

## Typical Applications

Base Stations  
 Digital Switching  
 Synthesizers  
 Test Equipment

## Features

Standard Package  
 Low Aging  
 AT-Cut and SC-Cut Crystal Options  
 Fast Warm-up



## Previous Vectron Model Numbers

OCO100, 4598, MC2001, OC-160, C0730 Series

## Frequency range

5 MHz – 40 MHz

## Standard frequencies

10; 12; 12.8; 26; 32.768; 38.4; 16.384 MHz

## Frequency stabilities<sup>1</sup> [AT Cut Crystal – Standard]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code
vs. operating temperature range (Referenced to +25°C)	-30		+30	ppb	0 ... +70°C	C308
	-80		+80	ppb	-20 ... +70°C	D808
	-100		+100	ppb	-40 ... +70°C	E107
	-200		+200	ppb	-40 ... +85°C	F207
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-300		+300	ppb	at time of shipment, nominal EFC	
vs. supply voltage change	-5		+5	ppb	V <sub>S</sub> ± 5%	
vs. load change	-5		+5	ppb	Load ± 5%	
vs. aging /1 day	-2.0		+2.0	ppb	after 72 hours of operation	
vs. aging /1 Year	-500		+500	ppb	after 72 hours of operation	
vs. aging / year (following Years)	-250		+250	ppb		
Warm-up Time			3	minutes	to ± 100ppb of final frequency (1 hour reading) @ +25°C	

## Frequency stabilities<sup>1</sup> [SC Cut Crystal – Option]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code
vs. operating temperature range (Referenced to +25°C)	-10		+10	ppb	0 ... +70°C	C108
	-15		+15	ppb	-20 ... +70°C	D158
	-20		+20	ppb	-40 ... +70°C	E208
	-30		+30	ppb	-40 ... +85°C	F308
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-100		+100	ppb	at time of shipment, nominal EFC	
vs. supply voltage change	-5.0		+5.0	ppb	V <sub>S</sub> ± 5%	
vs. load change	-5.0		+5.0	ppb	Load ± 5%	
vs. aging /1 day	-1.0		+1.0	ppb	after 72 hours of operation	
vs. aging /1 Year	-100		+100	ppb	after 72 hours of operation	
vs. aging / year (following Years)	-50		+50	ppb		
Warm-up Time			3	minutes	to ± 10ppb of final frequency (1 hour reading) @ +25°C	

## Supply voltage (Vs)

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code
Supply voltage [Standard]	4.75	5	5.25	VDC		SV050
Supply voltage [Option]	11.4	12.0	12.6	VDC		SV120
Supply voltage [Option]	3.135	3.3	3.465	VDC		SV033
Power consumption			3.5	Watts	during warm-up	
			1.2	Watts	steady state @ +25°C	

## RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code
Signal [Standard]	HCMOS					RFH
Load		15		pF	with Vs=12.0V or 5.0V and 15pF load with Vs=3.3V and 15pF load with Vs=12.0V or 5.0V and 15pF load with Vs=3.3V and 15pF load @ (Voh-Vol)/2	
Signal Level (Vol)			0.5	VDC		
Signal Level (Voh)	4.5		0.3	VDC		
Duty cycle	3.0		55	VDC		
Signal [Option]	Sinewave					RFS
Load		50			50 Ohm load 50 Ohm load	
Output Power	+3.0	+5.5	+8.0	dBm		
Harmonics			-30	dBc		

## Frequency Tuning (EFC)

Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	±0.75	±1.25	±2.0	ppm	with SC Cut Crystal
	±6.0	±8.0	±12	ppm	with AT Cut Crystal
Linearity			20	%	
Tuning Slope	Positive				
Control Voltage Range	0.0	2.0	4.0	VDC	with Vs=5.0VDC
	0.0	2.5	5.0	VDC	with Vs=12VDC
	0.0	1.5	3.0	VDC	with Vs=3.3VDC

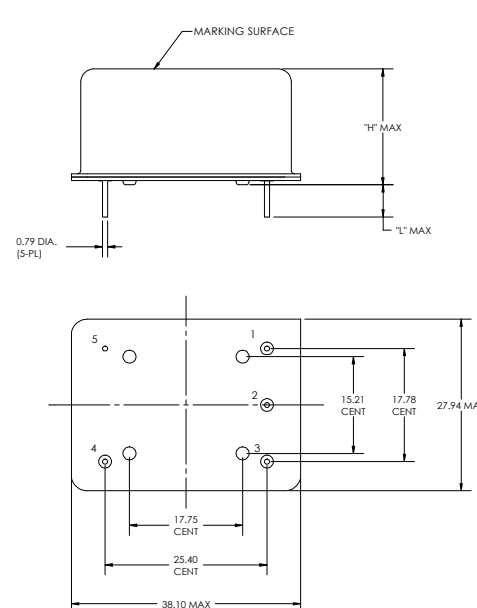
## Reference Voltage Output (Vref)

Parameter	Min	Typ	Max.	Units	Condition
Reference Voltage	3.92	4.0	4.08	VDC	with Vs=5.0VDC
	4.9	5.0	5.1	VDC	with Vs=12VDC
	2.75	2.8	2.85	VDC	with Vs=3.3VDC

## Additional parameters

Parameter	Min	Typ	Max.	Units	Condition
Phase Noise <sup>3</sup>			-85	dBc/Hz	1 Hz 10 Hz 100 Hz 1 kHz 10 kHz with 10 MHz SC Cut
			-120	dBc/Hz	
			-140	dBc/Hz	
			-145	dBc/Hz	
			-150	dBc/Hz	
Phase Noise <sup>3</sup>			-75	dBc/Hz	1 Hz 10 Hz 100 Hz 1 kHz 10 kHz with 10 MHz AT Cut
			-100	dBc/Hz	
			-130	dBc/Hz	
			-140	dBc/Hz	
			-150	dBc/Hz	
Weight			3.0	g	
Processing & Packing	Handling & processing note				

## Enclosures

Type A		
Package Codes:		
Code	Height "H"	Pin Length "L"
A1	19.00	5.0
A2	16.00	5.0
A3 <sup>5</sup>	12.70	5.0
		
Dimensions: mm		
Pin Connections		
1 Electronic Frequency Control Input (EFC) 2 Reference Voltage Output 3 Supply Voltage Input (Vs) 4 RF Output 5 Ground (Case)		

## Absolute Maximum Ratings

Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			7.0	V	with Vs=5.0VDC
			15.0	V	with Vs=12VDC
			7.0	V	with Vs=3.3VDC
Output Load			50	pF	with HCMOS signal
			25	Ohms	with Sinewave signal
Operable temperature range	-55		+85	°C	
Storage temperature range	-55		+125	°C	

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v.2005-04-12 · page 3 of 4

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## How to Order this Product:

<b>Step 1</b>	Use this worksheet to forward the following information to your factory representative:					
	<b>Model</b>	<b>Stability Code</b>	<b>Supply Voltage Code</b>	<b>RF Output Code</b>	<b>Package Code</b>	<b>Frequency</b>
	C4600					

*Example:* C4600                      C308                      SV050                      RFH                      A1                      10.000Mhz

<b>Step 2</b>	The factory representative will then respond with a Vectron Model Number in the following configuration:			
	<b>Model</b>	<b>Package Code</b>	<b>Dash</b>	<b>Dash Number</b>
	C4600	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

*Typical P/N = C4600A1-0001*

### 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.