

Typical Applications

PCS Base Stations
 Land Mobile Radio
 Cellular Telephony
 Radio in the Local Loop

Features

EFC Standard
 Hermetic
 Wide Frequency Range



Previous Vectron Model Numbers

TQDILTC; 979; 979W, 959; 959W, TC-400

Frequency Range

10 MHz – 200 MHz

Standard Frequencies

10, 19.44, 20.48, 38.88, 77.76MHz;

Frequency stabilities¹

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-2.0		+2.0	ppm	-40 ... +85°C	F206
	-1.0		+1.0	ppm	-40 ... +85°C	F106
	-2.0		+2.0	ppm	-20 ... +70°C	D206
	-1.0		+1.0	ppm	-20 ... +70°C	D106
	-1.0		+1.0	ppm	0 ... +50°C	B106
	-0.5		+0.5	ppm	0 ... +50°C	B507
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 2.5		+2.5	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	- 0.2		+0.2	ppm	V _S ± 5%	
vs. load change	- 0.2		+0.2	ppm	Load ± 10%	
vs. aging		1.0		ppm/yr		

Supply voltage (Vs)

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Supply voltage [Standard]	3.135	3.3	3.465	VDC		SV033
Supply voltage [Option]	4.75	5	5.25	VDC		SV050
Current consumption			15	mA	@ +25°C & 3.3VDC & clipped sinewave	
			50	mA	@ +25°C & 3.3VDC & CMOS	
			18	mA	@ +25°C & 5.0VDC & clipped sinewave	
			50	mA	@ +25°C & 5.0VDC & CMOS	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Signal [Standard]	HCMOS					RFH
Load	13.5	15	16.5	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	
Signal Level (Vol)			0.5	VDC		
Signal Level (Voh)	4.5		0.3	VDC		
Rise and Fall time	3.0			VDC		
Duty cycle	40	50	60	%		
Signal [Option]	clipped Sinewave					RFC
Load R	9	10	11	kΩ	@ 10kΩ 10pF	
C	9	10	11	pF		
Output power	0.7			V _{pp}		

Frequency Tuning (EFC)

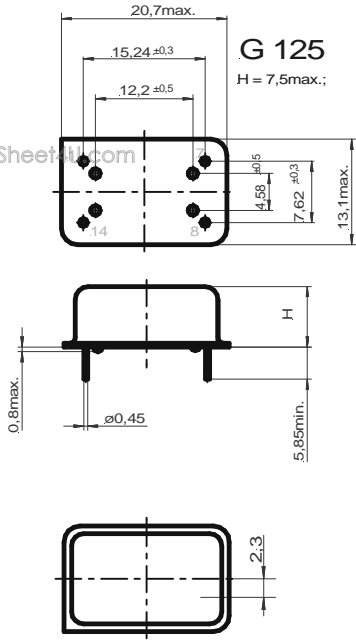
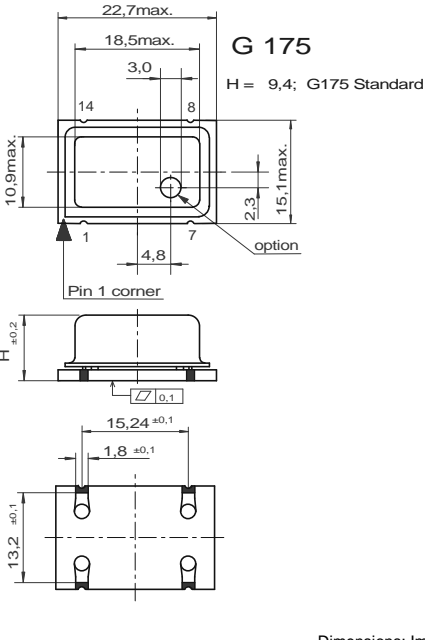
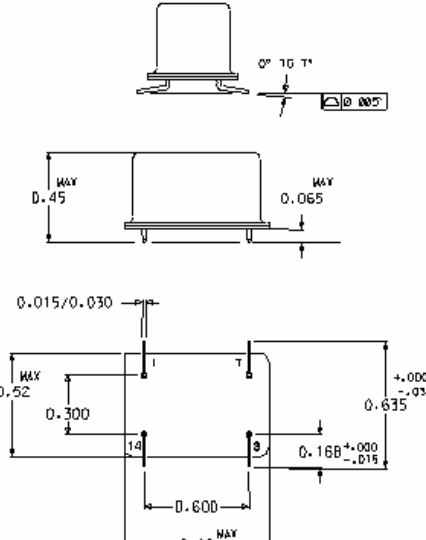
Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	± 8.0	±12.0	± 20.0	ppm	Standard Version
Linearity			10	%	
Tuning Slope	Positive				
Control Voltage Range	0.3	1.65	3.0	VDC	with Vs=3.3VDC
	0.5	2.5	4.5	VDC	with Vs=5.0VDC
Freq. control input impedance	10			kΩ	

Additional parameters

Parameter	Min	Typ	Max.	Units	Condition	
Phase Noise ³		-90		dBc/Hz	10 Hz	@40 MHz
		-120		dBc/Hz	100 Hz	
		-140		dBc/Hz	1 kHz	
		-150		dBc/Hz	10 kHz	
Weight			6	g		
Processing & Packing	Handling & processing note					

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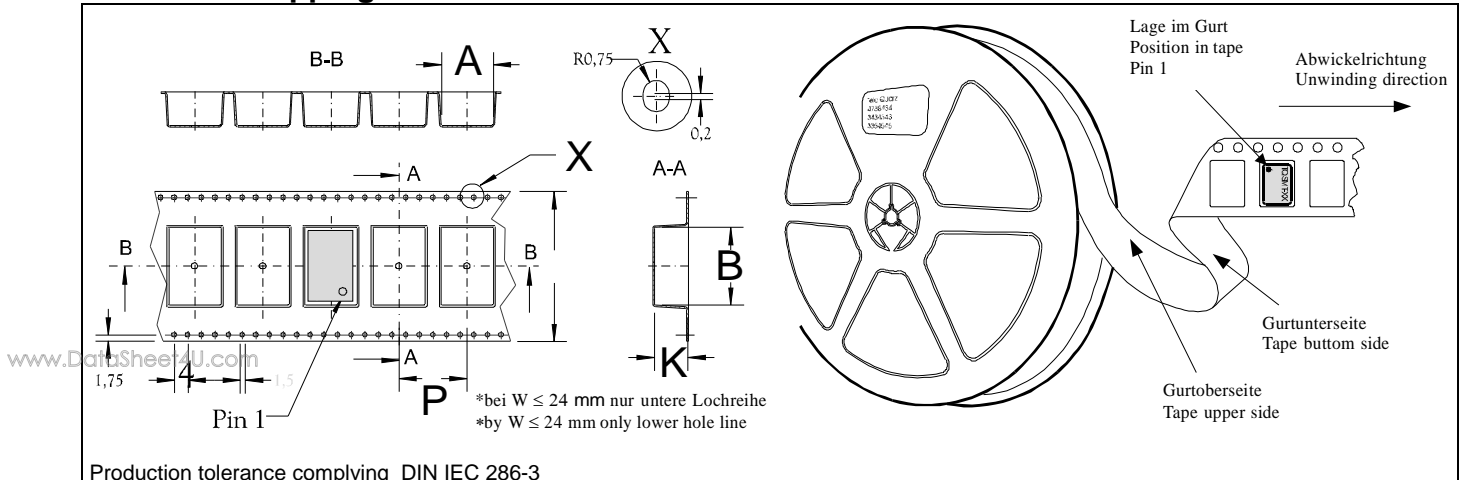
Enclosures

Type G125			Type G175			Type C		
Package Codes:								
Code	Height "H"	Pin Length "L"	Code	Height "H"	Pin Length "L"	Code	Height "H"	Pin Length "L"
A1	7.5	5.85	B1	9.4	NA	C1	0.45	NA
A2	8.0	5.85						
A3	10.1	5.85						
 <p>G 125 H = 7,5max.;</p> <p>Dimensions: mm</p>			 <p>G 175 H = 9,4; G175 Standard</p> <p>Dimensions: mm</p>			 <p>Dimensions: inches</p>		
<p>Pin Connections</p> <ul style="list-style-type: none"> 1 Electronic Frequency Control Input (EFC) 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs) <p>Outline Drawing: G125</p>			<p>Pin Connections</p> <ul style="list-style-type: none"> 1 Electronic Frequency Control Input (EFC) 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs) <p>Outline Drawing: G175</p>			<p>Pin Connections</p> <ul style="list-style-type: none"> 1 Electronic Frequency Control Input (EFC) 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs) <p>Outline Drawing: VD-XXXXX</p>		
<p>Marking</p> <p>C2400xx-xxxx Frequency * C AYYWW</p>								

Absolute Maximum Ratings

Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			6.0	V	
Control Voltage	0		Vs	V	
Maximum output load @ CMOS			50	pF	
Operable temperature range	-40		+85	°C	
Storage temperature range	-55		+125	°C	

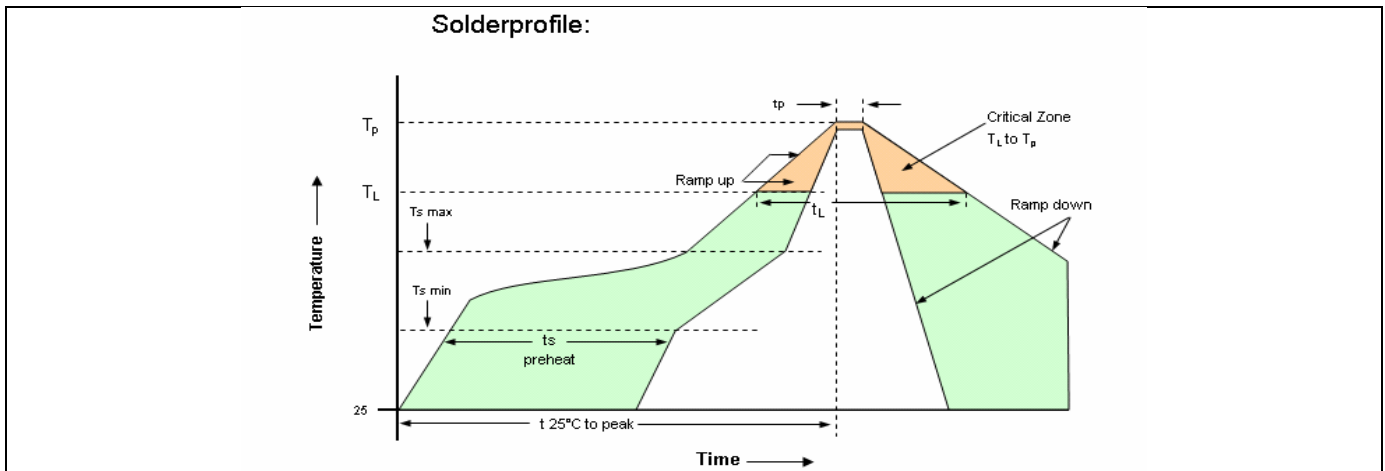
Standard Shipping Method



Production tolerance complying DIN IEC 286-3

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
G175	44	50	300	20

Recommended Reflow Profile



Profile Feature	Pb-Free Assembly /Sn-Pb Assembly	Profile Feature	Pb-Free Assembly /Sn-Pb Assembly
Average ramp-up rate (T_L to T_p)	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min $T_{s_{min}}$ -Temperature Min $T_{s_{max}}$ -Time (min to max) (t_s)	150°C 200°C 60-180 seconds	Time maintained above - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds
$T_{s_{max}}$ to T_L - Ramp-up Rate	3°C/second max.		
Time maintained above - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds	Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Peak Temperature (T_p)	max 260°C	Ramp-down Rate	6°C/second max.

Note: All temperatures refer to topside of the package, measured on the package body surface.

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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
	C2400					
<i>Example:</i>	<i>C2400</i>	<i>D256</i>	<i>SV033</i>	<i>RFC</i>	<i>A1</i>	<i>20.48 MHz</i>

Step 2	The factory representative will then respond with a Vectron Model Number in the following Configuration:			
	Model	Package Code	Dash	Dash Number
	C2400	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

Typical P/N = C2400A1-0001

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.