

Typical Applications

Test Equipment
 Frequency Synthesizers
 Position Location
 Satellite Communications

Features

Low Phase Noise
 High Stability
 SC-Cut Crystal Standard



Previous Vectron Model Numbers

6012, MC886 Series, CO-714, CO-717,
 CO-718S

Frequency range

5 MHz – 20 MHz

Standard frequencies

10Mhz

Frequency stabilities¹ [SC Cut Crystal – Standard]

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
	-20		+20	ppb	-20 ... +70°C	D208
	-25		+25	ppb	-40 ... +70°C	E258
	-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	-2.0		+2.0	ppb	V _S ± 5%	
vs. load change	-2.0		+2.0	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			5	minutes	to ± 10ppb of final frequency (1 hour reading) @ +25°C	

Supply voltage (Oven and Oscillator)

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code
Supply voltage [Standard]	11.4	12.0	12.6	VDC		SV120
Supply voltage [Option]	14.25	15.0	15.75	VDC		SV150
Oscillator Power consumption			0.5	Watts		
Oven Power consumption			6.0	Watts	during warm-up	
			2.0	Watts	steady state @ +25°C	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code
Signal [Standard]	Sinewave					RFS
Load		50		Ω	50 Ohm load 50 Ohm load	
Output Power	+3.0	+5.5	+8.0	dBm		
Harmonics			-30	dBc		
Signal [Option]	HCMOS					RFH
Load		15		pF	@ (Voh-Vol)/2	
Signal Level (Vol)			0.5	VDC		
Signal Level (Voh)	4.5			VDC		
Duty cycle	45		55	%		

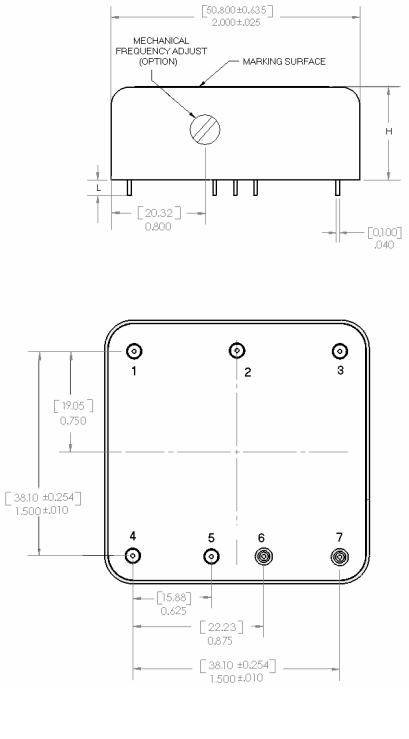
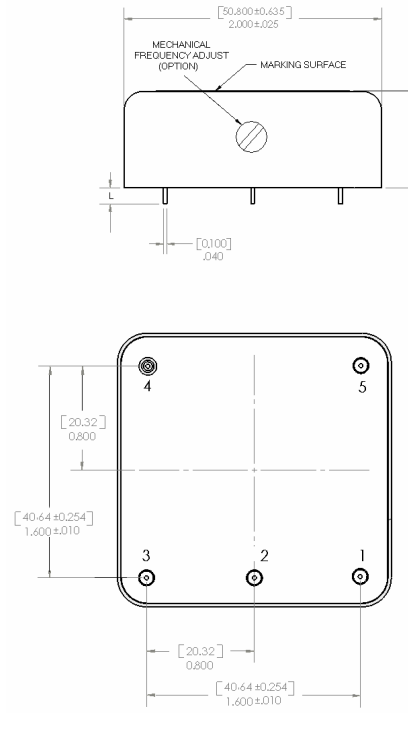
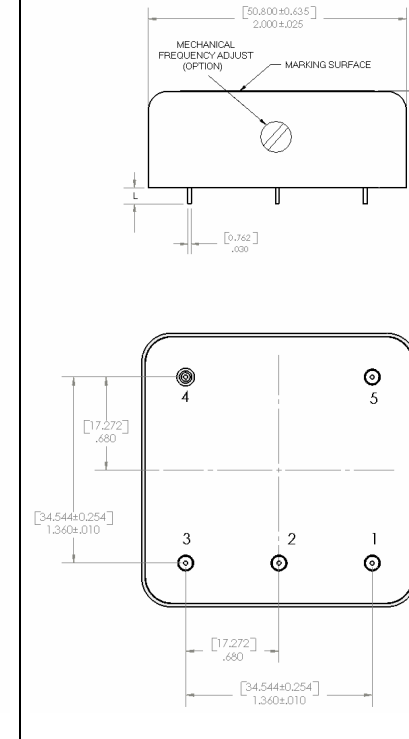
Frequency Tuning (EFC)

Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	±0.75	±1.25	±2.0	ppm	
Linearity			20	%	
Tuning Slope	Positive				
Control Voltage Range	0.0	2.5	5.0	VDC	

Reference Voltage Output (Vref)

Parameter	Min	Typ	Max.	Units	Condition
Reference Voltage	4.9	5.0	5.1	VDC	

Enclosures

Type A			Type B			Type C		
Package Codes:								
Code	Height "H"	Pin Length "L"	Code	Height "H"	Pin Length "L"	Code	Height "H"	Pin Length "L"
A1	26.42	6.35	B1	26.42	6.35	C1	26.42	6.35
A2	20.00	6.35	B2	20.00	6.35	C2	20.00	6.35
						C3	25.40	6.35
 <p>Dimensions: inches [mm]</p>			 <p>Dimensions: inches [mm]</p>			 <p>Dimensions: inches [mm]</p>		
Pin Connections 1 Oven Return 2 Supply Voltage Input Oscillator 3 Electronic Frequency Control Input (EFC) 4 Supply Voltage Input Oven 5 RF Output 6 Oscillator and Case Ground 7 Ground (Case)			Pin Connections 1 Electronic Frequency Control Input (EFC) 2 Reference Voltage Output 3 RF Output 4 Ground (Case) 5 Supply Voltage Input (Vs)			Pin Connections 1 Electronic Frequency Control Input (EFC) 2 Reference Voltage Output 3 RF Output 4 Ground (Case) 5 Supply Voltage Input (Vs)		

Additional parameters

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code
Phase Noise ³ [Standard] @ 10 MHz			-80	dBc/Hz	1 Hz	PN1
			-120	dBc/Hz	10 Hz	
			-140	dBc/Hz	100 Hz	
			-145	dBc/Hz	1 kHz	
			-150	dBc/Hz	10 kHz	
Phase Noise ³ [Option] @ 10 MHz			-95	dBc/Hz	1 Hz	PN2
			-125	dBc/Hz	10 Hz	
			-150	dBc/Hz	100 Hz	
			-160	dBc/Hz	1 kHz	
			-165	dBc/Hz	10 kHz	
Weight			100	g		
Mechanical Frequency Adjust	Contact Factory					

Absolute Maximum Ratings

Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			28.0	V	
Output Load			50 25	pF Ohms	with HCMOS signal with Sinewave signal
Operable temperature range	-55		+85	°C	
Storage temperature range	-55		+125	°C	

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	Phase Noise Code	Package Code	Frequency
C4710						
<i>Example</i>	<i>C4710</i>	<i>D207</i>	<i>SV050</i>	<i>RFH</i>	<i>PN1</i>	<i>A1</i>
						<i>10.000Mhz</i>

Step 2	The factory representative will then respond with a Vectron Model Number in the following configuration:		
Model	Package Code	Dash	Dash Number
C4710	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

Typical P/N = C4710A1-0001

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.

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