VX-501-0275-491M52

Preliminary version: Subject to technical modification.

VCXO

Nominal frequency (f0) **491.52 MHz**

Performance Specifications

Frequency stabilities					
Parameter	Min	Typical	Max	Units	Condition
Over all (df/f0)	-60		+60	ppm	-40...85°C
Additional information	overall incl.: initial, temp.-40...+85°C, supply, load var. and aging 15 years				

Frequency Tuning					
Parameter	Min	Typical	Max	Units	Condition
Absolute pulling range (APR) (df/f0)	0.05			ppm	ext. tuning voltage@0.3 to 3V
Linearity			10	%	
slope	30		90	ppm/V	
slope (pos./neg.)	positiv				
Frequency control input impedance	10000			kOhm	
Modulation bandwidth	1000			Hz	@ -3 dB
Additional information	APR >±50ppb @ 0...3.3V Tuning volt. range stable oscillation: 0V to 3.5V				

RF output					
Parameter	Min	Typical	Max	Units	Condition
Signal	LVPECL				
Load	45	50	55	Ohm	
Rise Time			0.5	ns	@20 to 80 %Vout
Fall Time			0.5	ns	@80 to 20 %Vout
Duty cycle	40		60	%	@50 %
V Low	1.36		1.68	V	

RF output					
Parameter	Min	Typical	Max	Units	Condition
V High	2.16		2.42	V	
Sub Harmonics			-40	dBc	
Enable	Enable Function Pin2		Output Pin4		Output Pin5
	high		data		compl. data
	open		data		compl. data
	low		no data		no data

Supply voltage					
Parameter	Min	Typical	Max	Units	Condition
Supply voltage (Vs)	2.97	3.3	3.63	V	
Current consumption steady state			95	mA	@ Vsnom & 25 °C

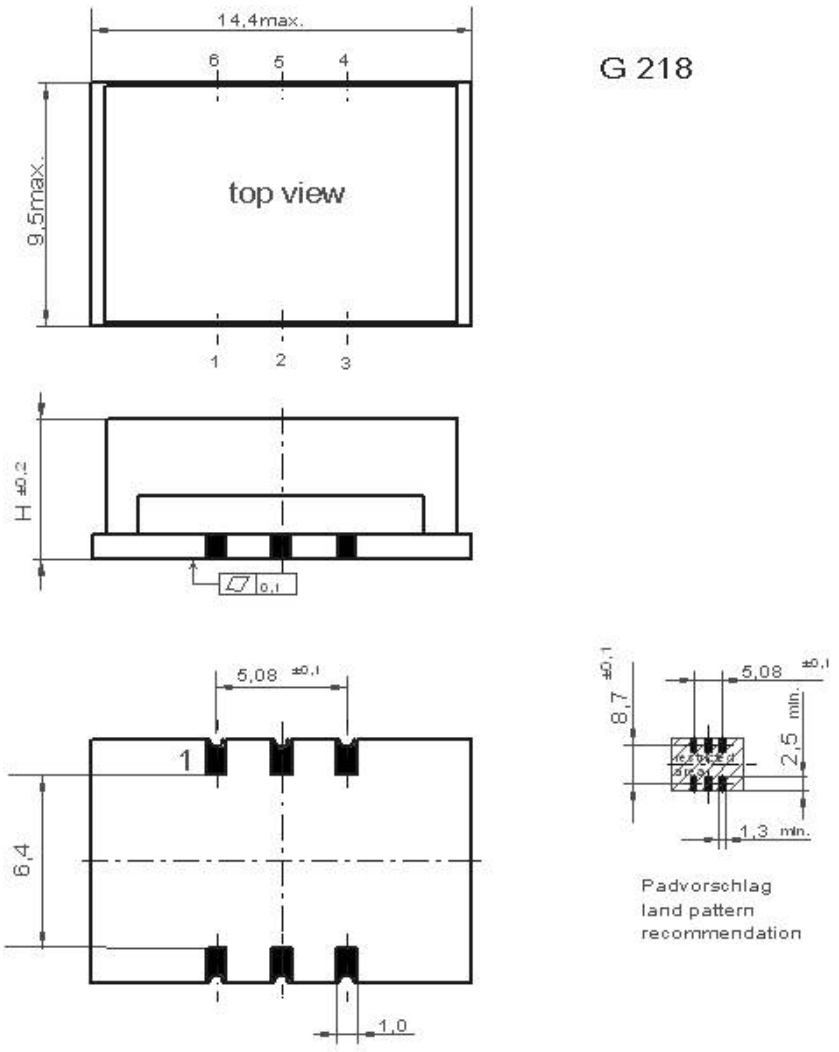
Additional Parameters					
Parameter	Min	Typical	Max	Units	Condition
Phase Noise		-62		dBc/Hz	@10Hz
		-93		dBc/Hz	@100Hz
		-120		dBc/Hz	@1kHz
		-142		dBc/Hz	@10kHz
		-151		dBc/Hz	@100kHz
		-154		dBc/Hz	@1MHz
Additional information	Failure rate lambda < 400 FIT				
Processing & Packing	handling&processing note				

Additional Environmental Conditions	
Parameter	Description
RoHS compliance	100% RoHS 6 compliant
Washable	non-washable device
Altitude (Low Pressure)	MIL-STD-810G Meth.500.5,Procedure II - 4h,60000ft at -40°C operating
ESD HBM	JESD22-A114F Class 1B - 10x1000V
Phase Noise under Vibration	acc. Spec - @100Hz;1KHz;10kHz
Free fall	IEC60068-2-31 Method Ec - acc.Spec
Mechanical Shock	MIL-STD-202 Meth 213B Cond. E - 1000g 0,5ms 6 shocks in each direction
Vibration, Sine	MIL-STD-883 Meth 2007 Cond A - 20g 20-2000Hz 4x in each 3 axis 4min sweep time
Vibration, Sine (operating)	MIL-STD-202G Meth 201A - 10Hz-55Hz-10Hz 4x in 1 minute 2hrs@0,06inch(peak-peak)/axis in 3 orthogonal/continuous
Vibration, Sine(endurance level),	MIL-STD-202G Meth 201A - 10Hz-55Hz-10Hz in 1 minute 2hrs@0,06inch/axis(0,06inch oscillator displacement)
Abnormal use	IEC600068-2-2 - +260°C 24h
Dishwasher test	acc. Spec - 100 Zyklen 70...75°C
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%
Low temperature storage cum operation	MIL-STD-810D Meth.502.2 - Storage: -55°C 4h; Operetional:-40°C 1h
High temp operating life(HTOL)	MIL-STD-202 Meth108A Cond C - 1000h @ 105°C power on
High temperature storage cum operation	MIL-STD-810D Meth.501.2 - 7 cycles / 35°C to 85°C

Additional Environmental Conditions	
Parameter	Description
Humidity Bias (non operating)	MIL-STD-202G Meth 103B Cond.A - 40°C/95% RH 240h/drying period:1 to 2 hrs at room conditions
Low temp operating life(LTOL)	IEC 60068-2-1 Cond. Ae - 1000h @ -40°C power on
Reflow Simulation Test	J-STD-020D - Total 3x Lead free profile (for SMD)
Steady-state High temperature (operating)	acc.Spec - +85°C 168h
Steady-state Low temperature (operating)	acc.Spec - -40°C 96h/ON-OFF cycles;30 min ON&test-15min OFF/128 cycles ON-OFF
Temperature Cycling	JESD22-A104-D Cond.G - 1000cycles -40/+125°C; cycle time 30 min.

Absolute Maximum Ratings					
Parameter	Min	Typical	Max	Units	Condition
Operable temperature range	-40		+85	°C	
Storage temperature range	-55		+90	°C	

Enclosure



G 218

Padvorschlag
land pattern
recommendation

all units in mm

Enclosure Info	
Parameter	Description
Type	G218C
Height	2.8 mm
Pin Connections	1: Vc (control voltage) 2: Enable/Disable 3: GND(Case) 4: RF-Output 5: RF-Output compl. 6: Vs (supply voltage)
Marking	VX-501-0275 491M520 * YI AYYWW * pin-1 marking
Package cover material	Metal
Package base material	FR4

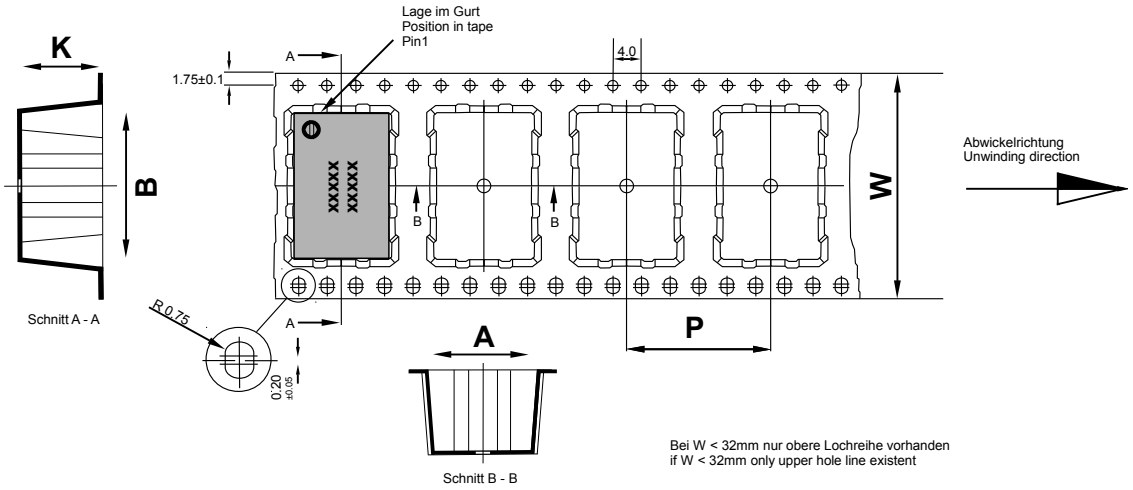
Solder profile

Recommended reflow solder profile according IPC/JEDEC J-STD-020 (latest revision)

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

Reel Info						
Tape width W [mm]	Quantity per meter	Quantity per reel	P [mm]	A [mm]	B [mm]	K [mm]
24	83.3	1700	12	9.8	15	3.2

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).
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