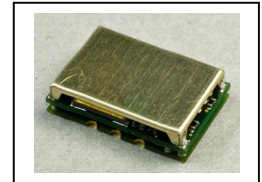


## Typical Applications

Base Stations  
 Test Equipment  
 Switching  
 Portable Equipment

## Features

Surface Mount Package  
 Reflow Process Compatible  
 AT-Cut Crystal  
 Low Phase Noise  
 Tight Stability



## Frequency range

50 MHz – 800 MHz (Dual Frequency)

## Standard frequencies

61.44; 68.736; 77.760; 76.8 MHz  
 81.92; 92.16; 100; 112; 122.88; 125; 134.4; 153.6; 155.52 MHz  
 156.25; 160; 179.2; 184.32; 245.76; 312.5; 320; 368.64 MHz  
 400; 448; 491.52; 622.08; 672 MHz

## Frequency stabilities<sup>1</sup>

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code <sup>5</sup>
vs. operating temperature range (Referenced to +25°C)	-15.0		+15.0	ppm	-20 ... +70°C	D105
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-10.0		+10.0	ppm	@vc=Vs/2	
vs. supply voltage change	-3.0		+3.0	ppm	Vs ± 5%	
vs. load change	-1.0		+1.0	ppm	Load ± 10%	
vs. aging /1. Year	-3.0		+3.0	ppm		
vs. aging / year (following Years)	-1.0		+1.0	ppm		

## Frequency stabilities<sup>1</sup>

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code <sup>5</sup>
vs. operating temperature range (Referenced to +25°C)	-30.0		+30.0	ppm	-40 ... +85°C	F305
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-15.0		+15.0	ppm	@vc=Vs/2	
vs. supply voltage change	-3.0		+3.0	ppm	Vs ± 5%	
vs. load change	-2.0		+2.0	ppm	Load ± 10%	
vs. aging /1. Year	-3.0		+3.0	ppm		
vs. aging / year (following Years)	-1.0		+1.0	ppm		

## Supply voltage

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code <sup>5</sup>
Supply voltage (Vs)	3.135	3.3	3.465	VDC		SV033
Current consumption			100	mA	@ LVPECL	
Current consumption			100	mA	@ LVDS	

## RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code <sup>5</sup>
Signal	PECL				Vs - 2V 20 to 80 %	RFP
Load		50		Ω		
Rise and Fall time			1	ns		
Duty cycle	45		55	%		
Signal	LVDS				10 to 90 %	RFL
Load		100		Ω		
Rise and Fall time			1	ns		
Duty cycle	40		60	%		

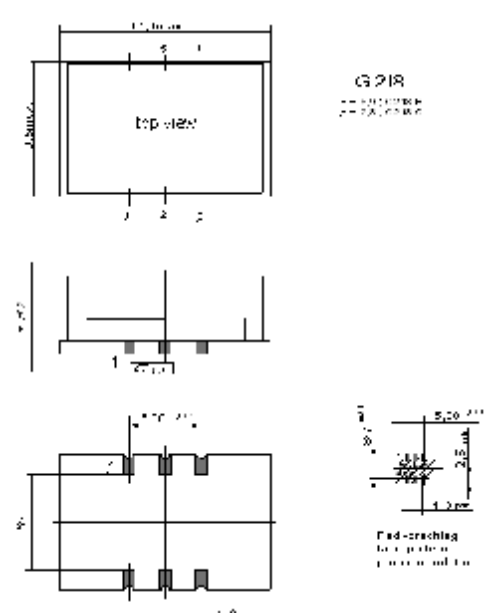
## Frequency Tuning (EFC)

Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	±75.0	±90.0	+250.0	ppm	
Linearity			10	%	
Tuning Slope	Positive				
Control Voltage Range	0.0	1.65	3.3	VDC	with Vs=3.3VDC
Frequency control input impedance	10			k Ω	

## Additional parameters

Parameter	Min	Typ	Max.	Units	Condition
Phase Noise		-80		dBc/Hz	10 Hz @155,52 MHz
		-105		dBc/Hz	100 Hz PECL
		-135		dBc/Hz	1 kHz 3,3V
		-143		dBc/Hz	10 kHz
		-143		dBc/Hz	100 kHz
Jitter		0,2		ps RMS	@ 12 kHz to 20 MHz
Phase Noise		-80		dBc/Hz	10 Hz @155,52 MHz
		-112		dBc/Hz	100 Hz LVDS
		-130		dBc/Hz	1 kHz 3,3V
		-150		dBc/Hz	10 kHz
		-155		dBc/Hz	100 kHz
Jitter		0,2		ps RMS	@ 12 kHz to 20 MHz
Phase Noise		-55		dBc/Hz	10 Hz @622,08 MHz
		-85		dBc/Hz	100 Hz PECL
		-115		dBc/Hz	1 kHz 3,3V
		-140		dBc/Hz	10 kHz
		-150		dBc/Hz	100 kHz
Jitter		0,05		ps RMS	@ 12 kHz to 20 MHz
Weight			2	g	
Processing & Packing	handling&processing note				

## Enclosures

			<b>Type G218B PECL; LVPECL and LVDS Version</b>		
Package Codes:					
			Code B1	Height "H" 5,9	Pin Length "L" NA
			 <p style="text-align: right;">Dimensions: mm</p>		

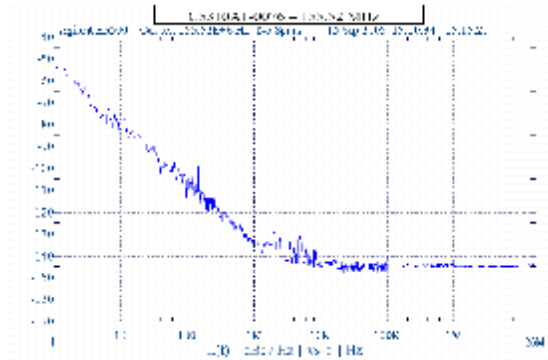
		<b>Pin Connections</b>
		1 Control Voltage (Vc) 2 Frequency Select 3 Ground (Case) 4 RF Output 5 RF Output complementary 6 Supply Voltage Input (Vs) Outline Drawing: G218B
Marking		
C5310A1-xxxx frequency * VI AYYWW		

## Absolute Maximum Ratings

Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			7	V	
Operable temperature range	-40		+85	°C	
Storage temperature range	-55		+105	°C	

### Typical Phase Noise and Jitter

(155,52 MHz; PECL output)

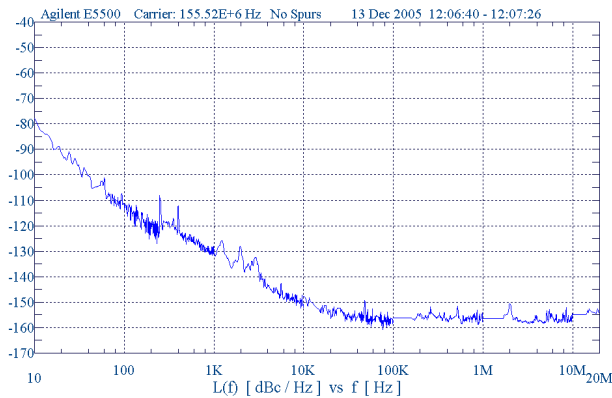


Frequency range [Hz]	S $\phi$ (f) [dB]	Jitter [ps rms]
12kHz to 20MHz	-65.34dB	0.2ps

### Typical Phase Noise and Jitter

(155,52MHz; LVDS output)

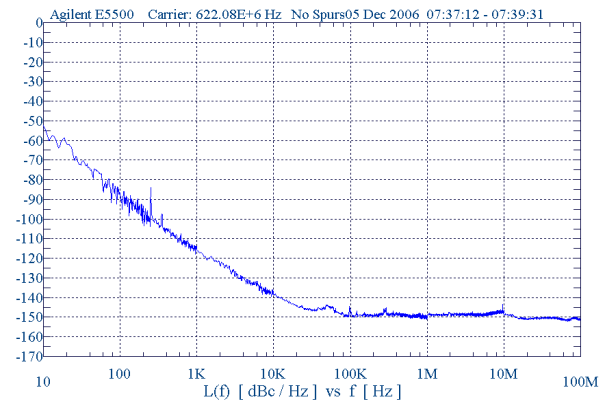
C5310A1-0103



Frequency range [Hz]	S $\phi$ (f) [dB]	Jitter [ps rms]
12kHz to 20MHz	-76dB	0.162ps

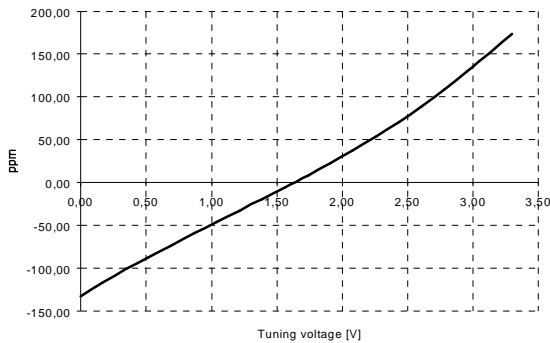
(622,08MHz; PECL output)

C5310A1-0096

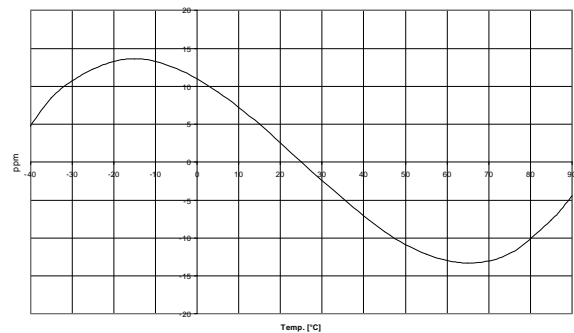


Frequency range [Hz]	S $\phi$ (f) [dB]	Jitter [ps rms]
12kHz to 20MHz	-70dB	0.05ps

### Typical tuning slope



### Typical frequency stability vs tp

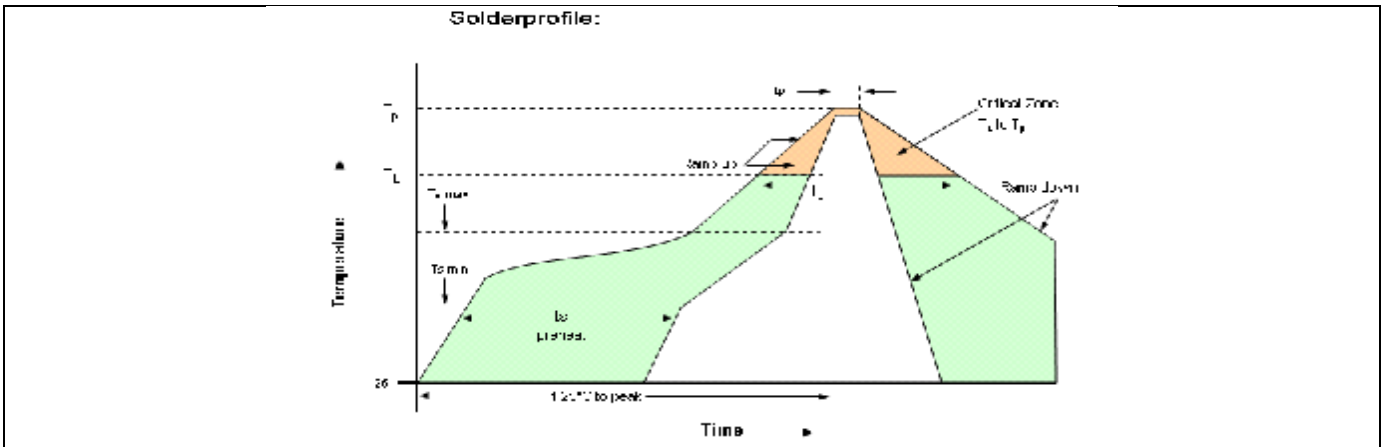


### Standard Shipping Method

Enclosure Type: G218B  
 Tape width W [mm]: 24  
 Quantity per meter: 83,3  
 Quantity per reel: 850  
 Dimension P: 12

Production tolerance complying DIN IEC 286-3

### Recommended Reflow Profile



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

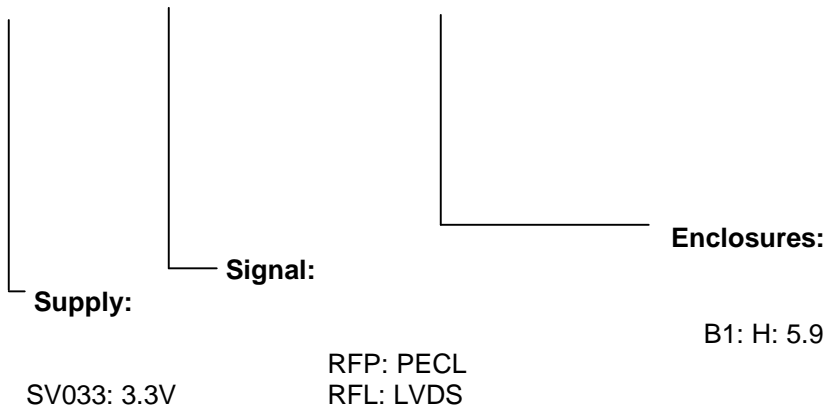
Note: All temperatures refer to topside of the package, measured on the package body surface.  
 SMD oscillators must be on the top side of the PCB during the reflow process.

### How to Order this Product:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency 1	Frequency 2
C5310	D105	SV033	RFP	B1		

vs.operat. temp. range:

D105: ±15ppm -20 ... +70°C  
 F305: ±30ppm -40 ... +85°C



Dimension: mm