



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
		-113		dBc/Hz	@10Hz
		-140		dBc/Hz	@100Hz
		-154		dBc/Hz	@1kHz
		-157		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				

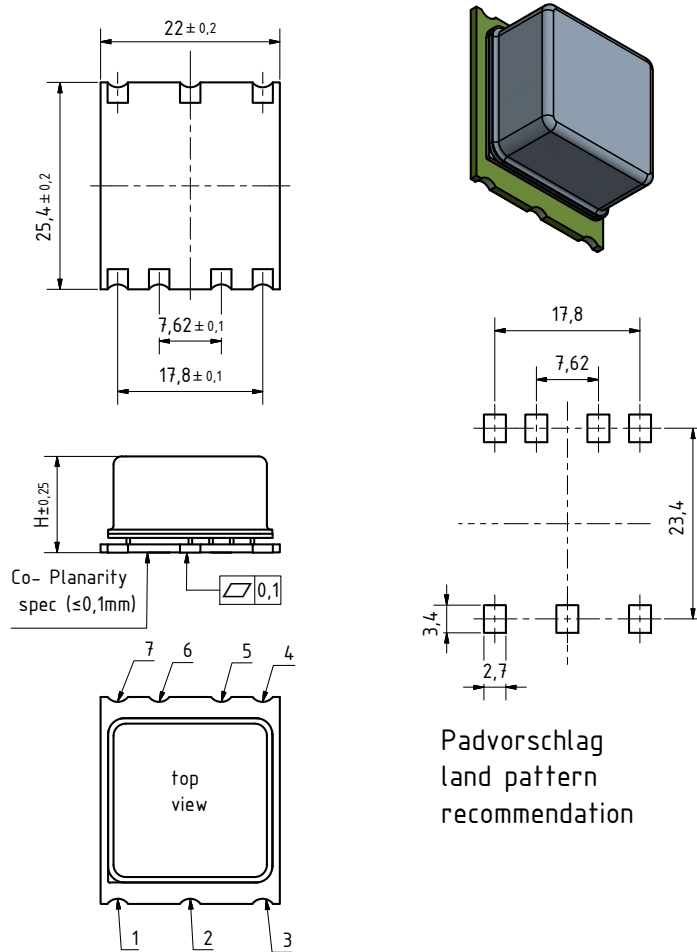
Additional Environmental Conditions	
Parameter	Description
RoHS compliance	100% RoHS 6 compliant
Washable	washable device
ESD HBM	JESD22-A114F Class 1C - 10* 2000V
Mechanical Shock	MIL-STD-202 Meth 213B Cond. C - 100g 6ms 6 shocks in each direction
Vibration, Sine	JESD22-B103 Cond.2 - 10g 10-2000Hz 4x in each 3 axis 4min sweep time
Moisture Sen. Level	JESD22-A113-B - only if > MSL 1
Solderability	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-221-9100 20,000 MHz Ser.No. AYYWW * * pin-1 marking
Package cover material	Metal
Package base material	Metal

## Solder profile

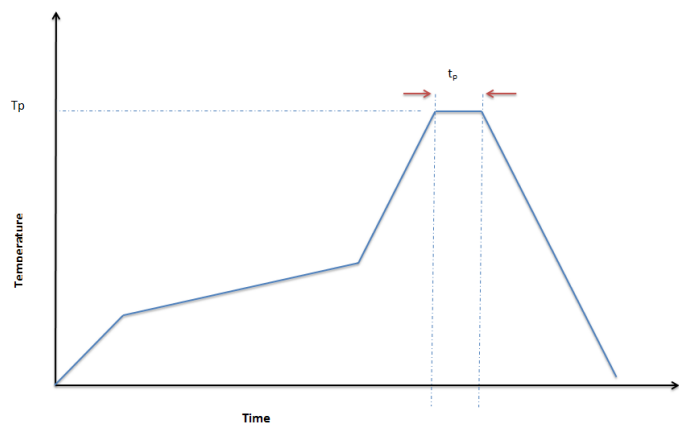
TP: max 260°C (@ solder joint, customer board level)

T<sub>p</sub>: max: 10...30 sec

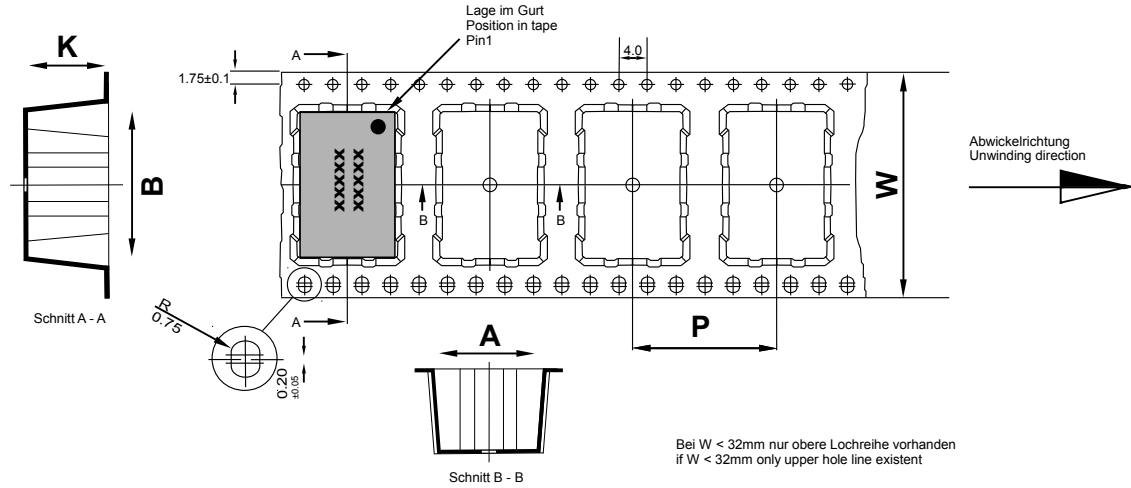
Additional Information:

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.



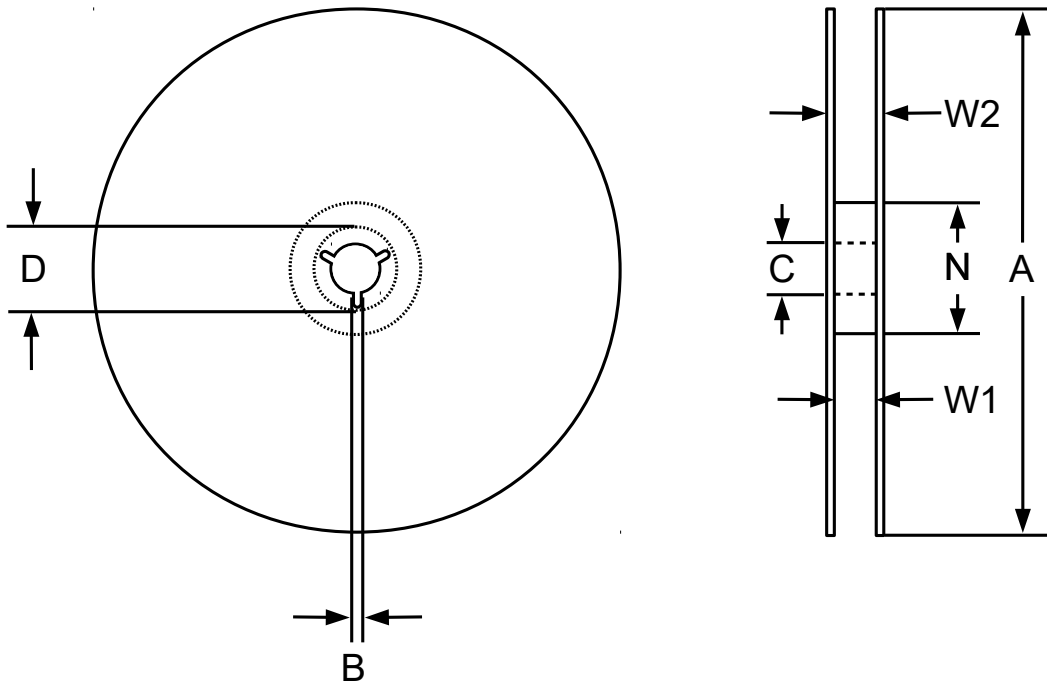
## Standard shipping method



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

### For Additional Information, Please Contact

#### **USA:**

Vectron International  
267 Lowell Road, Suite 102  
Hudson, NH 03051  
Tel: 1.888.328.7661  
Fax: 1.888.329.8328

#### **Europe:**

Vectron International  
Landstrasse, D-74924  
Neckarbischofsheim, Germany  
Tel: +49 (0) 7268.801.100  
Fax: +49 (0) 7268.801.282

#### **Asia:**

Vectron International  
68 Yin Cheng Road(C), 22nd Floor  
One LuJiaZui  
Pudong, Shanghai 200120, China  
Tel: +86 21 6194 6886  
Fax: +86 21 6194 6699

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**List of appendices**

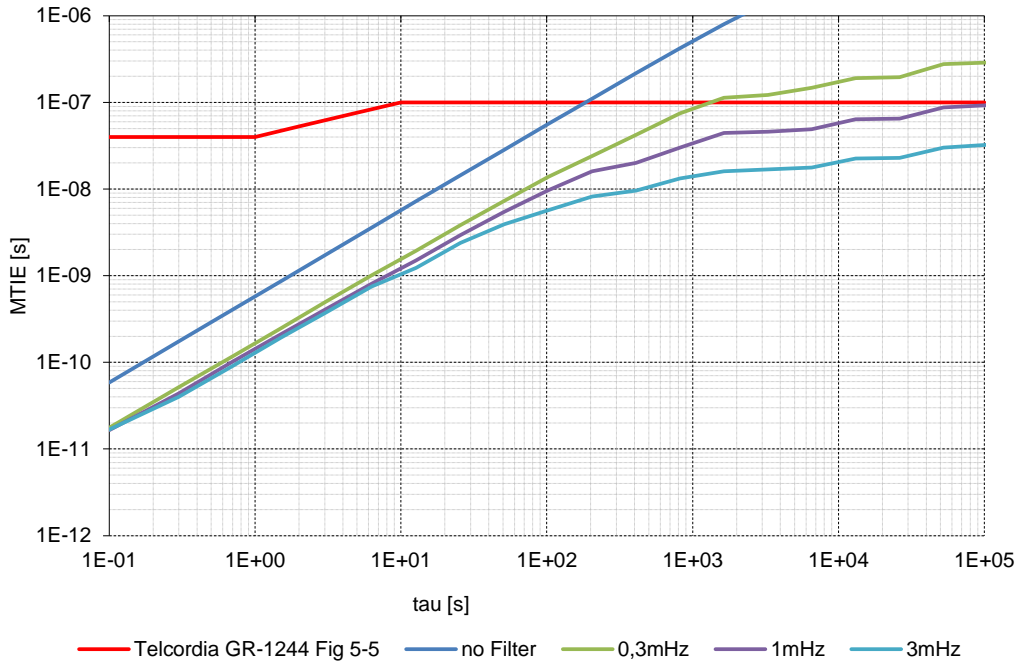
Appendix\_OX-221-9100\_20M00

II

## Typical Performance Data

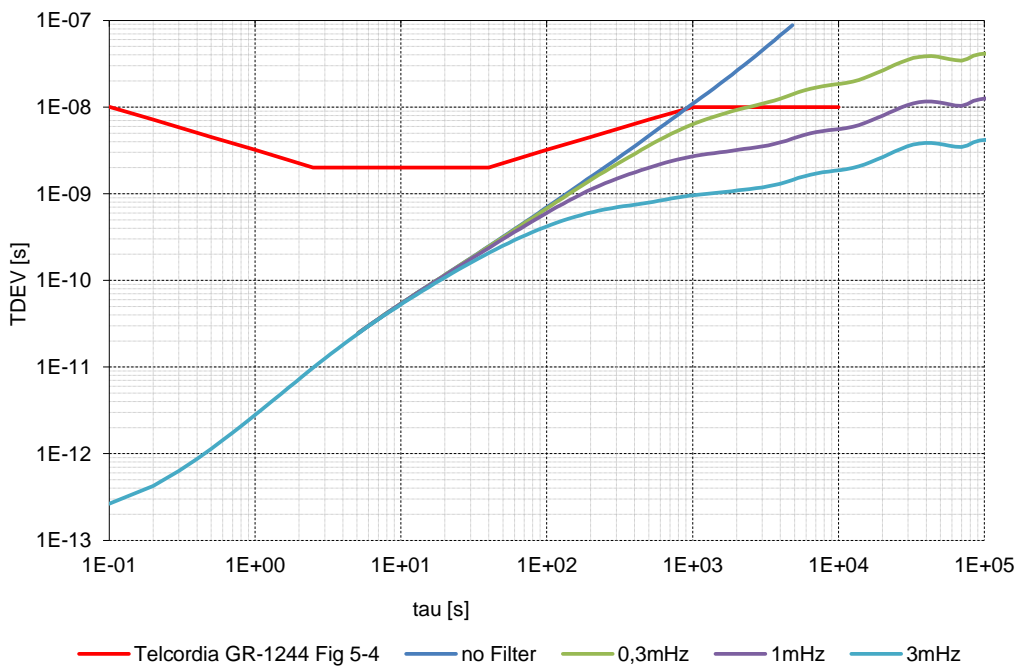
### Typical MTIE

**OX-221-9100-20M00**



### Typical TDEV

**OX-221-9100-20M00**



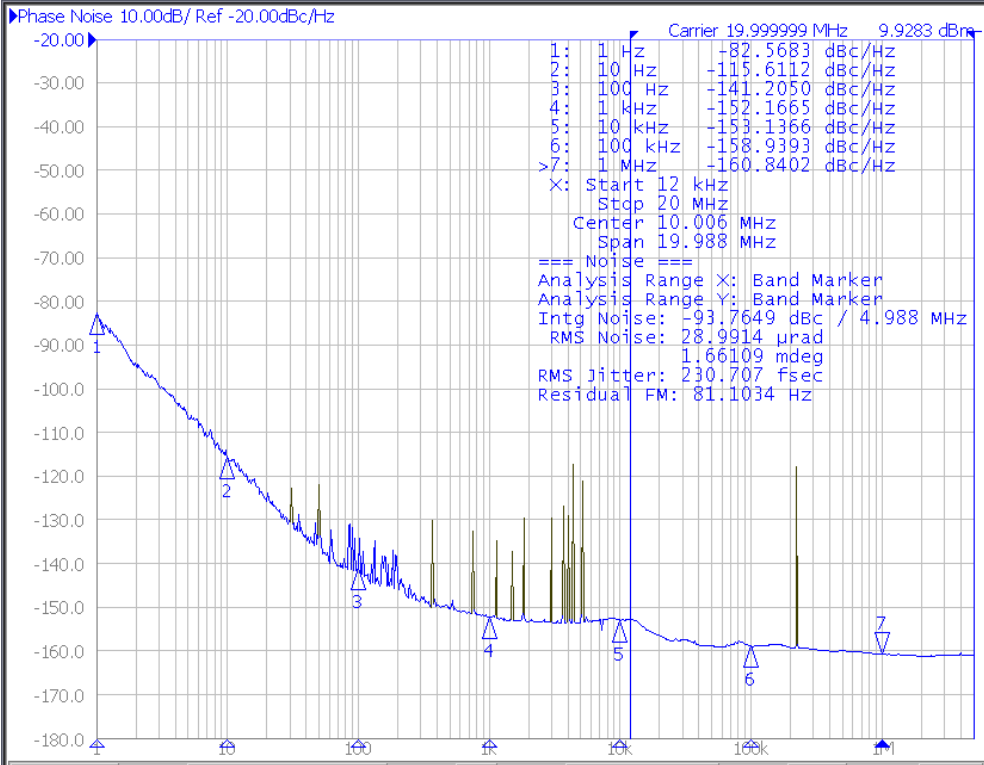
Filtered (0.3mHz, 1mHz, 3mHz) curves are simulated base on measured frequency / Phase data



# Typical Phase Noise and Jitter

OX-221-9100-20M000

Agilent E5052B Signal Source Analyzer



Resize

**Average**

Averaging  
Restart

**Avg Factor**  
8

**Averaging**  
ON

**Correlation**  
4

**Return**

IF Gain 40dB Freq Band [10M-41MHz] Spur LO Opt [<150kHz] 865pts Corre 4

Phase Noise Start 1 Hz Stop 5 MHz 8/8 -

Phase Noise: Meas Cor Ctrl 1.65V Pow 3.3V Attn 5dB ExtRef1 ExtRef2 Stop Svc 2016-11-28 14:50