

## Typical Applications

Base Stations  
 Test Equipment  
 Synthesizers  
 Digital Switching

## Previous Vectron Model Numbers

## Frequency range

10 MHz – 160 MHz

## Standard frequencies

10; 12.8; 16.384; 19.2 ; 20; 30.72; 32.768MHz

## Features

Surface Mount Package  
 Reflow Process Compatible  
 AT-Cut and SC-Cut Crystal Options  
 Low Profile Compact Package  
 OCO1000, C4500



## Frequency stabilities<sup>1</sup> [AT Cut Crystal – 10 MHz to 160MHz]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code
vs. operating temperature range (Referenced to +25°C)	-100 -250 -250		+100 +250 +250	ppb ppb ppb	-20 ... +70°C -20 ... +70°C -40 ... +85°C	D207 D257 F257
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-500		+500	ppb	at time of shipment, nominal EFC	
vs. supply voltage change	-20		+20	ppb	V <sub>s</sub> ± 5%	
vs. load change	-10		+10	ppb	Load ± 5%	
vs. aging / day	-10		+10	ppb	after 30 days of operation	
vs aging / year	-300		+300	ppb	≤ 60MHz; after 30 days of operation	
vs. aging / year	-500		+500	ppb	>60MHz; after 30 days of operation	
Warm-up Time			3	minutes	to ± 100ppb of final frequency (1 hour reading) @ +25°C	

## Frequency stabilities<sup>1</sup> [SC Cut Crystal – 10 to 40 MHz]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code
vs. operating temperature range (Referenced to +25°C)	-25 -50		+25 +50	ppb ppb	-20 ... +70°C -40 ... +85°C	D258 F508
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-200		+200	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 / day	-1.0		+1.0	ppb	after 30 days of operation	
vs aging / 1 Year	-100		+100	ppb	after 30 days of operation	
vs. aging / year (following Years)	-80		+80	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]	3.135	3.3	3.465	VDC		SV033
Power consumption			2.5 1.0	Watts Watts	during warm-up steady state @ +25°C	

**RF output**

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code
Signal [Standard]	HCMOS					RFH
Load		15		pF	with Vs=5.0V and 15pF load with Vs=3.3V and 15pF load with Vs=5.0V and 15pF load with Vs=3.3V and 15pF load @ (Voh-Vol)/2	
Signal Level (Vol)			0.5	VDC		
Signal Level (Voh)	3.7		0.3	VDC		
	2.4			VDC		
Duty cycle	45		55	%		
Signal [Option]	Sinewave					RFS
Load		50		Ω		
Output Power	+0	+2.5	+5.0	dBm	50 Ohm load	
Harmonics			-30	dBc	50 Ohm load	

**Frequency Tuning (EFC)**

Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	±1.0	±1.75	±2.5	ppm	with SC Cut Crystal
	±3.0	±5.0	±8	ppm	with AT Cut Crystal
Linearity			5	%	
Tuning Slope	Positive				
Control Voltage Range	0.0	2.0	4.0	VDC	with Vs=5.0VDC
	0.0	1.4	2.8	VDC	with Vs=3.3VDC

**Reference Voltage Output (Vref)**

Parameter	Min	Typ	Max.	Units	Condition
Reference Voltage	3.85	4.0	4.15	VDC	with Vs=5.0VDC
	2.7	2.8	2.9	VDC	with Vs=3.3VDC

**Additional parameters**

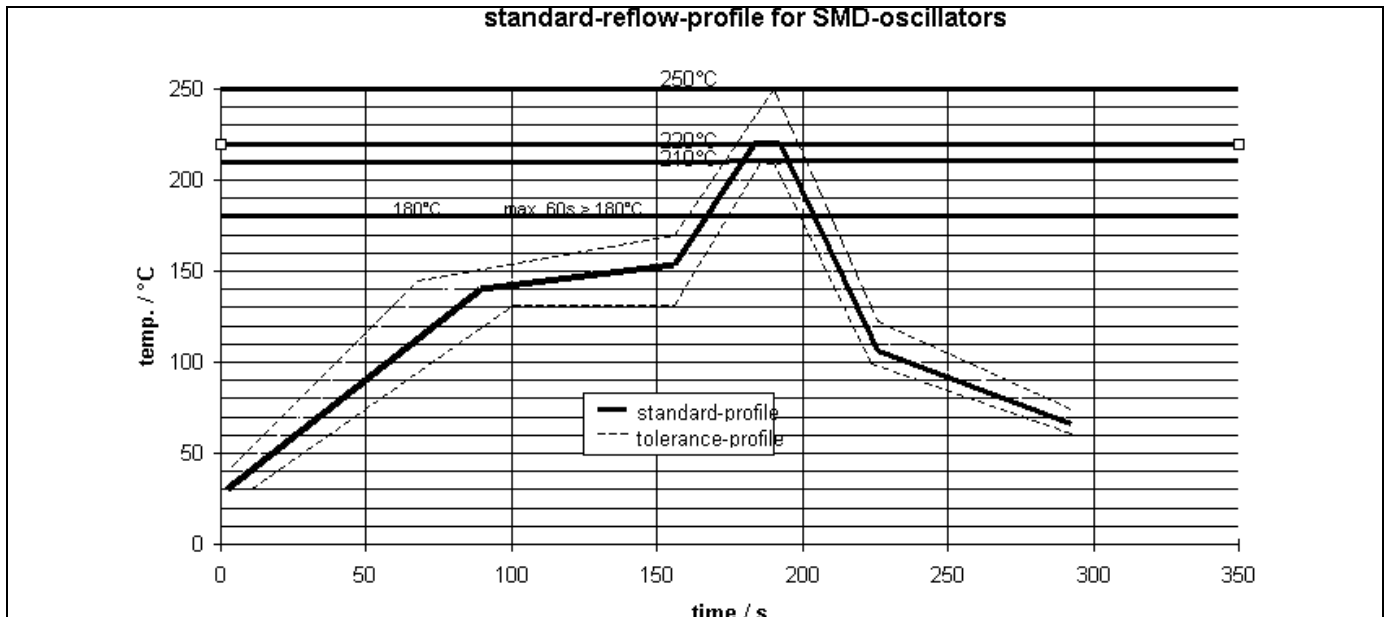
Parameter	Min	Typ	Max.	Units	Condition
Phase Noise <sup>3</sup>		-90		dBc/Hz	1 Hz with 10 MHz SC Cut 10 Hz 100 Hz 1 kHz 10 kHz
		-120		dBc/Hz	
		-140		dBc/Hz	
		-145		dBc/Hz	
		-150		dBc/Hz	
Phase Noise <sup>3</sup>		-75		dBc/Hz	1 Hz with 10 MHz AT Cut 10 Hz 100 Hz 1 kHz 10 kHz
		-105		dBc/Hz	
		-130		dBc/Hz	
		-140		dBc/Hz	
		-150		dBc/Hz	
Weight			10	g	
Processing & Packing	Handling & processing note				

**Absolute Maximum Ratings**

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



**Recommended Reflow Profile**



**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>
	C4530					
	<i>Example: C4530                      D207                      SV050                      RFH                      A1                      20.0MHz</i>					

<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>
	C4530	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]
	<i>Typical P/N = C4530A1-0001</i>			

**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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