

Typical Applications

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

Previous Vectron Model Numbers

Frequency Range

Standard Frequencies

Features

EFC Standard
 Hermetic
 Wide Frequency Range

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

10 MHz – 200 MHz

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 V _S ± 5% Load ± 10%	
vs. supply voltage change	- 0.2		+0.2	ppm		
vs. load change	- 0.2		+0.2	ppm		
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 50 18 50	mA mA mA mA	@ +25°C & 3.3VDC & clipped sinewave @ +25°C & 3.3VDC & CMOS @ +25°C & 5.0VDC & clipped sinewave @ +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 V _S = 5.0V and 15pF load with V _S = 3.3V and 15pF load with V _S = 5.0V and 15pF load with V _S = 3.3V and 15pF load	
Signal Level (Vol)			0.5	VDC		
			0.3	VDC		
Signal Level (Voh)	4.5			VDC		
	3.0			VDC		
Rise and Fall time			5	ns	@ (Voh-Vol)/2	
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	

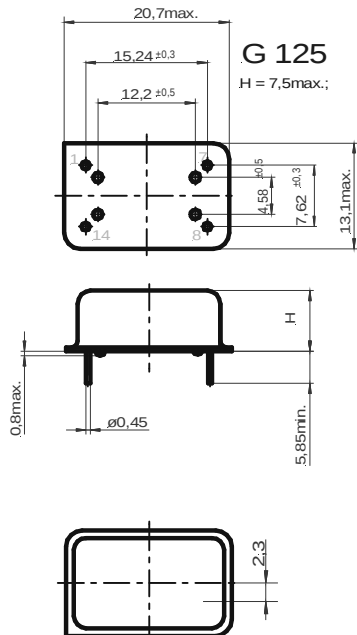
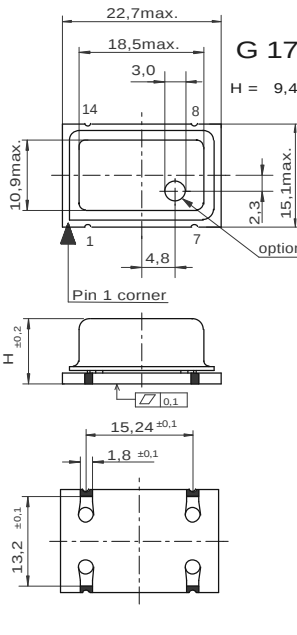
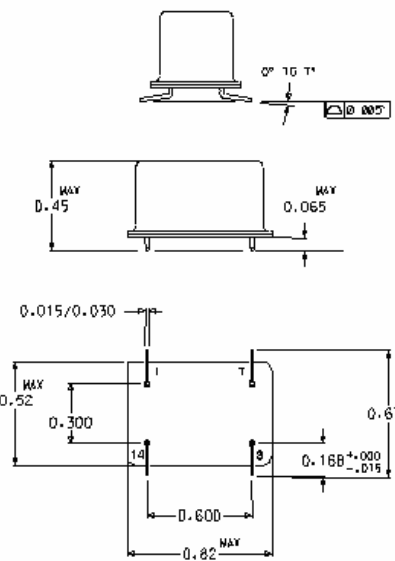
Additional parameters

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

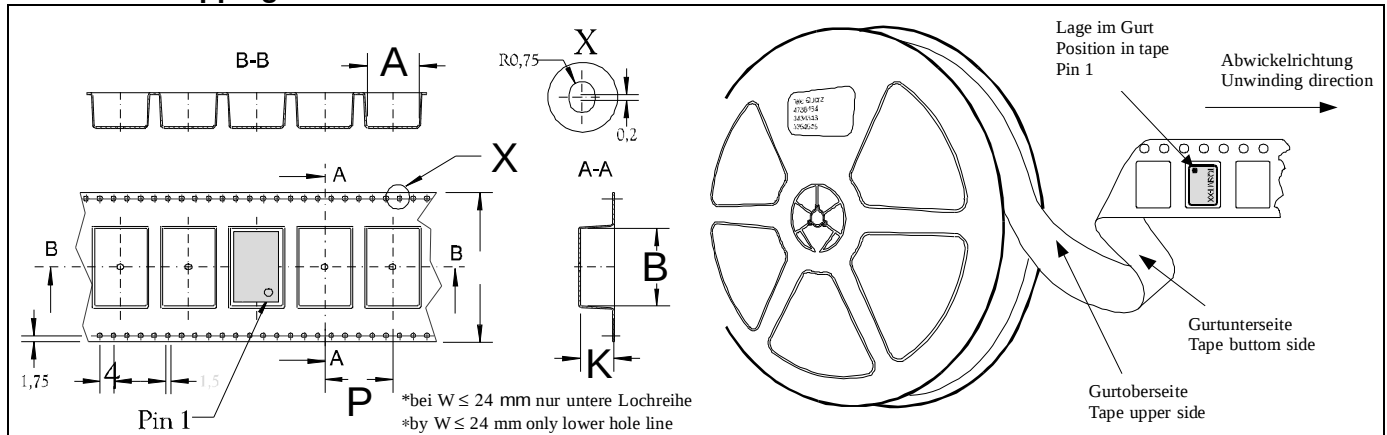
Absolute Maximum Ratings

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	

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						
 G 125 H = 7,5max.; Dimensions: mm			 G 175 H = 9,4; G175 Standard Dimensions: mm			 Dimensions: inches		
Pin Connections			Pin Connections			Pin Connections		
1 Electronic Frequency Control Input (EFC) 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs)			1 Electronic Frequency Control Input (EFC) 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs)			1 Electronic Frequency Control Input (EFC) 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs)		
Outline Drawing: G125			Outline Drawing: G175			Outline Drawing: VD-XXXXX		
Marking								
C2400xx-xxxx Frequency * C AYYWW								

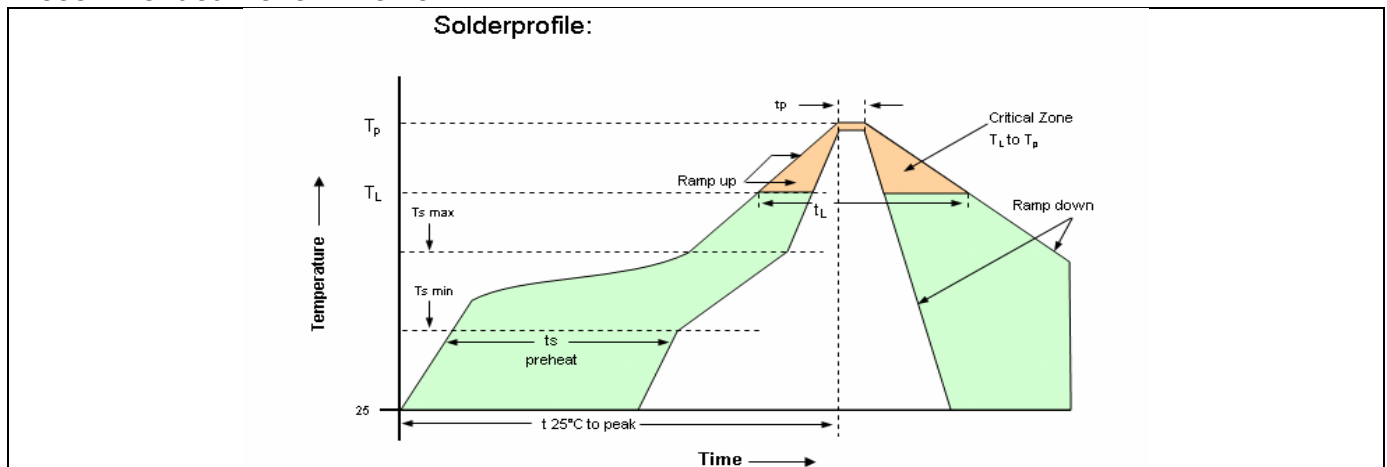
Standard Shipping Method



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.

How to order this product:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency
C2400	F206	SV033	RFC	A1	10MHz

Vs.operat. Temp. Range:

F206	±2.0ppm	-40 ... +85°C
F106	±1.0ppm	-40 ... +85°C
D206	±2.0ppm	-20 ... +70°C
D106	±1.0ppm	-20 ... +70°C
B106	±1.0ppm	0 ... +50°C
B507	±0.5ppm	0 ... +50°C

Supply:

SV033: 3.3V
SV050: 5V

Signal:

RFH: HCMOS
RFC: clipped Sinewave

Enclosure:

A1: H: 7.5 L: 5.85
A2: H: 8.0 L: 5.85
A3: H: 10.1 L: 5.85
B1: H: 9.4 L: NA
C1: H: 0.45 L: NA

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.
Contact factory for availability.
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