Nominal frequency (f0) 20 MHz

Frequency stabilities

Parameter	Frequency stability	Operating temp. range
Over all (df/f0) vs. operating temp. range (df/f@25 ℃)	-4.6 to 4.6 ppm -10 to 10 ppb	 -40 ... 85 ℃
Additional information Drift 24 Hr and ±2.8℃ temp. change < ±0.8ppb over all include: Temp Stab, supply, load stab, inital, 20 years aging S3E compliant according GR1244		
Parameter	Value	Condition
initial tolerance (df/f0) vs. supply voltage change (df/f) vs. load change (df/f) vs. aging / daily (df/f) vs. aging / month (df/f) vs. aging / year (df/f) vs. aging / 10 years (df/f) Holdover 24 h	-500 to 500 ppb -10 to 10 ppb -5 to 5 ppb <± 1 ppb <± 25 ppb <± 100 ppb <± 1 ppm ± 10 ppb	@25 ℃ static; 3.3 V ±5 % static; Load ± 5 % after 30 days ; @ 25 °C after 30 days ; @ 25 °C after 30 days ; @ 25 °C after 30 days ; @ 25 °C incl. Drift and -40..85℃ temperature stability

RF output

Parameter	Value	Condition
Signal	LVCMOS	
Load	15 pF ±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 ± 5 %	
Current consumption steady state	< 400 mA	@ Vsnom & 25 ℃
Current consumption during warm up	< 950 mA	@ Vs

Additional Parameters

Parameter	Typ.	Max.	Condition
Phase Noise	-85 -110 -130 -143 -150	-60 -90 -115 -130 -145	dBc/Hz@1Hz dBc/Hz@10Hz dBc/Hz@100Hz dBc/Hz@1kHz dBc/Hz@10kHz
MTIE	0.2 ns 2.0 ns 7.0 ns 20.0 ns 40.0 ns		1 sec 10 sec 100 sec 1000 sec 10000 sec
Parameter	Value		Condition
Jitter	< 1.000 psec (RMS)		@ 12 kHz to 20 MHz
TDEV	0.01 ns		1 s
TDEV	0.1 ns		10 s
TDEV	1 ns		100 s
TDEV	3 ns		1000 s
Warm-up time	< 5 min		@ 25 ℃ 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℃ temperature change			
Processing & Packing	handling&processing note		

Additional environmental conditions

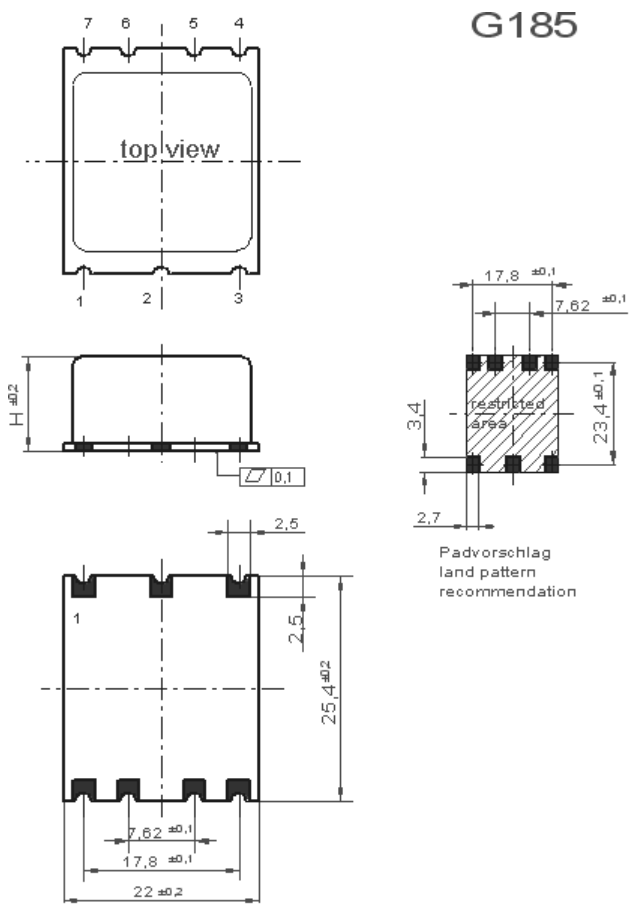
Sealing test A staubdicht (dust-dense)
Solderability DIN IEC 68-2-20 Test Ta 100% RoHS 6 compliant
Solvent resistance EN 60068-2-45, Test xA non-washable device

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Units	Condition
Operable temperature range	-40		85	℃	
Storage temperature range	-50		90	℃	

Enclosure

Type G185C	Height 12.1 mm

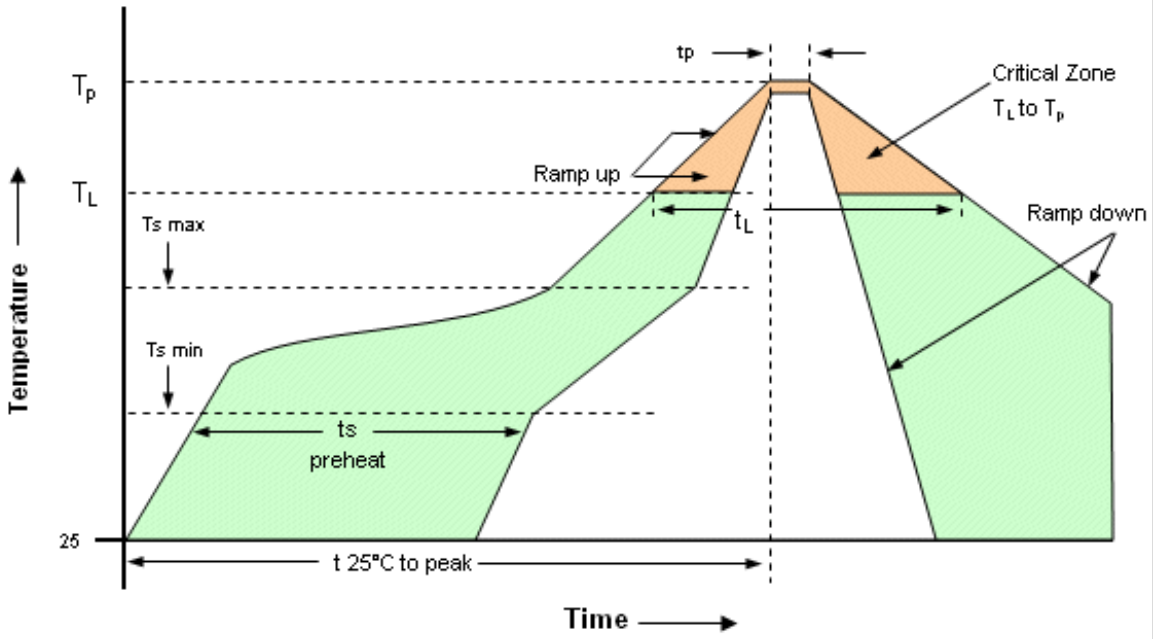


all units in mm

Pin Connections
Pin 1: I.C. (=> do not connect)
Pin 2: N.C.
Pin 3: Vs (supply voltage)
Pin 4: RF-Output
Pin 5-6: N.C.
Pin 7: GND (Case)

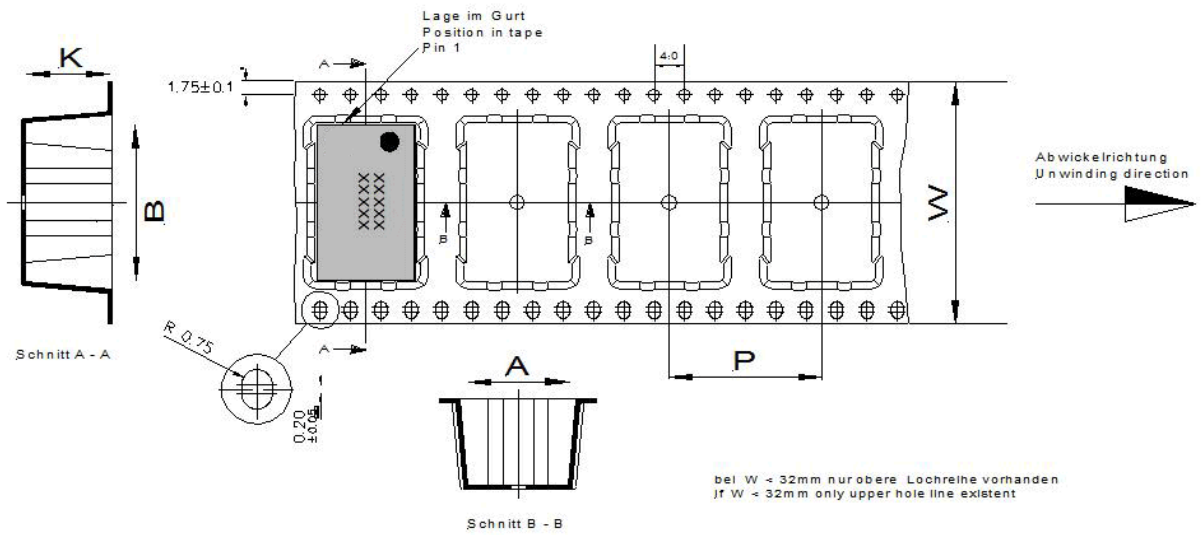
Marking
OX-2221-EAE-1080
20,000 MHz
Ser.No. AYYWW *
* pin-1 marking

Reflow profile



Profile Feature	Pb-Free Assembly/Sn-Pb Assembly
Average ramp-up rate (TL to Tp)	3℃/second max.
Preheat -Temperature Min (Tsmin) -Temperature Min (Tsmax) -Time (min to max) (ts)	150℃ 200℃ 60-180 seconds
Tsmax to TL - Ramp-up Rate	3℃/second max.
Time maintainted above - Temperature (TL) - Time (tL)	217℃ 60-150 seconds
Peak Temperature (Tp)	max 260℃
Time within 5℃ of actual Peak Temperature (tp)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ 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.	

Standard shipping method



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

All dimensions in millimetres unless otherwise stated.

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

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℃) .
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.