

### Nominal frequency (f0)

**20 MHz**

### Frequency stabilities

Parameter	Frequency stability	Operating temp. range
Over all (df/f0)	-4.6 to 4.6 ppm	
vs. operating temp. range (df/f@25 °C)	-10 to 10 ppb	-40 ... 85 °C
Additional information Drift 24 Hr and $\pm 2.8^{\circ}\text{C}$ temp. change < $\pm 1$ ppb over all include: Temp Stab, supply, load stab, initial, 20 years aging S3E compliant according GR1244		
Parameter	Value	Condition
initial tolerance (df/f0)	-500 to 500 ppb	@ 25 °C
vs. supply voltage change (df/f)	-10 to 10 ppb	static; 3.3 V $\pm 5$ %
vs. load change (df/f)	-10 to 10 ppb	static; Load $\pm 5$ %
vs. aging / daily (df/f)	< $\pm 1$ ppb	after 30 days ; @ 25 °C
vs. aging / month (df/f)	< $\pm 25$ ppb	after 30 days ; @ 25 °C
vs. aging / year (df/f)	< $\pm 100$ ppb	after 30 days ; @ 25 °C
vs. aging / 10 years (df/f)	< $\pm 1$ ppm	after 30 days ; @ 25 °C
Holdover 24 h	$\pm 10$ ppb	incl. Drift and -40...85°C temperature stability

### RF output

Parameter	Value	Condition
Signal	LVC MOS	
Load	15 pF $\pm 10$ %	
Fan out	3	
Rise Time	< 10 ns	@ 10 to 90 %Vout
Fall Time	< 10 ns	@ 90 to 10 %Vout
Duty cycle	45 / 55 %	@ 1.65 V
V Low	x < 0.4 V	
V High	x > 2.4 V	

### Supply voltage

Parameter	Value	Condition
Supply voltage (Vs)	3.3 V $\pm 5$ %	
Current consumption steady state	< 330 mA	@ Vsnom & 25 °C
Current consumption during warm up	< 757 mA	@ Vs

### Additional Parameters

Parameter	Typ.	Max.	Condition
Phase Noise	-85	-60	dBc/Hz@1Hz
	-110	-90	dBc/Hz@10Hz
	-130	-115	dBc/Hz@100Hz
	-143	-130	dBc/Hz@1kHz
	-150	-145	dBc/Hz@10kHz
MTIE	0.5 ns		1 sec
	3 ns		10 sec
	5 ns		100 sec
	20 ns		1000 sec
	30 ns		10000 sec
Parameter	Value		Condition
Jitter	< 1.00 psec (RMS)		@ 12 kHz to 20 Hz
TDEV	0.015 ns		1 s
TDEV	0.12 ns		10 s
TDEV	0.5 ns		100 s
TDEV	2 ns		1000 s
Warm-up time	< 3 min		@ 25 °C to final frequency
Additional information TDEV: Typical Wander Generation performance when locked through a 1mHz system loop bandwidth Holdover 10ppb peak-peak: incl. of 24 h aging and a 40°C temperature change			
Processing & Packing	handling&processing note		

### Additional environmental conditions

Tensile strength of leads DIN IEC 68-2-21 (Ua 1)
Flexibility of leads DIN IEC 68-2-21 (Ub)
Sealing test A hermetisch dicht (hermetically sealed)
Solderability DIN IEC 68-2-20, (Ta) 100% RoHS 6 compliant
Solvent resistance DIN IEC 68-2-45 (xA) washable device

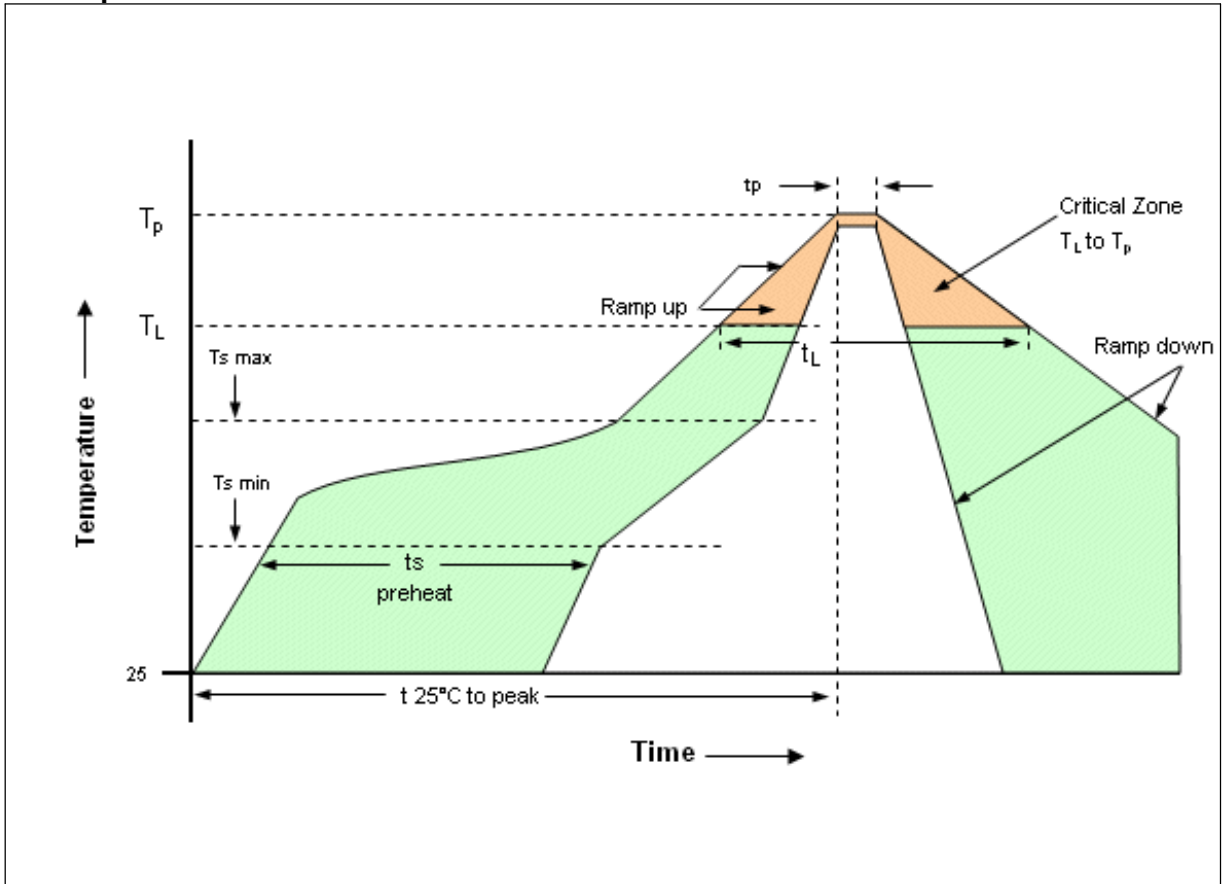
### Absolute Maximum Ratings

Parameter	Min	Typ	Max	Units	Condition
Operable temperature range	-40		85	°C	
Storage temperature range	-50		85	°C	

**Enclosure**

Type G311	Height 12.2 mm
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> </div> <div style="width: 45%; text-align: center;"> <p>G 311</p> <p>Padvorschlag PCB Layout</p> </div> </div> <p style="text-align: right;">all units in mm</p>	
<p><b>Pin Connections</b>  Pin 1: N.C.  Pin 7: GND(Case)  Pin 8: RF-Output  Pin 14: Vs (supply voltage)</p> <p><b>Marking</b>  OX-4033-EAE-1080  20,000 MHz  * VI AYYWW  * pin-1 marking</p>	

**Reflow profile**



Profile Feature	Pb-Free Assembly/Sn-Pb Assembly
Average ramp-up rate (TL to Tp)	3°C/second max.
Preheat -Temperature Min (T <sub>smin</sub> )	150°C
-Temperature Min (T <sub>smax</sub> )	200°C
-Time (min to max) (t <sub>s</sub> )	60-180 seconds
T <sub>smax</sub> to T <sub>L</sub> - Ramp-up Rate	3°C/second max.
Time maintained above - Temperature (T <sub>L</sub> )	217°C
- Time (t <sub>L</sub> )	60-150 seconds
Peak Temperature (T <sub>p</sub> )	max 260°C
Time within 5°C of actual Peak Temperature (t <sub>p</sub> )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.
Note: All temperatures refer to topside of the package, measured on the package body surface.	
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.	

**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).

Preliminary version: Subject to technical modification.

## For Additional Information, Please Contact

**USA:**

Vectron International  
267 Lowell Road  
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  
1589 Century Avenue, the 19th Floor  
Chamtime International Financial Center  
Shanghai, China  
Tel: 86.21.6081.2888  
Fax: 86.21.6163.3598

**Disclaimer**

Vectron International reserves the right to make changes to the product(s) and or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.