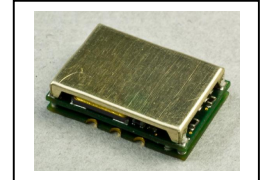


Typical Applications

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 stabilities¹

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
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 stabilities¹

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

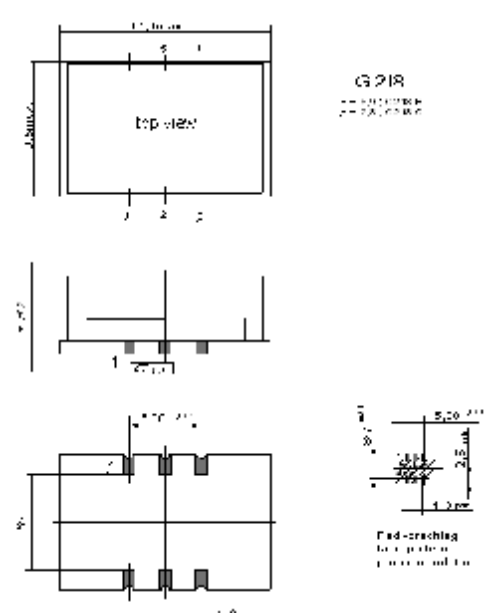
Frequency Tuning (EFC)

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

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

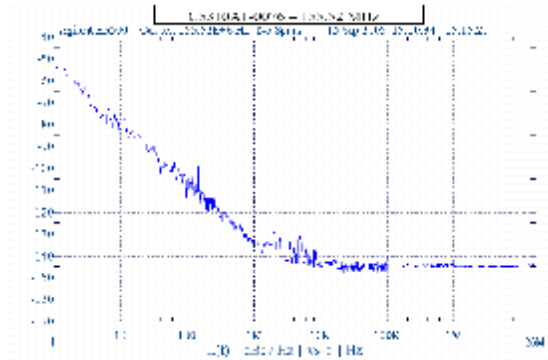
		Pin Connections
		1 Control Voltage (Vc) 2 Frequency Select 3 Ground (Case) 4 RF Output 5 RF Output complementary 6 Supply Voltage Input (Vs) Outline Drawing: G218B
Marking		
C5310A1-xxxx frequency * VI AYYWW		

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)

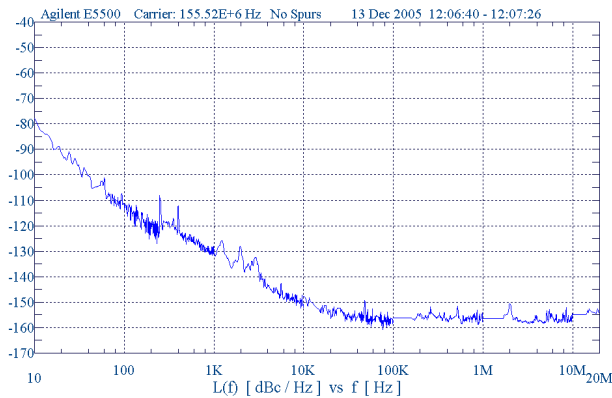


Frequency range [Hz]	S ϕ (f) [dB]	Jitter [ps rms]
12kHz to 20MHz	-65.34dB	0.2ps

Typical Phase Noise and Jitter

(155,52MHz; LVDS output)

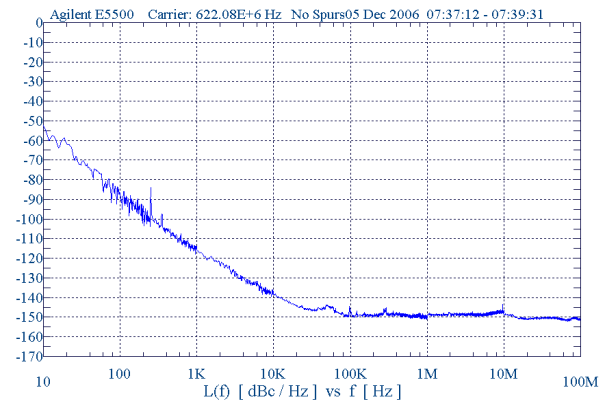
C5310A1-0103



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

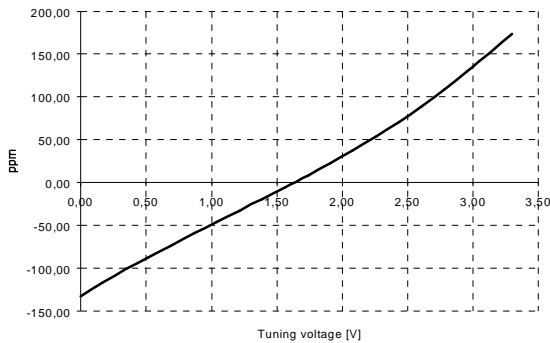
(622,08MHz; PECL output)

C5310A1-0096

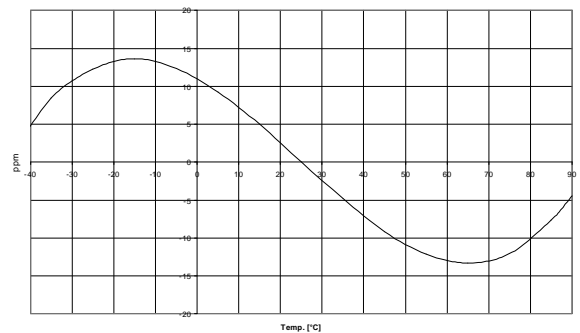


Frequency range [Hz]	S ϕ (f) [dB]	Jitter [ps rms]
12kHz to 20MHz	-70dB	0.05ps

Typical tuning slope



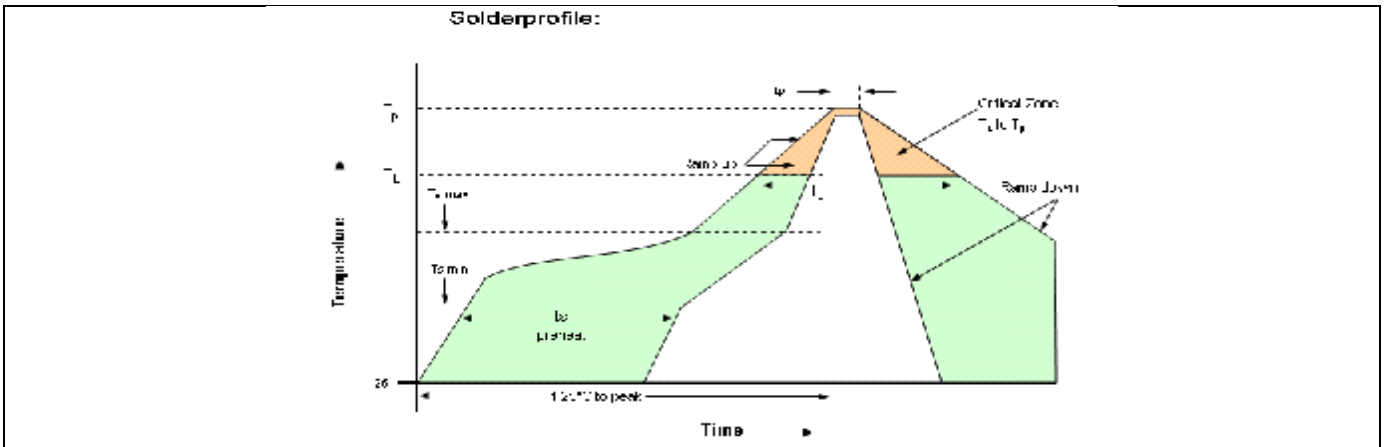
Typical frequency stability vs tp



Standard Shipping Method

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P	Production tolerance complying DIN IEC 286-3
G218B	24	83,3	850	12	

Recommended Reflow Profile



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

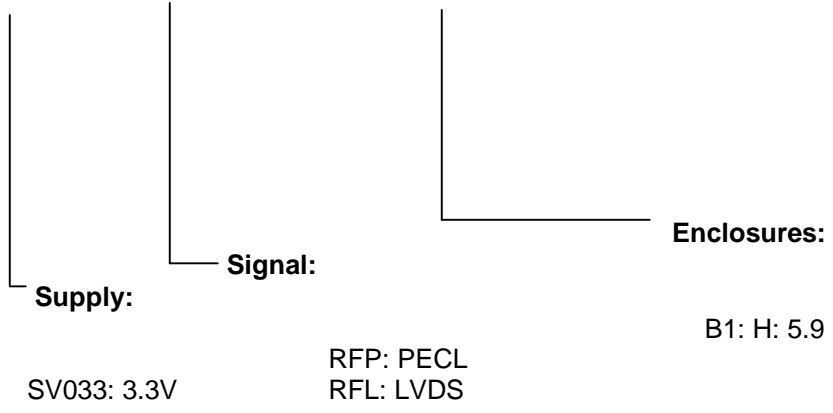
Note: All temperatures refer to topside of the package, measured on the package body surface.
 SMD oscillators must be on the top side of the PCB during the reflow process.

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