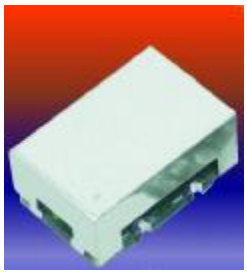
C5310 VCXO

Typical Applications
Base Stations
Test Equipment
Switching
Portable Equipment

Features
Surface Mount Package
Reflow Process Compatible
AT-Cut Crystal



Previous Vectron Model Numbers SVO50; SVO100; SVO110

Frequency range 1 MHz – 200 MHz; 622 MHz

Standard frequencies 16.384; 30.720; 32.768; 38.880 MHz;
51.840; 52.00; 68.736; 77.760 MHz; 155.52 MHz

Frequency stabilities[1] [Frequency < 80 MHz]

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 fo < 80 MHz	
vs. supply voltage change	-3.0		+3.0	ppm	V_S ± 5%	
vs. load change	-1.0		+1.0	ppm	Load ± 10% fo < 80 MHz	
vs. aging /1. Year	-3.0		+3.0	ppm		
vs. aging / year (followingYears)	-1.0		+1.0	ppm		

Frequency stabilities[1] [Frequency > 80 MHz]

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 fo > 80 MHz	
vs. supply voltage change	-3.0		+3.0	ppm	V_S ± 5%	
vs. load change	-2,0		+2.0	ppm	Load ± 10% fo > 80 MHz	
vs. aging /1. Year	-3.0		+3.0	ppm		
vs. aging / year (followingYears)	-1.0		+1.0	ppm		

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	
Current consumption			90	mA	@ PECL	
Supply voltage (Vs)	3.135	3.3	3.465	VDC		SV033
Current consumption			30	mA	@ LVHCMOS	
Current consumption			80	mA	@ LVPECL	
Current consumption			25	mA	@ LVDS	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code[5]
Signal		HCMOS				RFH
Load		15.0		pF		
Rise and Fall time			5	ns	@ 15 pF 10 to 90 %	
Duty cycle	40		60	%	@ Vs/2	
Signal		PECL				RFP
Load		50		Ω	Vs - 2V	
Rise and Fall time			1	ns	20 to 80 %	
Duty cycle	45		55	%		
Signal		LVDS				RFL
Load		100		Ω		
Rise and Fall time			1	ns	10 to 90 %	
Duty cycle	40		60	%		

Vectron International
Headquarters
267 Lowell Road
Hudson, New Hampshire 03051
+1-888-328-7661 tel
+1-888-329-8328 fax

Vectron International LLC.
100 Watts Street
Mount Holly Springs, PA 17065

USA
+1-717-486-3411 tel
+1-717-486-5920 fax

Vectron international GmbH & Co. KG
Landstrasse
D-74924 Neckarbischofsheim
Germany
+49-07268-801-0 tel
+49-07268-801-281 fax

Vectron Asia Pacific Sales Office
Unit 3119 31st Floor, Jin Mao Tower, 88 Century Boulevard, Shanghai, P.R. China 200120
+86 21 28909740 tel.
+86 21 28909240 fax

Frequency Tuning (EFC)

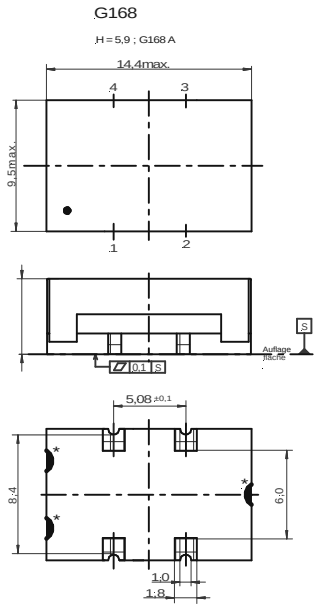
Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	±75.0 ±100.0	±90.0 ±140.0	+200.0 ±200.0	ppm ppm	Frequency > 40MHz Frequency <40MHz and 155.52 MHz
Linearity			10	%	
Tuning Slope	Positive				
Control Voltage Range	0.0 0.5	1.65 2.5	3.3 4.5	VDC VDC	with Vs=3.3VDC with Vs=5.0VDC
Frequency control input impedance	10			k Ω	

Additional parameters

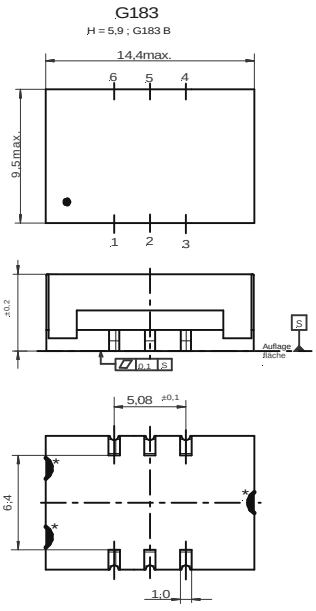
Parameter	Min	Typ	Max.	Units	Condition	
Phase Noise		-75		dBc/Hz	10 Hz	@155 MHz
		-110		dBc/Hz	100 Hz	PECL
		-135		dBc/Hz	1 kHz	3,3V
		-142		dBc/Hz	10 kHz	
		-142		dBc/Hz	100 kHz	
Jitter		1		ps RMS	@ 10 kHz to 20 MHz	
Weight			2	g		
Processing & Packing	handling&processing note					

Enclosures

Type G168A for HCMOS and LVHCMOS Version			Type G183B 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



Dimensions: mm



Dimensions: mm

Vectron International
Headquarters
267 Lowell Road
Hudson, New Hampshire 03051
+1-888-328-7661 tel
+1-888-329-8328 fax

Vectron International LLC.
100 Watts Street
Mount Holly Springs, PA 17065

USA
+1-717-486-3411 tel
+1-717-486-5920 fax

Vectron international GmbH & Co. KG
Landstrasse
D-74924 Neckarbischofsheim
Germany
+49-07268-801-0 tel
+49-07268-801-281 fax

Vectron Asia Pacific Sales Office
Unit 3119 31st Floor, Jin Mao Tower, 88 Century Boulevard, Shanghai, P.R. China 200120
+86 21 28909740 tel.
+86 21 28909240 fax

Pin Connections	Pin Connections
1 Control Voltage (Vc) 2 Ground (Case) 3 RF Output 4 Supply Voltage Input (Vs) Outline Drawing: G168A	1 Control Voltage (Vc) 2 N/C / Enable (optional) 3 Ground (Case) 4 RF Output 5 Complementary RF Output 6 Supply Voltage Input (Vs) Outline Drawing: G183B

true table	LVDS		LVPECL	
Pin 2	Pin 4	Pin 5	Pin 4	Pin 5
High	Data	compl. Data	Low	High
Open	Data	compl. Data	Data	compl. Data
Low	High Tristate	High Tristate	Data	compl. Data

Marking

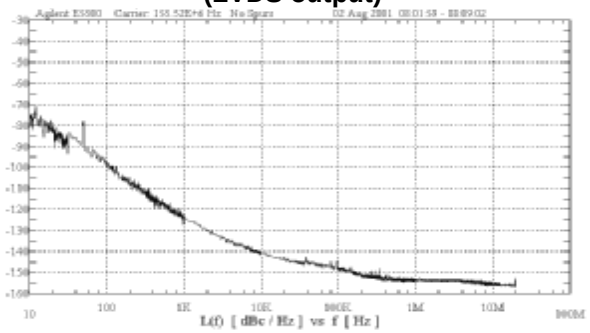
C5310A1-xxxx
frequency
* C AYYWW

Absolute Maximum Ratings

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

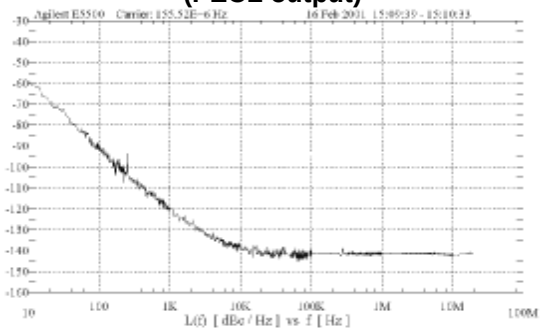
Typical Phase Noise and Jitter

(LVDS output)



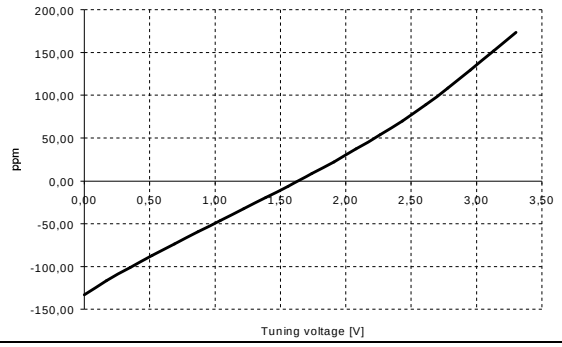
Frequency range [Hz]	Sϕ(f) [dB]	Jitter [ps rms]
500Hz to 1.5MHz	-83.76dB	0.066ps
65kHZ to 1.5MHz	-87.46dB	0.043ps
12kHz to 20MHz	-78.47dB	0.122ps

(PECL output)

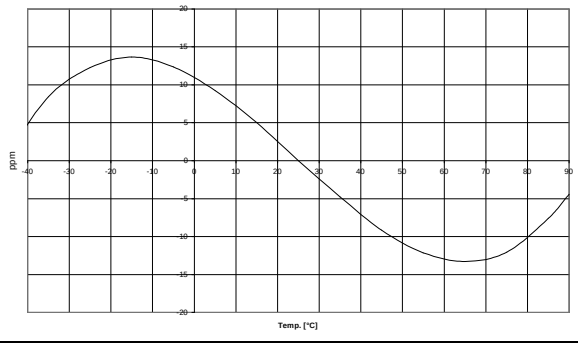


Frequency range [Hz]	Sϕ(f) [dB]	Jitter [ps rms]
500Hz to 1.5MHz	-73.96dB	0.205ps
65kHZ to 1.5MHz	-75.87dB	0.165ps
12kHz to 20MHz	-65.34dB	0.553ps

Typical tuning slope



Typical frequency stability vs tp



Vectron International
Headquarters
267 Lowell Road
Hudson, New Hampshire 03051
+1-888-328-7661 tel
+1-888-329-8328 fax

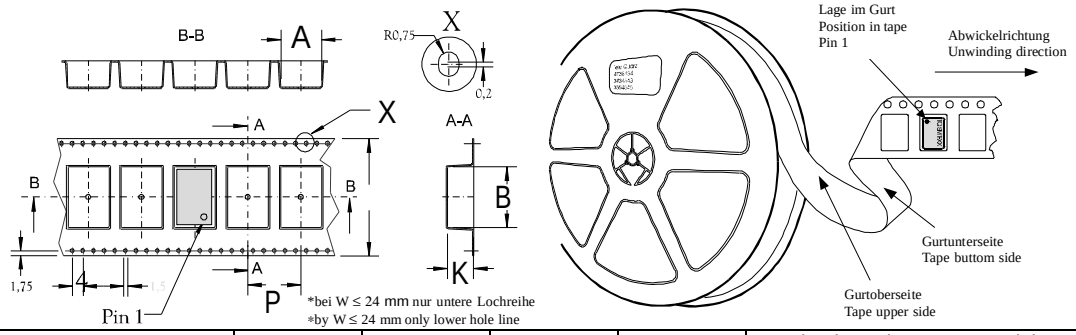
Vectron International LLC.
100 Watts Street
Mount Holly Springs, PA 17065

USA
+1-717-486-3411 tel
+1-717-486-5920 fax

Vectron international GmbH & Co. KG
Landstrasse
D-74924 Neckarbischofsheim
Germany
+49-07268-801-0 tel
+49-07268-801-281 fax

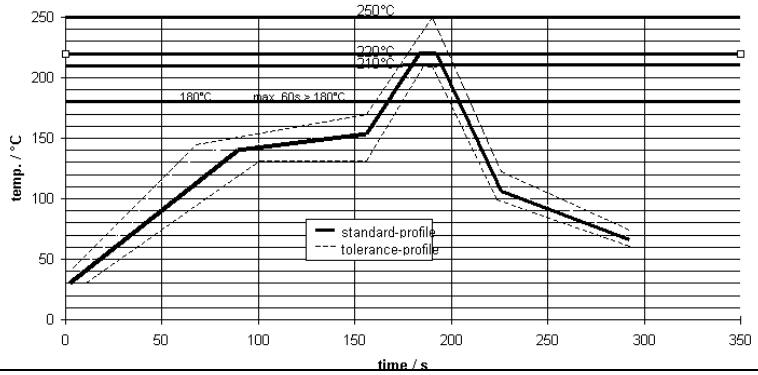
Vectron Asia Pacific Sales Office
Unit 3119 31st Floor, Jin Mao Tower, 88 Century Boulevard, Shanghai, P.R. China 200120
+86 21 28909740 tel.
+86 21 28909240 fax

Standard Shipping Method



Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P	Production tolerance complying DIN IEC 286-3
G168A/G183B	24	83,3	850	12	

Recommended Reflow Profile



SMD oscillators must be on the top side of the PCB during the reflow process.

How to Order this Product:

Step 1	Use this worksheet to forward the following information to your factory representative:				
	Model	**Stability Code**	**Supply Voltage Code**	**RF Output Code**	**Package Code**
	C5310				
Example:	*C5310*	*D105*	*SV050*	*RFH*	*A1*

Step 2	The factory representative will then respond with a Vectron Model Number in the following Configuration:		
Model	**Package Code**	**Dash**	**Dash Number**
C5310	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

Typical P/N = C5310A1-0001

Notes:

1 Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2 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)
3 Phase noise degrades with increasing output frequency.
4 Subject to technical modification.
5 Contact factory for availability.

Vectron International
Headquarters
267 Lowell Road
Hudson, New Hampshire 03051
+1-888-328-7661 tel
+1-888-329-8328 fax

Vectron International LLC.
100 Watts Street
Mount Holly Springs, PA 17065

USA
+1-717-486-3411 tel
+1-717-486-5920 fax

Vectron international GmbH & Co. KG
Landstrasse
D-74924 Neckarbischofsheim
Germany
+49-07268-801-0 tel
+49-07268-801-281 fax

Vectron Asia Pacific Sales Office
Unit 3119 31st Floor, Jin Mao Tower, 88 Century Boulevard, Shanghai, P.R. China 200120
+86 21 28909740 tel.
+86 21 28909240 fax