-5		+5	ppb	-40...85°C
initial tolerance (df/f0)	-200		+200	ppb	@25 °C
vs. supply voltage change (df/f)	-2		+2	ppb	static; 3.3 V ±5 %
vs. load change (df/f))	-2		+2	ppb	static; Load +5 % -5 %
vs. aging / daily (df/f)	-1		+1	ppb	after 30 days ; @ 25 °C
vs. aging / year (df/f)	-100		+100	ppb	after 30 days ; @ 25 °C
Holdover/Drift				ppb ppb [pk-pk]	over 24 hours and ±2.8°C over 24 hours; -40...85°C
Note:	S3E compliant according GR1244				

RF output					
Parameter	Min	Typical	Max	Units	Condition
Signal		LVCMOS			
Load	13.5	15	16.5	pF	
Fan out					
Rise Time			5	ns	@10 to 90 %Vout
Fall Time			5	ns	@90 to 10 %Vout
Duty cycle	45		55	%	@1.65 V
V Low			0.4	V	
V High	2.4			V	
Sub Harmonics			-40	dBc	
Spurious			-90	dBc	

Supply voltage					
Parameter	Min	Typical	Max	Units	Condition
Supply voltage (Vs)	3.14	3.3	3.47	V	
Current consumption steady state			400	mA	@ Vsnom & 25 °C
			700	mA	@ Vsnom & -40 °C
Current consumption during warm up			1200	mA	@ Vs

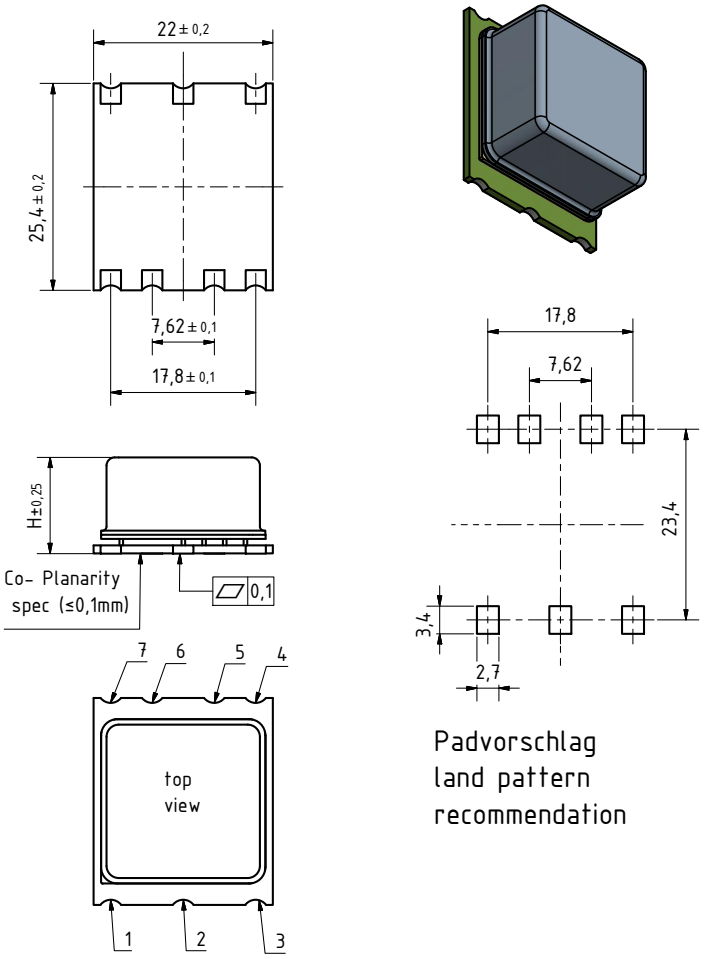
Additional Parameters					
Parameter	Min	Typical	Max	Units	Condition
Warm up time			5	min	@ 25 °C to final frequency
Phase Noise		-80		dBc/Hz	@1Hz
		-110		dBc/Hz	@10Hz
		-139		dBc/Hz	@100Hz
		-152		dBc/Hz	@1kHz
		-159		dBc/Hz	@10kHz
		-159		dBc/Hz	@100kHz
Jitter			0.3	psec (RMS)	@ 12kHz to 5MHz
MTIE		0.1		ns	1.0 sec
		0.9		ns	10.0 sec
		5		ns	100.0 sec
		15		ns	1000.0 sec
TDEV	0.003 ns				1 s
	0.04 ns				10 s
	0.5 ns				100 s
Additional information	wander generation tdev & mtie at 1 mHz constant temp: meets GR-1244 mask wander generation tdev & mtie at 1 mHz variable temp: meets GR-1244 mask				
Processing & Packing	handling&processing note				

Additional Environmental Conditions	
Parameter	Description
RoHS compliance	100% RoHS 6 compliant
Washable	washable device
ESD HBM	JESD22-A114F Class 1C - 10* 2000V
Mechanical Shock	MIL-STD-202 Meth 213B Cond. C - 100g 6ms 6 shocks in each direction
Vibration, Sine	JESD22-B103 Cond.2 - 10g 10-2000Hz 4x in each 3 axis 4min sweep time
Moisture Sen. Level	JESD22-A113-B - only if > MSL 1
Solderabiltiy	J-STD-002C Cond. A, Trough hole device; Cond.B, SMD (correspond to MIL-STD-883 Meth 2003) - 255°C (diving Time 5 ±0,5sec.) Dip&Look with 8h damp pre-treatment: solder wetting >95%
High temp operating life(HTOL)	MIL-STD-202 Meth108A Cond C - 1000h @ 105°C under voltage
Low temp operating life(LTOL)	IEC 60068-2-1 Cond. Ae - Ta= -40°C, >1000 hours with bias for OCXO
Reflow Simulation Test	MIL-STD-202G Meth 210F Cond. K - Total 3x Lead free profile (for SMD)
Temperature Cycling	MIL-STD-883G Meth.1010.8 Cond.B - 1000cycles -55/+125°C; cycle time 30 min.

Absolute Maximum Ratings					
Parameter	Min	Typical	Max	Units	Condition
Supply voltage (Vs)			5.5	V	
Operable temperature range	-40		+85	°C	
Storage temperature range	-40		+85	°C	

Enclosure

G275



all units in mm

Enclosure Info	
Parameter	Description
Type	G275D
Height	12.1 mm
Weight	9 g

Enclosure Info	
Parameter	Description
Pin Connections	1: I.C. (Do not connect) 2: N.C. 3: Vs (supply voltage input) 4: RF-Output 5: N.C. 6: N.C. 7: GND
Marking	OX-221-9101 24,576 MHz Ser.No. AYYWW * * pin-1 marking
Package cover material	Metal
Package base material	Metal

Solder profile

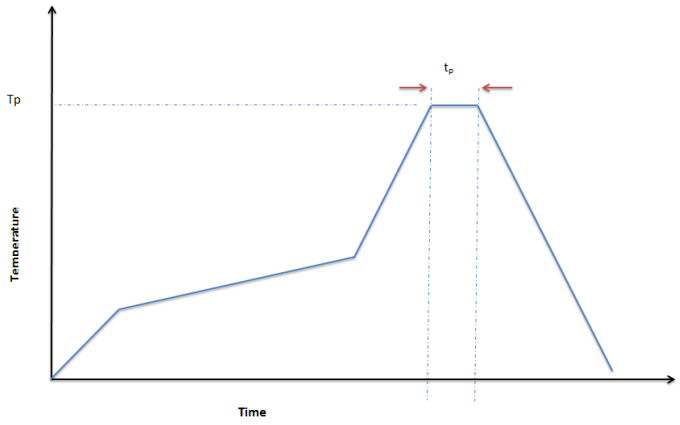
TP: max 260°C (@ solder joint, customer board level)

T_p: max: 10…30 sec

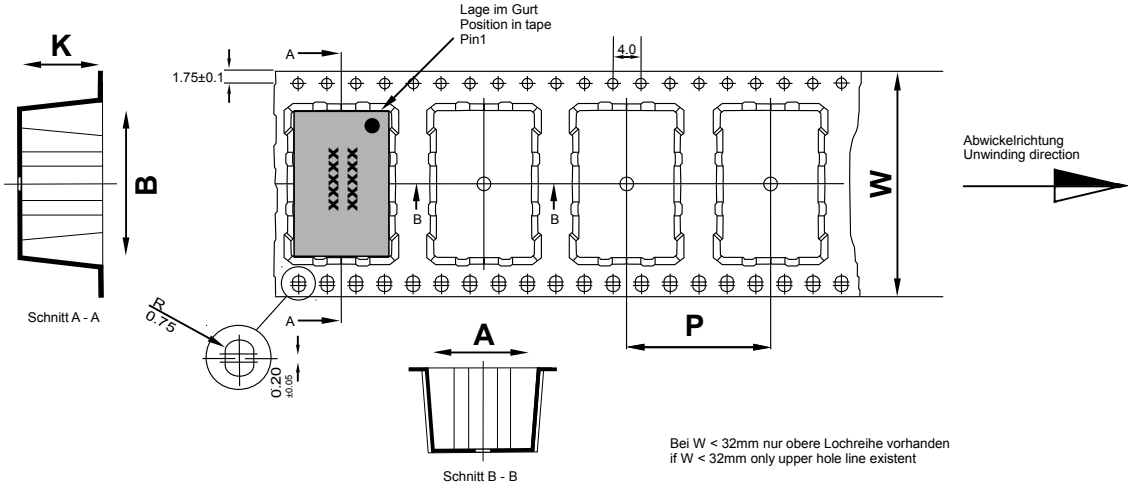
Additional Information:

This SMD oscillator has been designed for pick and place reflow soldering

SMD oscillators must be on the top side of the PCB during the reflow process.



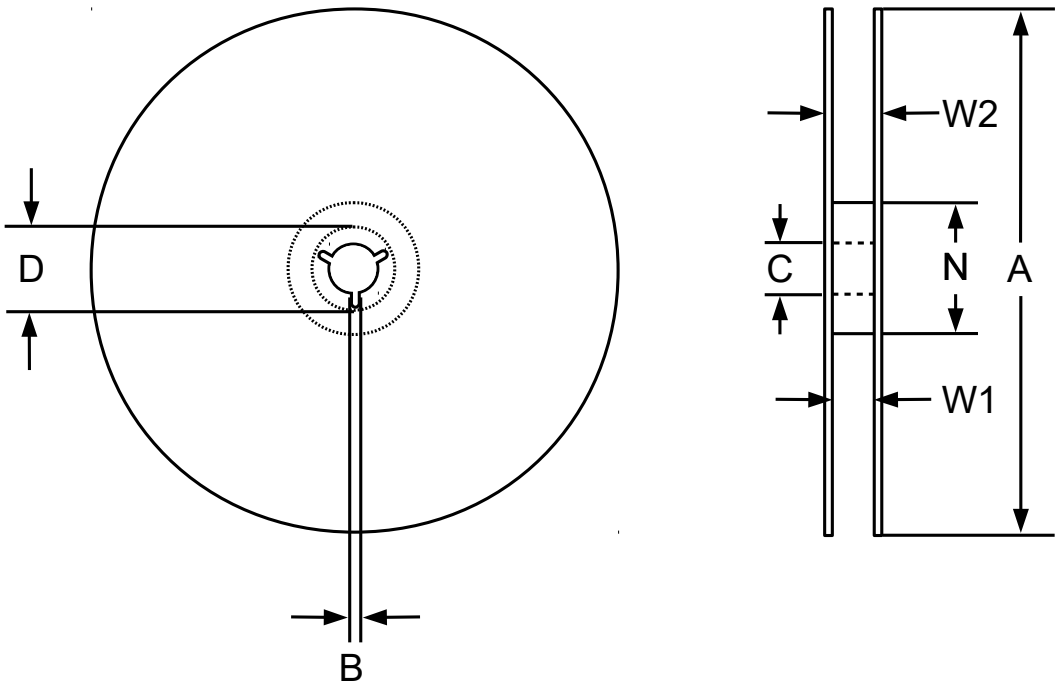
Standard shipping method



Maßangaben in mm:	Dimension in mm:
A, B und K Maße von Bauelement abhängig	A, B und K are dependent uppon component dimensions
Fertigungstoleranzen entsprechen der DIN IEC 286-3	production tolerance complying DIN IEC 286-3

All dimensions in millimeters unless otherwise stated

Tape Info						
Tape width W [mm]	Quantity per meter	Quantity per reel	P [mm]	A [mm]	B [mm]	K [mm]
44	35.7	175	28	22.5	25.9	12.8



Reel Info						
A [mm]	B [mm]	Size C [mm]	D [mm]	N [mm]	W1 [mm]	W2 [mm]
330	1.5	13	20.2	100	45.5	49.1

Notes: Unless otherwise stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
Subject to technical modification.

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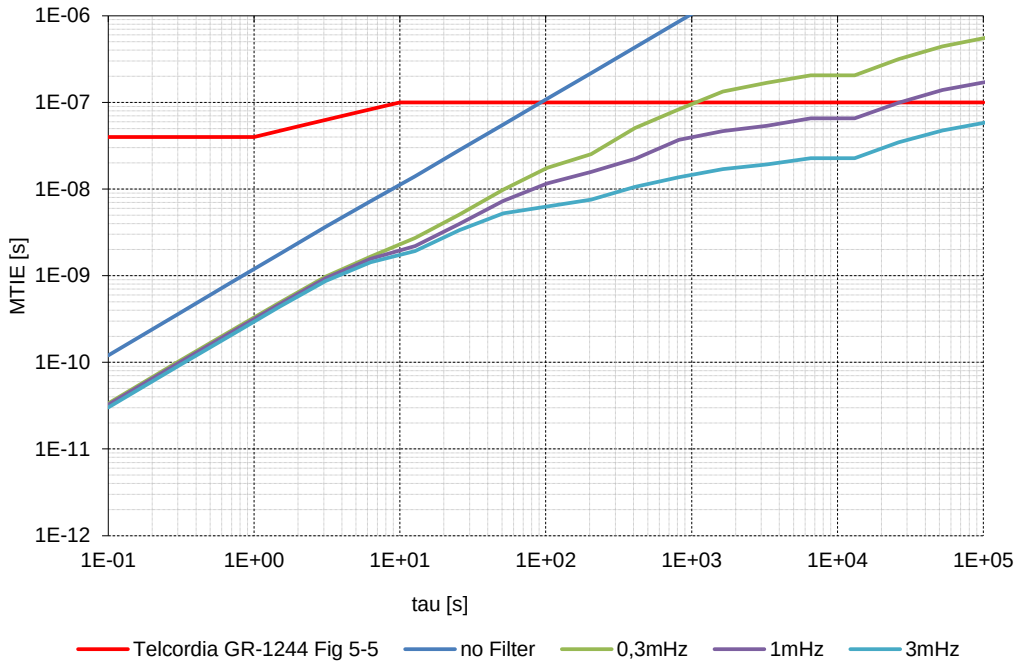
List of appendices

Typical Performance Data

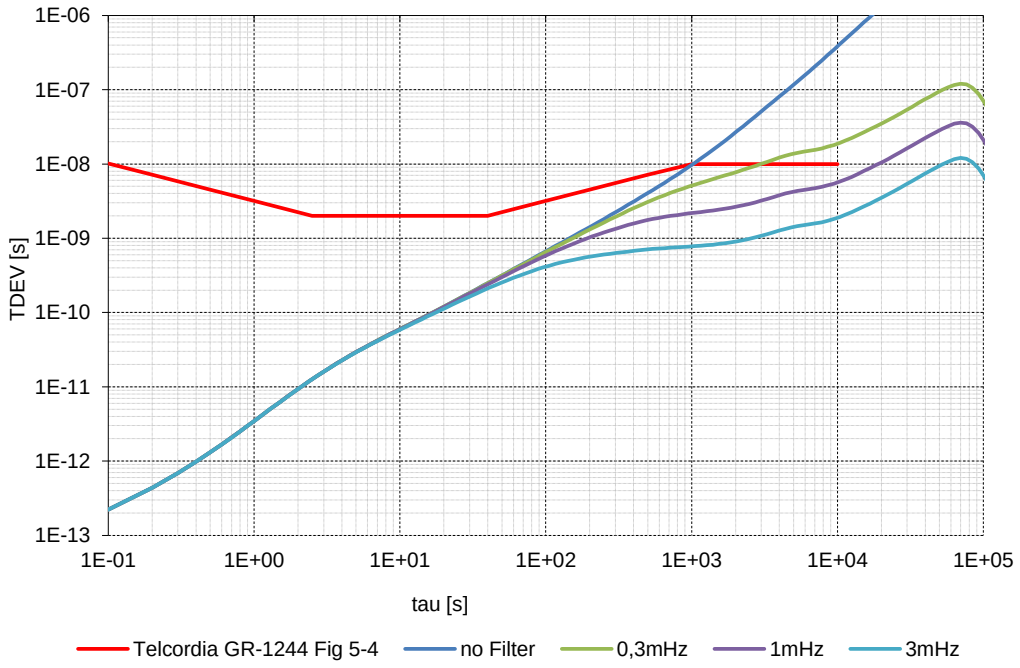
Typical MTIE

OX-221-9101-24M576



Typical TDEV

OX-221-9101-24M576



Filtered (0.3mHz, 1mHz, 3mHz) curves are simulated base on measured frequency / Phase data

Typical Phase Noise and Jitter

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