

**Nominal frequency (f0)**

**20 MHz**

**Frequency stabilities**

Parameter	Frequency stability	Operating temp. range
Over all (df/f0)	-4.6 to 4.6 ppm	-20 ... 85 °C
vs. operating temp. range (df/f@25 °C)	-0.28 to 0.28 ppm	
Parameter	Value	Condition
initial tolerance (df/f0)	-1 to 1 ppm	@25 °C
vs. supply voltage change (df/f)	-0.2 to 0.2 ppm	static; 3.3 V ±5 %
vs. load change (df/f)	-0.1 to 0.1 ppm	static; Load ± 10 %
aging first year	<± 0.8 ppm	@ 40 °C
vs. aging / 20 years (df/f)	<± 2.5 ppm	
Holdover 24 h	± 0.37 ppm	
Stratum 3 per GR-1244-CORE:<+/-4.6ppm for all causes @ 20 years aging		

**RF output**

Parameter	Value	Condition
Signal	LVC MOS	@ 10 to 90 %Vout @ 90 to 10 %Vout @ 1.65 V
Load	15 pF ±10 %	
Fan out	3	
Rise Time	< 9 ns	
Fall Time	< 9 ns	
Duty cycle	45 / 55 %	
V Low	x < 0.33 V	
V High	x > 2.97 V	
Sub Harmonics	<- 80 dBc	
Spurious	<- 80 dBc	

**Supply voltage**

Parameter	Value	Condition
Supply voltage (Vs)	3.3 V ± 5 %	@ Vsnom & 25 °C
Current consumption steady state	< 24 mA	

**Additional Parameters**

Parameter	Value	Condition	
Phase Noise	< -85 dBc/Hz	10 Hz	max values
	< -110 dBc/Hz	100 Hz	
	< -125 dBc/Hz	1000 Hz	
	< -135 dBc/Hz	10 kHz	
	< -135 dBc/Hz	100 kHz	
Short term stability	<± 1000.0 E-12	1 sec	
Start-up time	< 10 ms		
Processing & Packing	handling&processing note		

**Additional environmental conditions**

Tensile strength of leads DIN IEC 68 T2-21 (Ua 1)
Flexibility of leads DIN IEC 68 T2-21 (Ub)
Sealing test A nicht dicht (not hermetically sealed)
Solderability DIN IEC 68 T2-20 (Ta) 100% RoHS compliant
Solvent resistance EN 60068-2-45, Test xA washable device

**Absolute Maximum Ratings**

Parameter	Min	Typ	Max	Units	Condition
Operable temperature range	-20		85	°C	
Storage temperature range	-55		105	°C	

**Enclosure**

<p>Type G211A</p>	<p>Height 2.3 mm</p>
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all units in mm

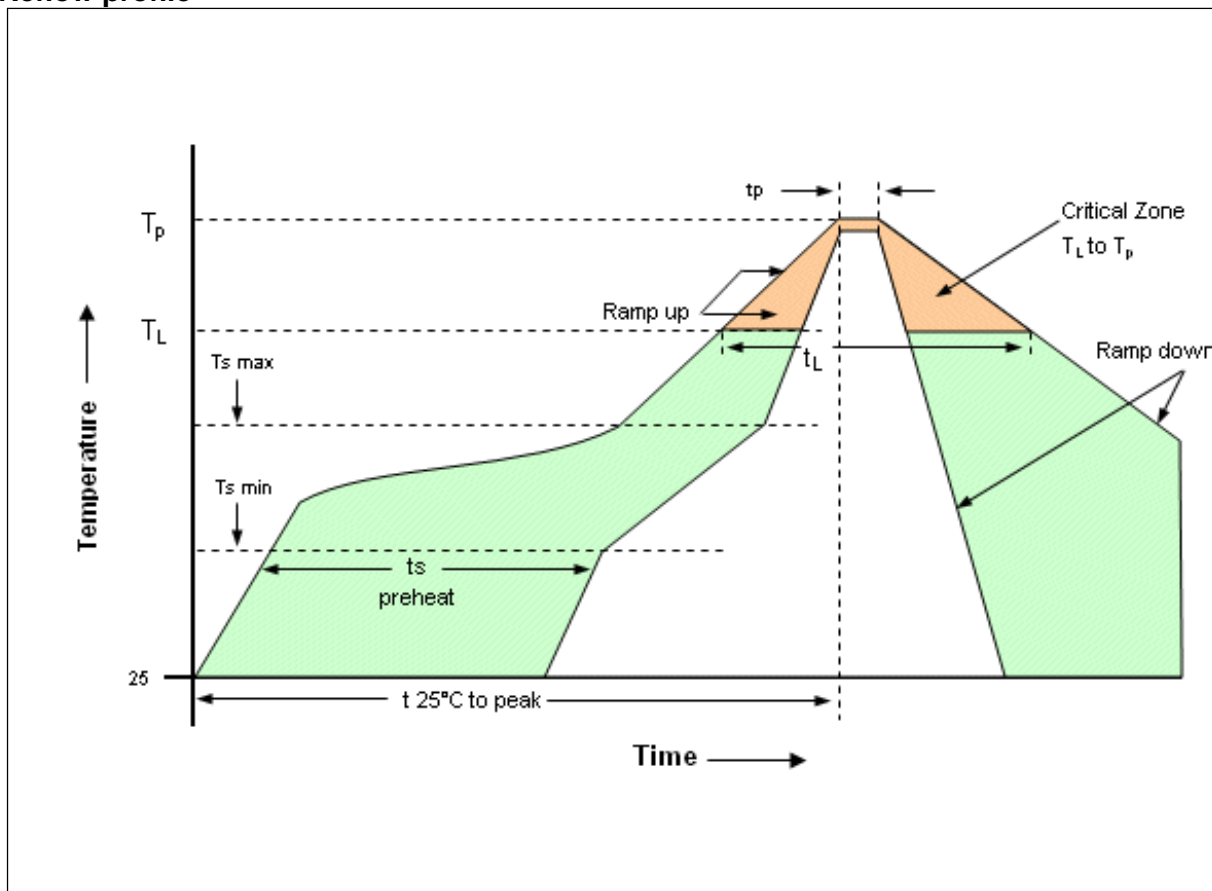
**Pin Connections**

- Pin 1: N.C.
- Pin 2: GND(Case)
- Pin 3: RF-Output
- Pin 4: Vs (supply voltage)

**Marking**

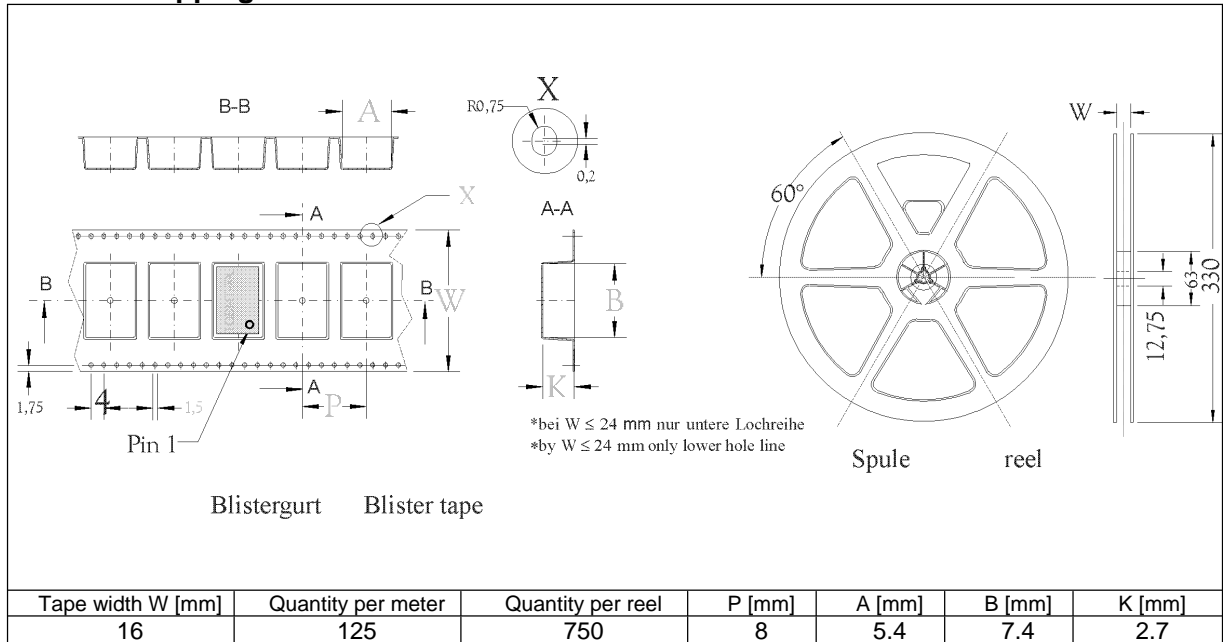
- 2A-009
- 20M000
- \*VAYYWW
- \* pin-1 marking

**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 TL - Ramp-up Rate	3°C/second max.
Time maintained above - Temperature (TL)	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.	

**Standard shipping method**



**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.