

Nominal frequency (f0)

20 MHz

Frequency stabilities

Parameter	Frequency stability	Operating temp. range
vs. operating temp. range (df/f@25 °C)	-25 to 25 ppb	-40 ... 85 °C
Parameter	Value	Condition
initial tolerance (df/f0)	-200 to 200 ppb	@25 °C
vs. supply voltage change (df/f)	-5 to 5 ppb	static; 3.3 V ±5 %
vs. load change (df/f)	-5 to 5 ppb	static; Load ± 5 %
vs. aging / daily (df/f)	<± 1 ppb	after 30 days ; @ 25 °C
vs. aging / month (df/f)	<± 30 ppb	after 30 days ; @ 25 °C
vs. aging / year (df/f)	<± 100 ppb	after 30 days ; @ 25 °C
vs. aging / 10 years (df/f)	<± 1 ppm	after 30 days ; @ 25 °C
Drift 24h over -40..85°C: <50 ppb peak-peak		

RF output

Parameter	Value	Condition
Signal	LVC MOS	
Load	15 pF ±10 %	
Rise Time	< 10 ns	@ 10 to 90 %Vout
Fall Time	< 10 ns	@ 90 to 10 %Vout
Duty cycle	40 / 60 %	@ 1.65 V
V Low	x < 0.4 V	
V High	x > 2.4 V	
Harmonics	<- 30 dBc	

Supply voltage

Parameter	Value	Condition
Supply voltage (Vs)	3.3 V ± 5 %	
Current consumption steady state	< 400 mA	@ Vsnom & 25 °C
Current consumption during warm up	< 900 mA	@ Vs

Additional Parameters

Parameter	Typ.	Max.	Condition
Phase Noise	-85	-75	dBc/Hz@1Hz
	-110	-100	
	-130	-125	
	-143	-135	
	-150	-145	
			dBc/Hz@10Hz
			dBc/Hz@100Hz
			dBc/Hz@1kHz
			dBc/Hz@10kHz
Parameter	Value		Condition
Warm-up time	< 3 min		@ 25 °C to final frequency
Processing & Packing	handling&processing note		

Additional environmental conditions

Rapid temperature changes MIL-883-1010 Cond B 1000 cycles -55/125°C
Vibration MIL-STD-883 Meth 2007 Cond A 20G 20-2000Hz 4x in each 3axis 4 min
Shock MIL-STD-202 Meth 213 Cond.C 100G 6ms 6 shocks in each direction
Solderability J STD_002B Cond A leaded/ Cond. B SMD 245°C (diving Ti me 5 ±0,5sec.) DipLook with 8h damp pre-treatment: solder wetting >95%
Solvent resistance MIL-STD-883 Meth 2015 Solv. 1,3,4
ESD HBM JESD22-A114-A Class 2 10* 2000V
Moisture Sensit. Level 1 JESD22-A113-B
RoHS compliance 100% ROHS compliant

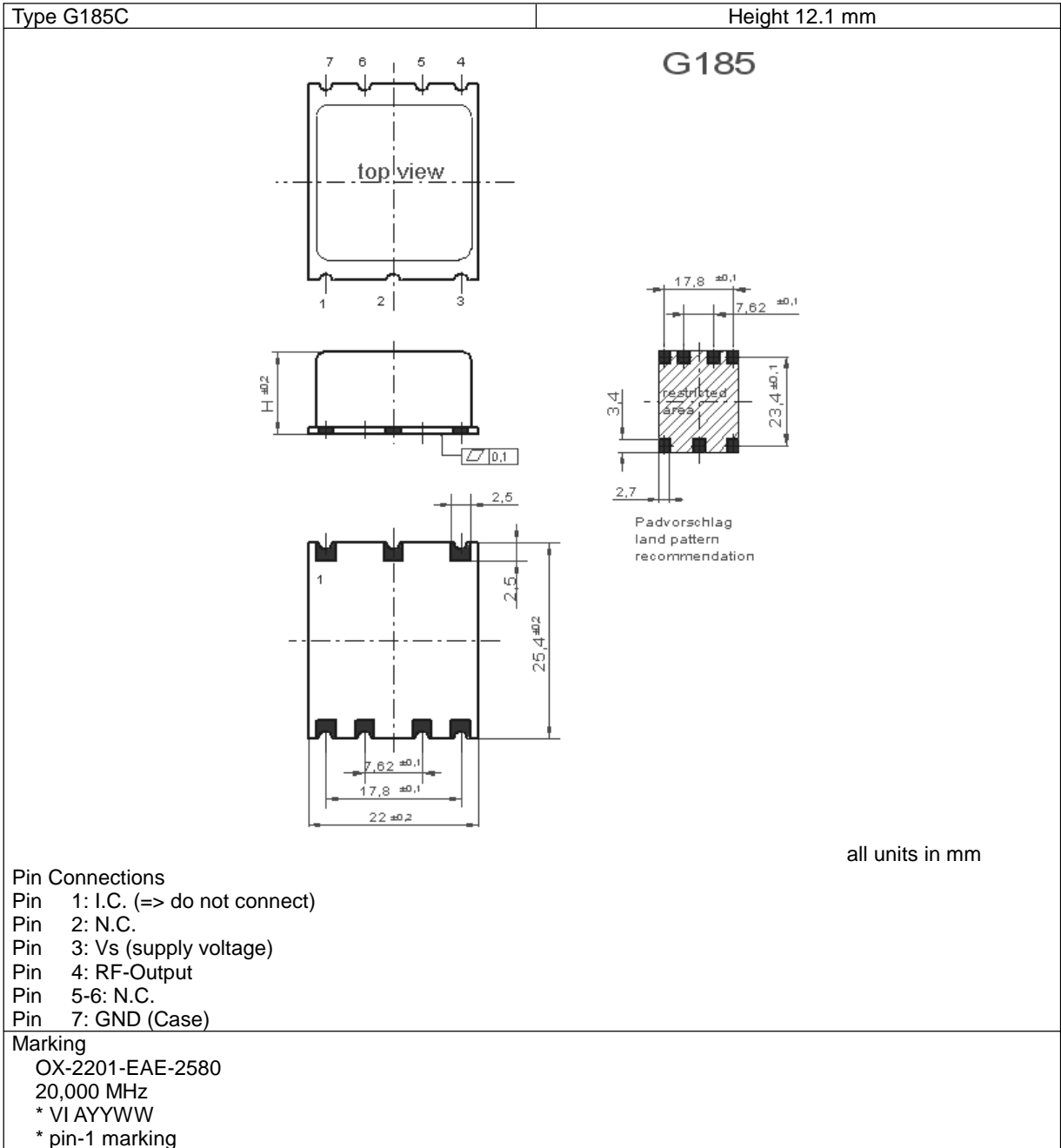
Additional environmental conditions

Washable non-washable device

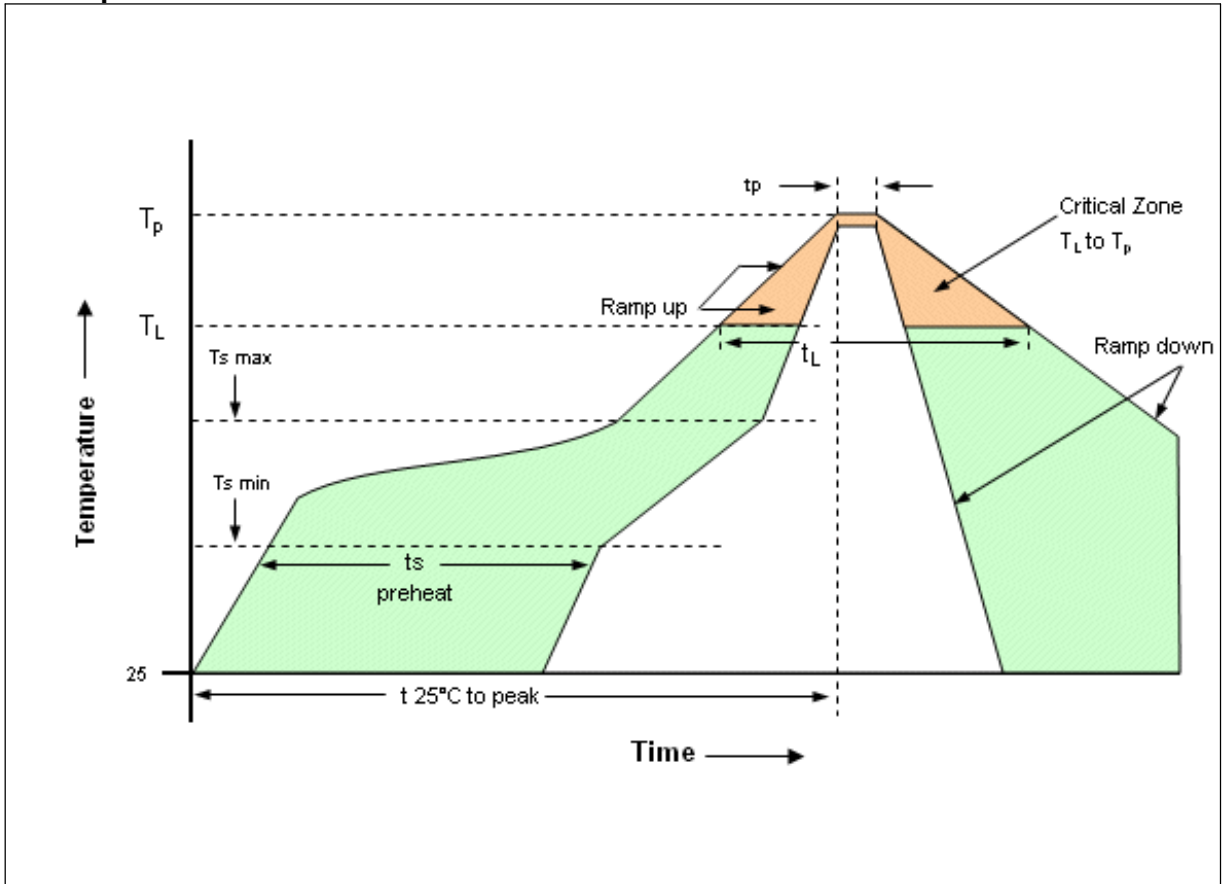
Absolute Maximum Ratings

Parameter	Min	Typ	Max	Units	Condition
Supply voltage (Vs)			6	V	
Operable temperature range	-40		85	°C	
Storage temperature range	-40		85	°C	

Enclosure

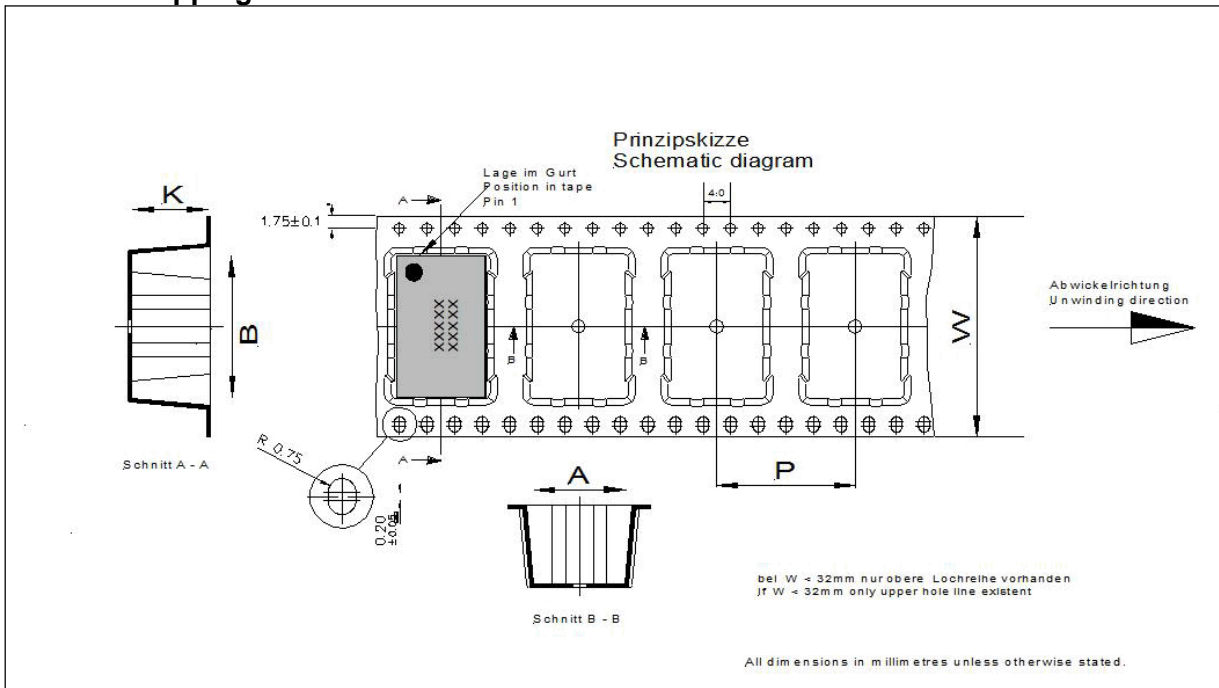


Reflow profile



Profile Feature	Pb-Free Assembly/Sn-Pb Assembly
Average ramp-up rate (T_L to T_p)	3°C/second max.
Preheat -Temperature Min (T_{smin})	150°C
-Temperature Min (T_{smax})	200°C
-Time (min to max) (t_s)	60-180 seconds
T_{smax} to T_L - Ramp-up Rate	3°C/second max.
Time maintained above - Temperature (T_L)	217°C
- Time (t_L)	60-150 seconds
Peak Temperature (T_p)	max 260°C
Time within 5°C of actual Peak Temperature (t_p)	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.	

Standard shipping method



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°C).

Preliminary version: Subject to technical modification.

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