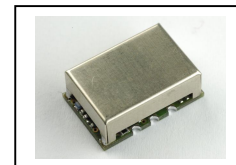


Typical Applications

Base Stations
 Test Equipment
 Synthesizers

Features

Surface Mount Package
 Reflow Process Compatible
 AT-Cut Crystal
 SONET Minimum Clock Specification



Previous Vectron Model Numbers

SPO50, 9140

Frequency range

8 MHz – 700 MHz

Standard frequencies

10; 24.705; 30.720; 32.768; 50; 68.768 MHz;
 77.76 MHz; 155.52; 622,08 MHz

Frequency stabilities¹ [Standard]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-10.0		+10.0	ppm	-20 ... +70°C	D105
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-5.0		+5.0	ppm	V _S ± 5% Load ± 5%	
vs. supply voltage change	-1.0		+1.0	ppm		
vs. load change	-1.0		+1.0	ppm		
vs. aging /1. Year	-3.0		+3.0	ppm		
vs. aging / year (following Years)	-1.0		+1.0	ppm		

Frequency stabilities¹ [meets SONET Minimum Clock Specification - Option]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range					-20 ... +70°C	D205
Parameter	Min	Typ	Max.	Units	Condition	
overall tolerance	-20.0		+20.0	ppm	(15 Years aging, temp, initial, supply, load)	

Supply voltage

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Supply voltage (Vs)	4.75	5.0	5.25	VDC		SV050
Current consumption			40	mA	@ HCMOS < 155 MHz	
Current consumption			90	mA	@ PECL < 155 MHz	
Supply voltage (Vs)	3.135	3.3	3.465	VDC		SV033
Current consumption			30	mA	@ LVHCMOS < 155 MHz	
Current consumption			80	mA	@ LVPECL < 155 MHz	
Current consumption			25	mA	@ LVDS < 155 MHz	

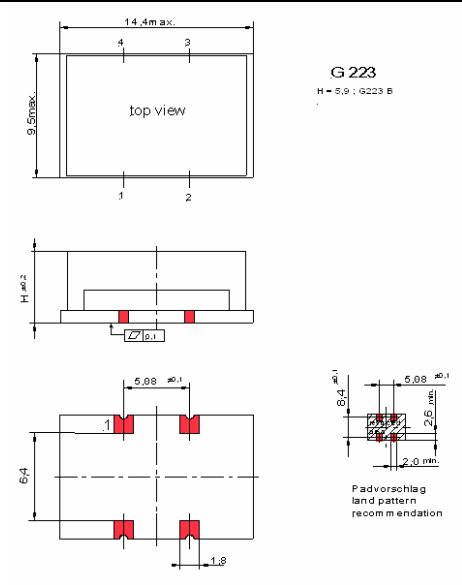
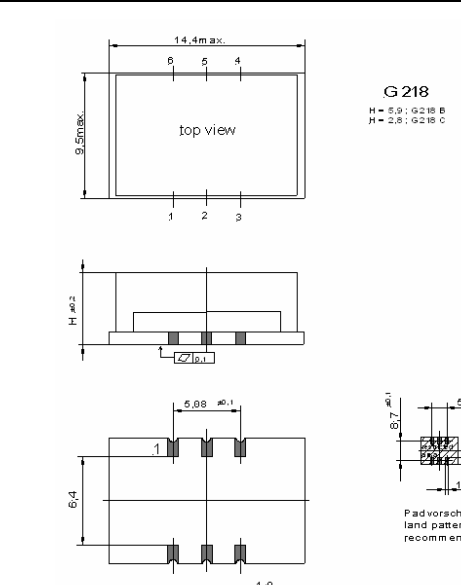
RF output

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

Additional parameters

Parameter	Min	Typ	Max.	Units	Condition
Phase Noise		-75		dBc/Hz	10 Hz @155 MHz
		-110		dBc/Hz	100 Hz PECL
		-135		dBc/Hz	1 kHz 3,3V
		-142		dBc/Hz	10 kHz
		-142		dBc/Hz	100 kHz
Jitter		1		ps RMS	@ 10 kHz to 20 MHz
Weight			2	g	
Processing & Packing	handling&processing note				

Enclosures

Type G223A for HCMOS and LVHCMOS Version			Type G218B for PECL; LVPECL and LVDS Version		
Package Codes:					
Code A1	Height "H" 5,9	Pin Length "L" NA	Code B1	Height "H" 5,9	Pin Length "L" NA
 <p>Dimensions: mm</p>			 <p>Dimensions: mm</p>		

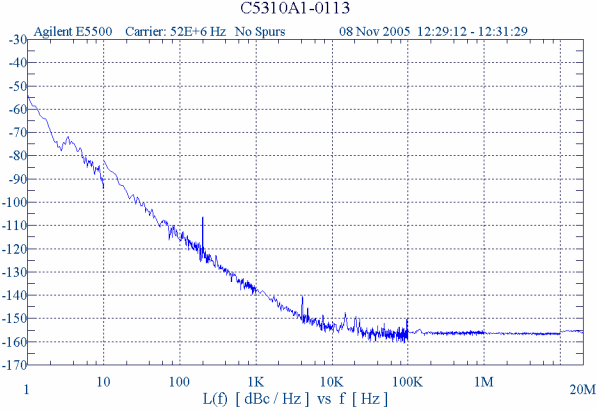
Pin Connections	Pin Connections
1 NC / Enable (optional) 2 Ground (Case) 3 RF Output 4 Supply Voltage Input (Vs) Outline Drawing: G223B	1 N/C 2 N/C / Enable (optional) 3 Ground (Case) 4 RF Output 5 Complementary RF Output 6 Supply Voltage Input (Vs) Outline Drawing: G218B
Marking	
C1310A1-xxxx frequency * VI AYYWW	

Absolute Maximum Ratings

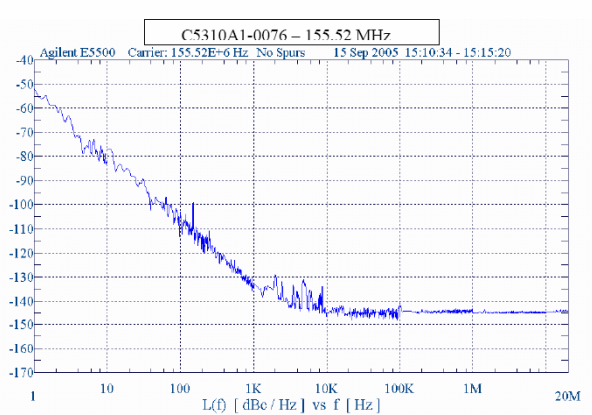
Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			7	V	
Operable temperature range	-30		+80	°C	
Storage temperature range	-40		+90	°C	

Typical Phase Noise and Jitter

(52 MHz; HCMOS output)



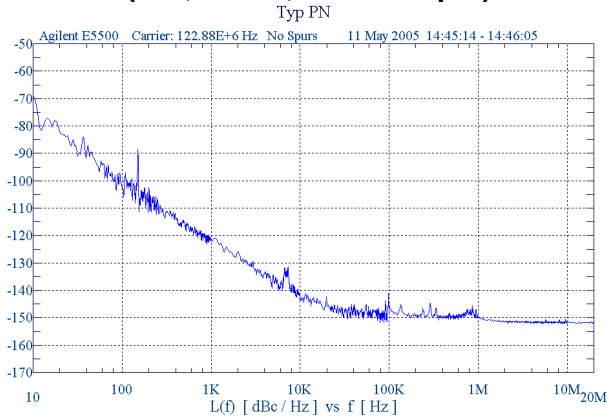
(155,52 MHz; PECL output)



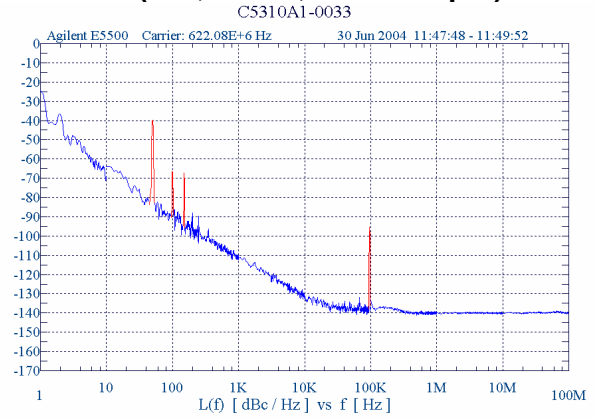
Frequency range [Hz]	S ₀ (f) [dB]	Jitter [ps rms]	Frequency range [Hz]	S ₀ (f) [dB]	Jitter [ps rms]
100Hz to 1.5MHz	-77dB	0.432ps	500Hz to 1.5MHz	-73.96dB	0.205ps
50kHz to 1.5MHz	-91dB	0.086ps	65kHz to 1.5MHz	-75.87dB	0.165ps
12kHz to 20MHz	-80dB	0.306ps	12kHz to 20MHz	-65.34dB	0.553ps

Typical Phase Noise and Jitter

(122,88MHz; LVDS output)



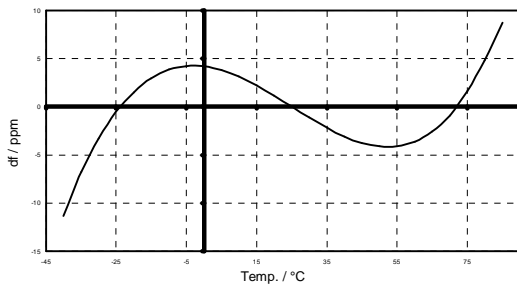
(622,08MHz; PECL output)



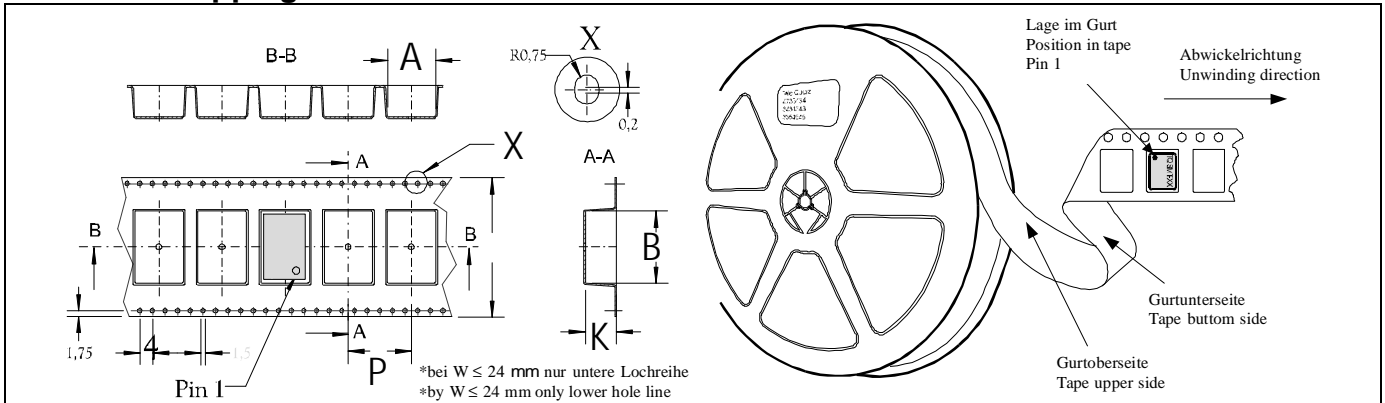
Frequency range [Hz]	S ϕ (f) [dB]	Jitter [ps rms]
100Hz to 1.5MHz	-75dB	0.230ps
50kHz to 1.5MHz	-84dB	0.082ps
12kHz to 20MHz	-75dB	0.230ps

Frequency range [Hz]	S ϕ (f) [dB]	Jitter [ps rms]
1kHz to 5MHz	-67.09dB	0.113ps
250kHz to 5MHz	-68.18dB	0.100ps
12kHz to 20MHz	-61.95dB	0.204ps

Typical frequency stability vs temp



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 / G223B	24	83,3	850	12

