

## Typical Applications

Base Stations  
 Test + Measurement

## Features

Surface Mount Package  
 Reflow Process Compatible  
 Low Phase Noise  
 Build in PLL-Circuit



## Output Frequency range

10 MHz – 160 MHz

## Standard frequencies

10; 25; 26; 39.3216; 52; 56; 61.44; 77.76; 104 MHz  
 122.88; 153.6; 155.52; 160 MHz

## Reference Frequency

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code <sup>5</sup>
Input frequency	2		100	MHz	± 2 ppm	
Parameter	Min	Typ	Max.	Units	Condition	
Signal		HCMOS				IFH
Reference Level	0.5		4	V <sub>pp</sub>	HCMOS / similar sinewave	
Reference Input Impedance	2			kΩ		

## Output Frequency

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code <sup>5</sup>
output frequency	10		160	MHz		
Signal	HCMOS					RFH
Load		15.0		pF	@ 15 pF 10 to 90 % @ Vs/2	
Rise and Fall time			5	ns		
Duty cycle	40		60	%		

## Supply voltage (Vs)

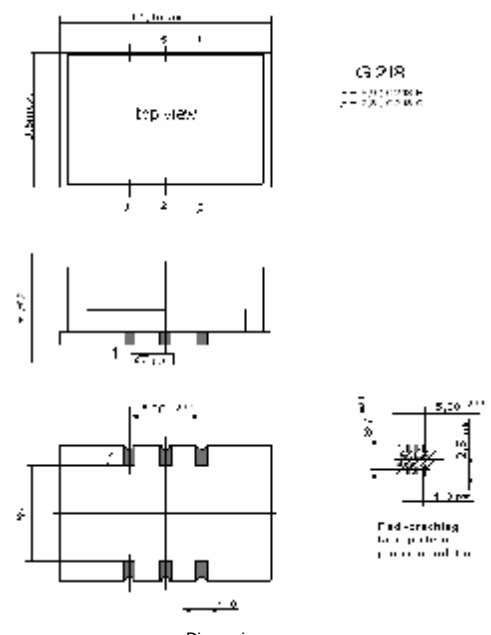
Parameter	Min	Typ	Max.	Units	Condition	Ordering Code <sup>5</sup>
Supply voltage [Standard]	3.135	3.3	3.465	VDC		SV033
Current consumption			50	mA	steady state @ +25°C & 3.3VDC	

## Additional parameters

Parameter	Min	Typ	Max.	Units	Condition	
Phase Noise <sup>3</sup>		-90		dBc/Hz	10 Hz	@ 122,88 MHz
		-110		dBc/Hz	100 Hz	HCMOS
		-131		dBc/Hz	1 kHz	
		-148		dBc/Hz	10 kHz	
		-156		dBc/Hz	100 kHz	
Jitter		-157		dBc/Hz	1 MHz	
		0.77		ps RMS	@ 10Hz .. 150kHz	

## Additional parameters

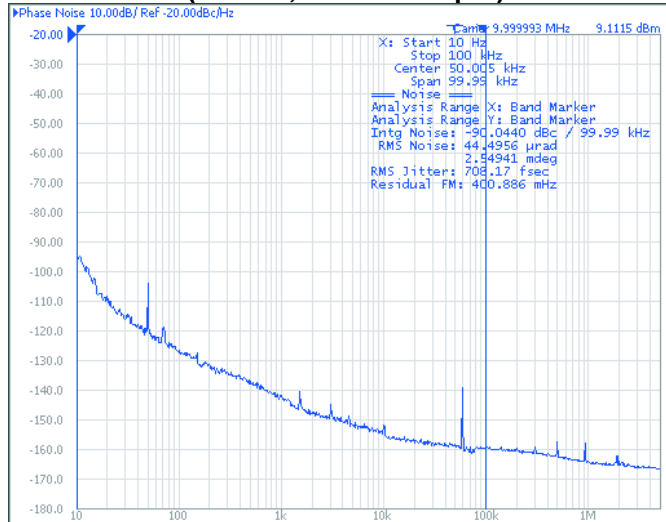
Parameter	Min	Typ	Max.	Units	Condition
Weight			9	g	
Processing & Packing	Handling & processing note				
Operating temperature range	-20		+70	°C	
Operable temperature range	-30		+85	°C	
Storage temperature range	-55		+125	°C	

Type G218B		
Input : Single ended (HCMOS or Sinewave)		
Output : Single ended HCMOS		
Code A1	Height "H" 5.9	Pin Length "L" NA
 <p>Dimensions : mm</p>		
Pin Connections	Description	
1 Ref. Frequency in	High stable input frequency for synchronisation	
2 VCXO Control	<b>Test output</b> of the control voltage for the VCXO	
3 GND	Only for modul test or observance Ground connection. Keep traces physically short and connect immediately to ground plane for best performance	
4 RF-OUT	RF synchronised output.	
5 Lock Detector Output	<b>Test output</b> signal for PLL lock detected. High signal $\Rightarrow$ PLL in lock Low signal $\Rightarrow$ PLL out of lock	
6 Vs	Only for modul test or observance Power supply pin	
Marking		
C3310A1-xxxx Frequency * VI AYYWW		

## Absolute Maximum Ratings

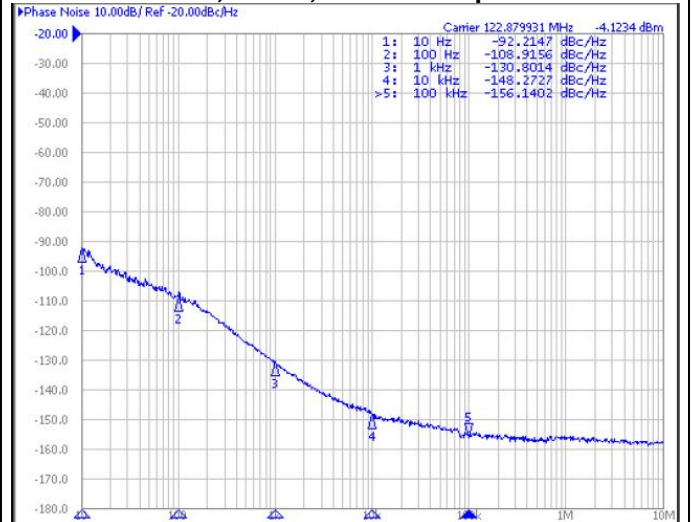
Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			6.0	V	
Maximum output load @ CMOS			40	pF	

## Typical Phase Noise and Jitter (10 MHz; HCMOS output)



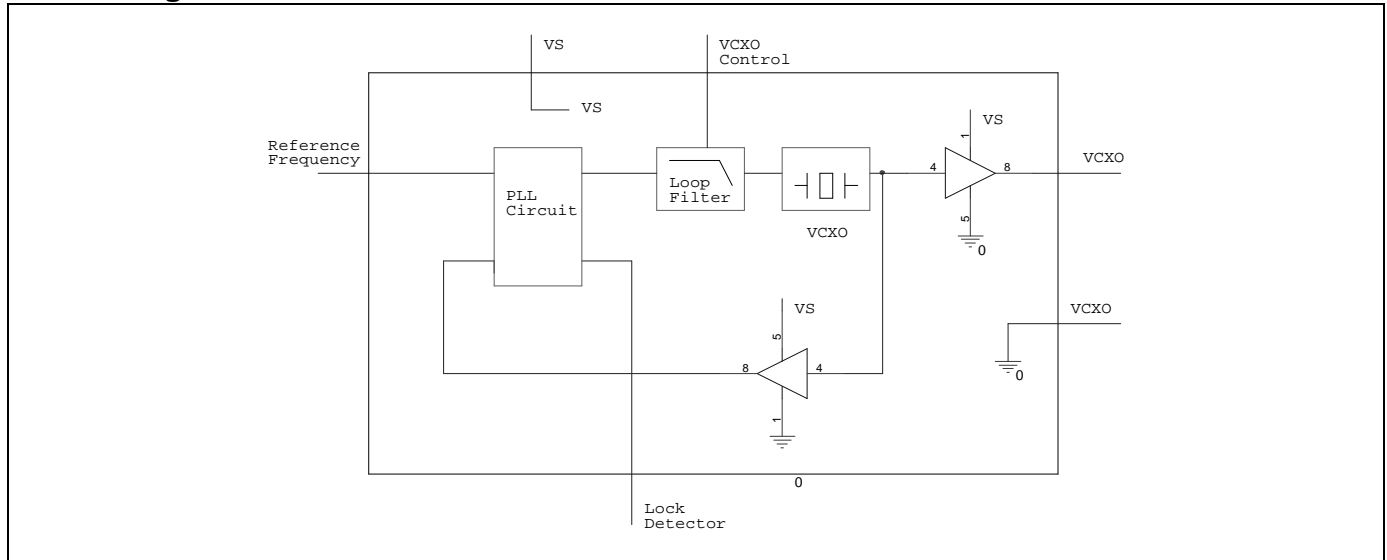
Frequency range [Hz]	Jitter [ps rms]
10Hz to 100kHz	0.708ps

## 122.88MHz; HCMOS output

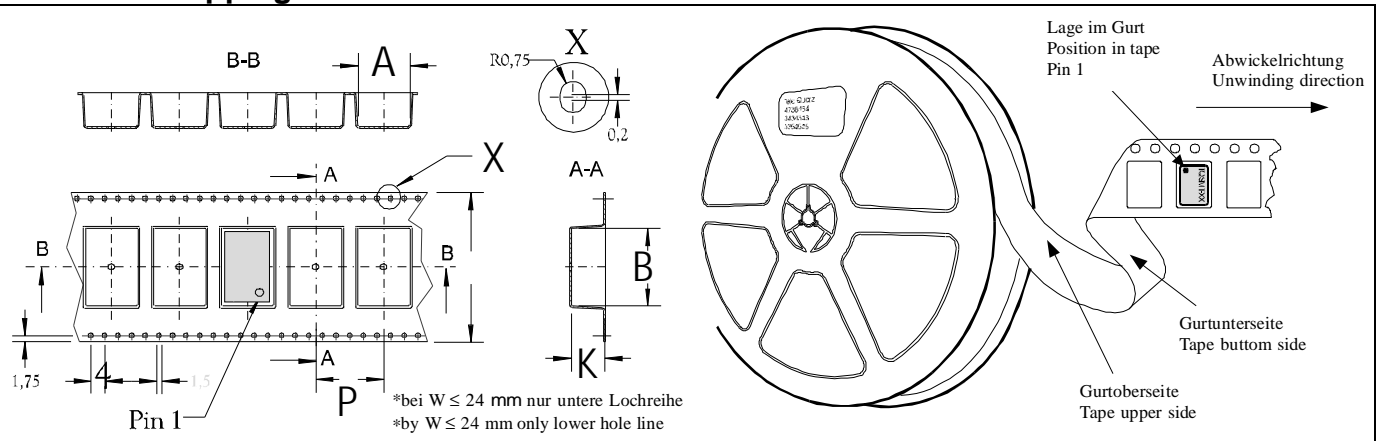


Frequency range [Hz]	Jitter [ps rms]
10Hz to 150kHz	0.775ps

## Block Diagramm



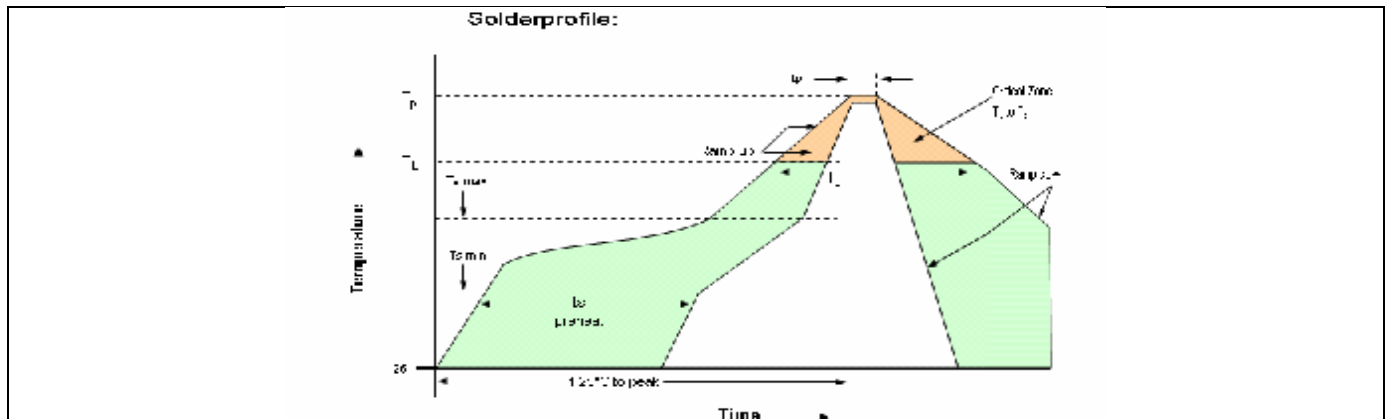
## Standard Shipping Method



Production tolerance complying DIN IEC 286-3

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
G218B	tbd	tbd	850	tbd

## Recommended Reflow Profile



Profile Feature	Pb-Free Assembly /Sn-Pb Assembly	Profile Feature	Pb-Free Assembly /Sn-Pb Assembly
Average ramp-up rate (TL to Tp)	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min Ts <sub>min</sub> -Temperature Min Ts <sub>max</sub> -Time (min to max) (ts)	150°C 200°C 60-180 seconds	Time maintained above - Temperature (TL) - Time (tL)	217°C 60-150 seconds
TS <sub>max</sub> to TL - Ramp-up Rate	3°C/second max.		
Time maintained above - Temperature (TL) - Time (tL)	217°C 60-150 seconds	Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Peak Temperature (Tp)	max 260°C	Ramp-down Rate	6°C/second max.

Note: All temperatures refer to topside of the package, measured on the package body surface.  
SMD oscillators must be on the top side of the PCB during the reflow process.

## How to Order this Product:

Model	Ref. Freq	Freq out	Supply Voltage Code	RF Output Code	Package Code
C3310			SV033	RFH	A1

**Supply:**

SV033: 3.3V

**Signal:**

RFH: HCMOS

**Enclosures:**

A1: H: 5.9 L: NA

Dimension: mm