

Typical Applications

Base Stations
 Test Equipment
 Synthesizers
 Digital Switching

Previous Vectron Model Numbers

Frequency range

Standard frequencies

Features

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



4853, 4853S, 4597, 4597S,
 4859, 4859S, 4877, 4877S

10 MHz – 100 MHz

10; 12.8;13; 16.384;20; 32.768MHz; 100Mhz

Frequency stabilities¹ [AT Cut Crystal – Standard]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code
vs. operating temperature range (Referenced to +25°C)	-50		+50	ppb	0 ... +70°C	C508
	-100		+100	ppb	-20 ... +70°C	D107
	-150		+150	ppb	-40 ... +70°C	E157
	-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	-10		+10	ppb	V _S ± 5%	
vs. load change	-10		+10	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 stabilities¹ [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
	-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	-5.0		+5.0	ppb	V _S ± 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			3.0	Watts	during warm-up	
			1.0	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	1.4	2.8	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

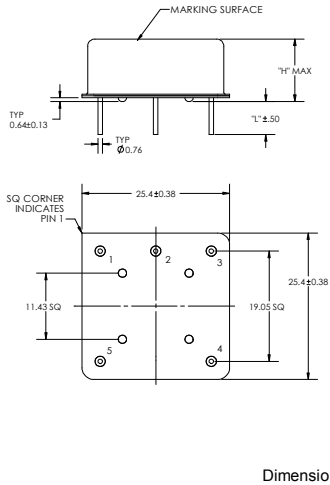
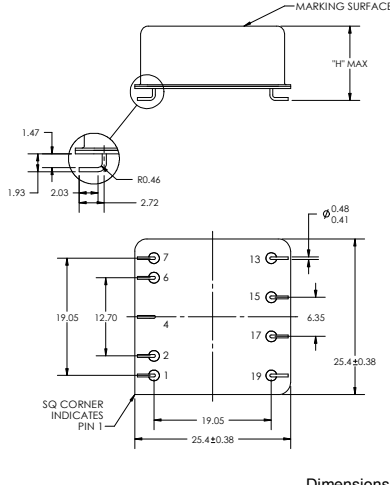
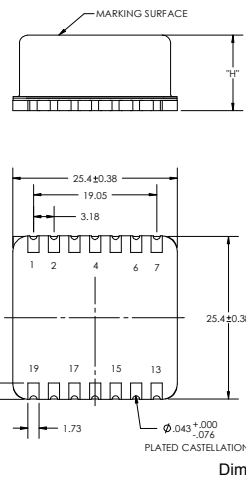
Additional parameters

Parameter	Min	Typ	Max.	Units	Condition
Phase Noise ³			-80	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 ³			-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			14	g	
Processing & Packing	Handling & processing note				

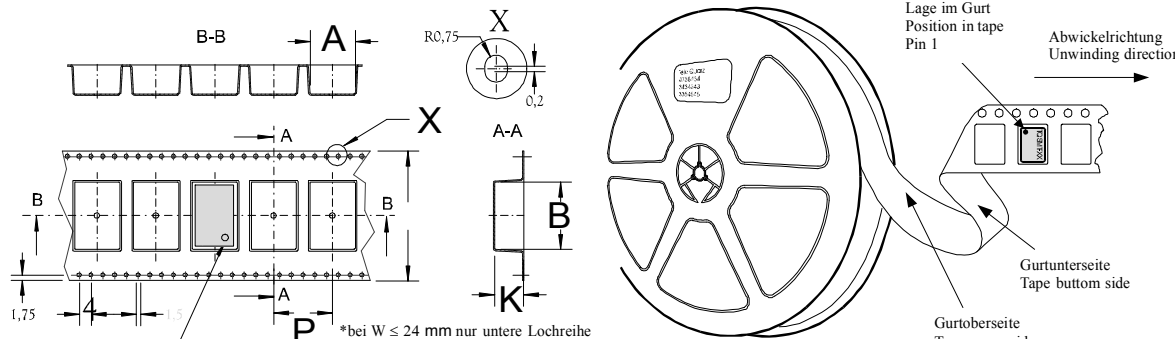
Absolute Maximum Ratings

Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			7.0	V	with Vs=5.0VDC
			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	

Enclosures

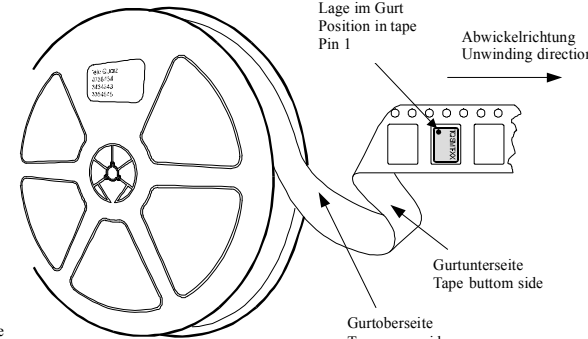
Type A			Type B			Type C		
Package Codes:								
Code	Height "H"	Pin Length "L"	Code	Height "H"	Pin Length "L"	Code	Height "H"	Pin Length "L"
A1	11.25	6.35	B1	12.70	NA	C1	15.24	NA
A2	13.40	6.35	B2	15.24	NA	C2	13.00	NA
A3 ⁵	10.00	6.35	B3	11.30	NA	C3	11.70	NA
 <p>Dimensions: mm</p>			 <p>Dimensions: mm</p>			 <p>Dimensions: mm</p>		
Pin Connections 1 RF Output 2 Ground (Case) 3 Electronic Frequency Control Input (EFC) 4 Reference Voltage Output 5 Supply Voltage Input (Vs)			Pin Connections 1 RF Output 2 N/C* 4 Ground (Case) 6 N/C* 7 Electronic Frequency Control Input (EFC) 13 Reference Voltage Output (Vref) 15 N/C* 17 N/C* 19 Supply Voltage Input (Vs)			Pin Connections 1 RF Output 2 N/C* 4 Ground (Case) 6 N/C* 7 Electronic Frequency Control Input (EFC) 13 Reference Voltage Output (Vref) 15 N/C* 17 N/C* 19 Supply Voltage Input (Vs)		

Standard Shipping Method (For SMD Type B and C Packages)



Pin 1

*bei W ≤ 24 mm nur untere Lochreihe
 *by W ≤ 24 mm only lower hole line



Lage im Gurt
Position in tape
Pin 1

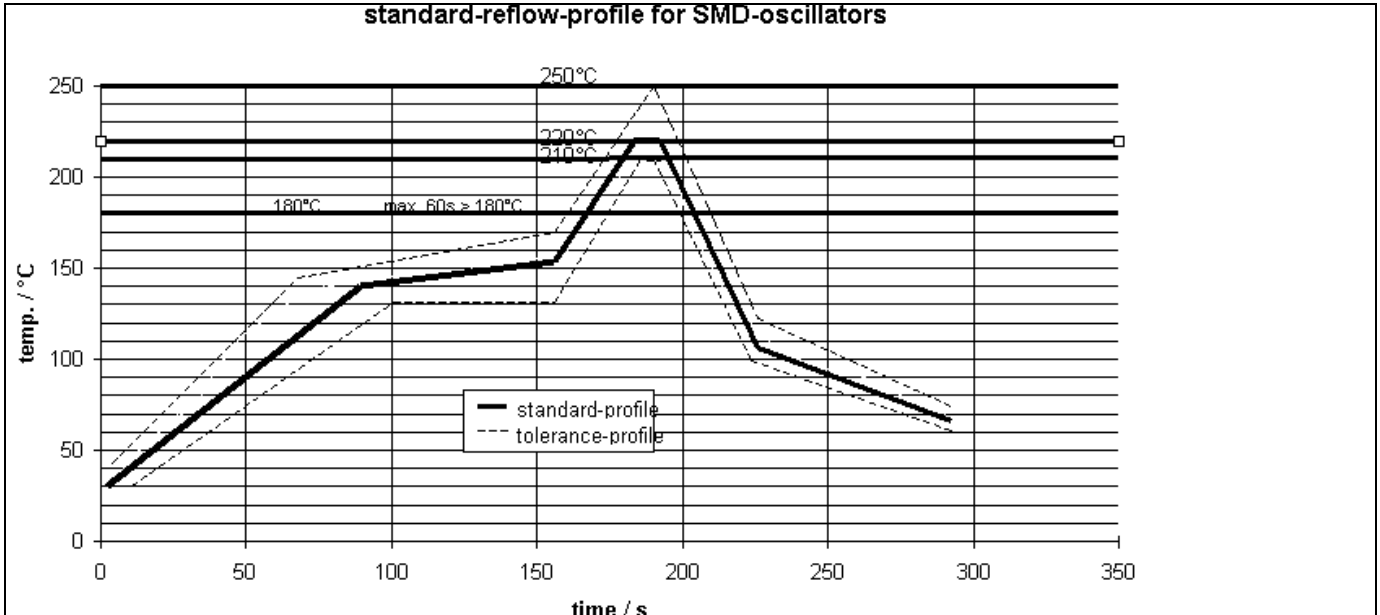
Abwickelrichtung
Unwinding direction

Gurtunterseite
Tape bottom side

Gurtoberseite
Tape upper side

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
Type B	44	33.3	250	34
Type C	44	33.3	250	34

Recommended Reflow Profile



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	Frequency
C4550					

Example: C4550 D207 SV050 RFH A1 10.000Mhz

Step 2	The factory representative will then respond with a Vectron Model Number in the following configuration:		
Model	Package Code	Dash	Dash Number
C4550	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

Typical P/N = C4550A1-0001

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.