

Helping Customers Innovate, Improve & Grow



Features

Reflow Process Compatible
Surface Mount Package
AT-Cut Crystal
SONET Minimum Clock Specification
Low Phase Noise
Tight Tolerances

Typical Applications

Base Stations
Test Equipment
Synthesizers

Previous Vectron Model Numbers

C1260

Frequency Range

1 MHz – 175 MHz

Standard Frequencies

17.408; 24.705; 30.720; 32.768; 34.368; 50; 76.8 MHz
77.76; 100; 125; 150; 155.52; 156.25; 175 MHz

Frequency stabilities¹ [Standard]

Parameter	Min	Typ	Max	Units	Operating temperature range
vs. operating temperature range (Referenced to +25°C)	-10.0		+10.0	ppm	-20 ... +70°C
Parameter	Min	Typ	Max.	Units	Condition
Initial tolerance	-5.0		+5.0	ppm	V _s ± 5% Load ± 5%
vs. supply voltage change	-1.0		+1.0	ppm	
vs. load change	-1.0		+1.0	ppm	
vs. aging /1. Year	-3.0		+3.0	ppm	
vs. aging / year (following Years)	-1.0		+1.0	ppm	

Frequency stabilities¹ [SC Cut Crystal-Option-10 to 52 MHz]

Parameter	Min	Typ	Max	Units	Operating temperature range
vs. operating temperature range					-20 ... +70°C
Parameter	Min	Typ	Max.	Units	Condition
overall tolerance	-20.0		+20.0	ppm	(15 Years aging, temp, initial, supply, load)

Supply Voltage (Vs)

Parameter	Min	Typ	Max	Units	Condition
Supply voltage (Vs)	4.75	5.0	5.25	VDC	@ HCMOS @ PECL
Current consumption			40	mA	
Current consumption			90	mA	
Supply voltage (Vs)	3.135	3.3	3.465	VDC	@ LVHCMOS @ LVPECL @ LVDS
Current consumption			30	mA	
Current consumption			80	mA	
Current consumption			25	mA	

RF Output

Parameter	Min	Typ	Max	Units	Condition
Signal	HCMOS				@ 15 pF 10 to 90 % @ Vs/2
Load		15.0		pF	
Rise and Fall time			5	ns	
Duty cycle	40		60	%	
Signal	PECL				Vs - 2V 20 to 80 %
Load		50		Ω	
Rise and Fall time			1	ns	
Duty cycle	45		55	%	
Signal	LVDS				10 to 90 %
Load		100		Ω	
Rise and Fall time			1	ns	
Duty cycle	40		60	%	

Additional Parameters

Parameter	Min	Typ	Max	Units	Condition		
Phase Noise		-85		dBc/Hz	10	Hz	@49,408 MHz
		-120		dBc/Hz	100	Hz	HCMOS
		-145		dBc/Hz	1	kHz	3,3V
		-155		dBc/Hz	10	kHz	
		-160		dBc/Hz	100	kHz	
Jitter		0,2		ps RMS	@ 12 kHz to 20 MHz		

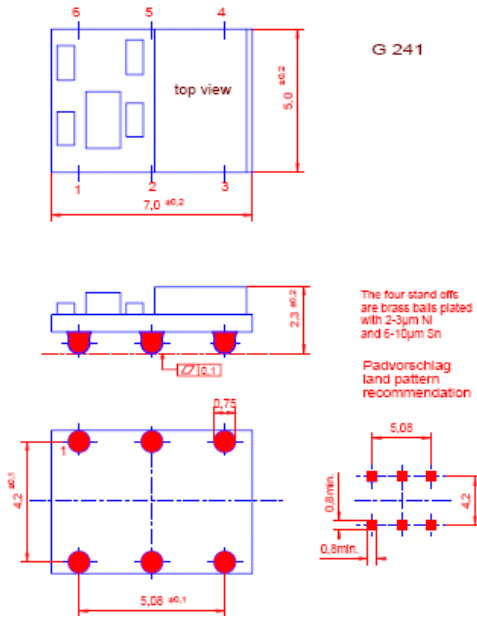
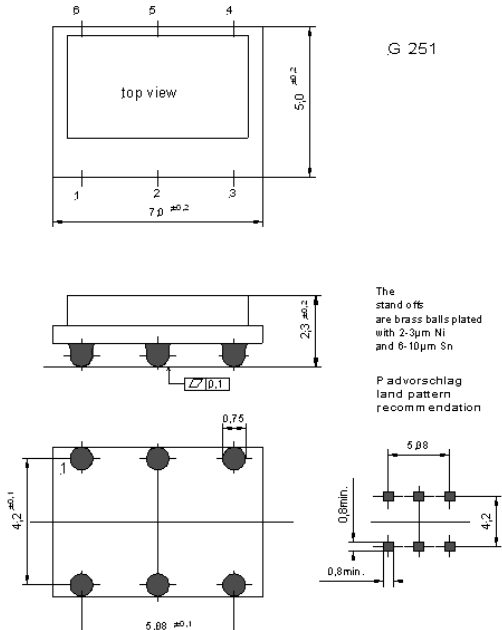
Additional Parameters

Parameter	Min	Typ	Max	Units	Condition	
Phase Noise		-80		dBc/Hz	10 Hz	@89,6 MHz
		-108		dBc/Hz	100 Hz	PECL
		-134		dBc/Hz	1 kHz	3,3V
		-140		dBc/Hz	10 kHz	
		-141		dBc/Hz	100 kHz	
Jitter		0,6		ps RMS	@ 12 kHz to 20 MHz	
Phase Noise		-80		dBc/Hz	10 Hz	@125 MHz
		-115		dBc/Hz	100 Hz	PECL
		-135		dBc/Hz	1 kHz	3,3V
		-141		dBc/Hz	10 kHz	
		-141		dBc/Hz	100 kHz	
Jitter		0,6		ps RMS	@ 12 kHz to 20 MHz	
Weight			2	g		
Processing & Packing	handling&processing note					

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Units	Condition
Supply voltage (Vs)			7	V	
Operable temperature range	-30		+80	°C	
Storage temperature range	-40		+90	°C	

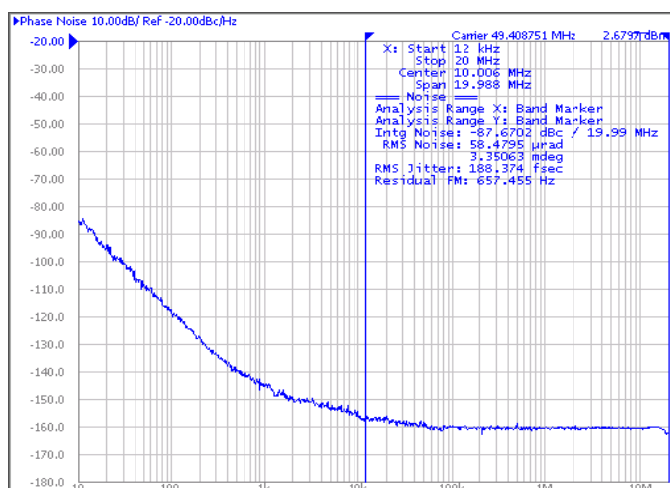
Enclosure

Type G241 < 53 MHz	Type G251 > 1 MHz
Height "H" 2,3 mm	Height "H" 2,3 mm
 Dimensions: mm	 Dimensions: mm

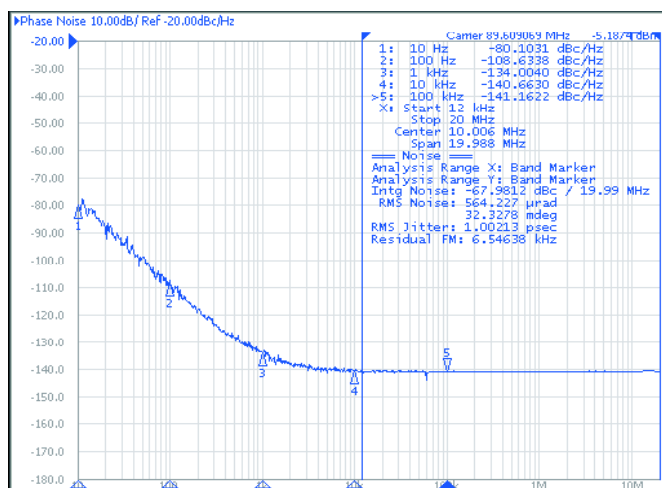
Pin Connections	Pin Connections				
1 N/C 2 N/C / Enable (optional) 3 Ground 4 RF Output 5 N/C 6 Supply Voltage Input (Vs)	1 N/C 2 N/C / Enable (optional) 3 Ground 4 RF Output 5 Complementary RF Output / (N/C: HCMOS only) 6 Supply Voltage Input (Vs)				
	true table	HCMOS		LVPECL + LVDS	
	Pin 2	Pin 4	Pin 5	Pin 4	Pin 5
	High	Data	N/C	No Data	No Data
	Open	Data	N/C	Data	compl. Data
	Low	High Tristate	N/C	Data	compl. Data
Marking					
PX-701 Frequency • AYYWW					

Typical Phase Noise and Jitter

49,408 MHz; HCMOS output



89,6 MHz; PECL output



Frequency range [Hz]

12kHz to 20MHz

Jitter [ps rms]

0.188ps

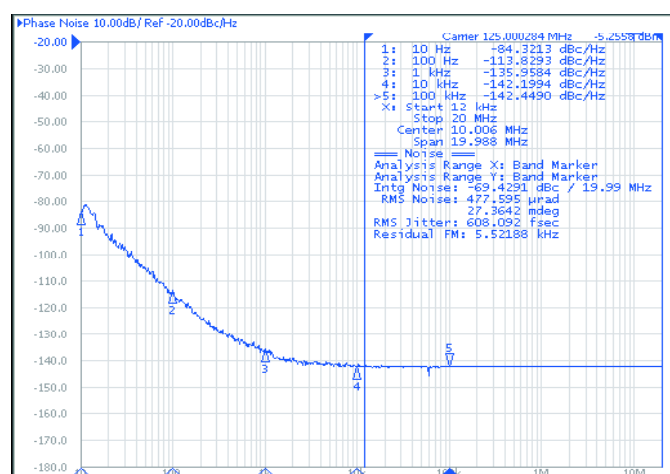
Frequency range [Hz]

12kHz to 20MHz

Jitter [ps rms]

1.002ps

125 MHz; PECL output



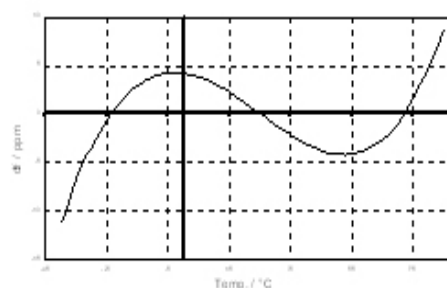
Frequency range [Hz]

12kHz to 20MHz

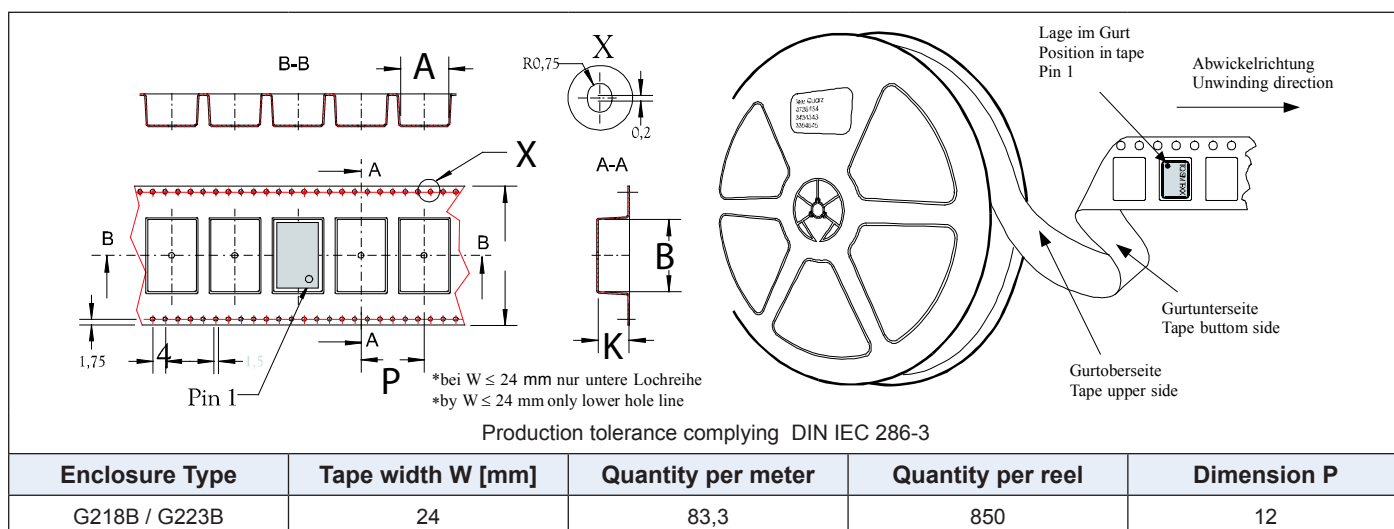
Jitter [ps rms]

0.608ps

Typical frequency stability vs temperature

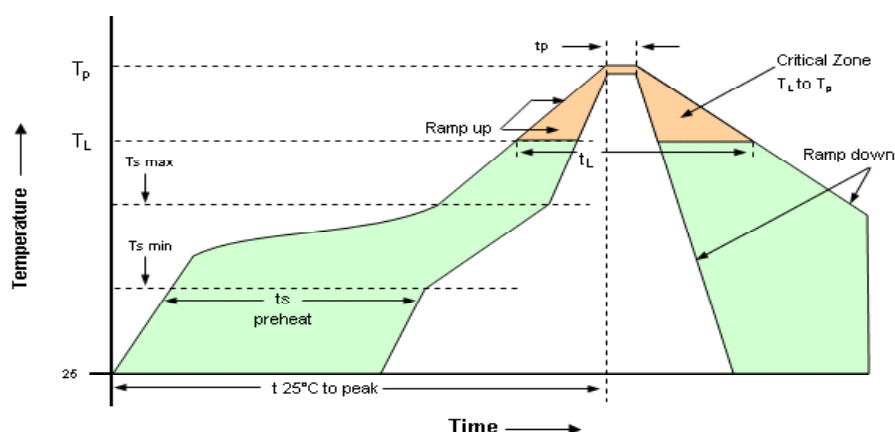


Standard Shipping Methode



Recommended Reflow Profile

Solderprofile:



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 _{smin} -Temperature Min T _{smax} -Time (min to max) (ts)	150°C 200°C 60-180 seconds	Time maintained above -Temperature (T _L) -Time (t _L)	217°C 60-150 seconds
T _{smax} 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.
SMD oscillators must be on the top side of the PCB during the reflow process.

How to order this product:

Use this worksheet to forward the following information to your factory representative :

Model	Height	-	Supply Voltage Code	RF Output Code	Temperature Range	-	Stability	X	-	Frequency
PX-701	0	-	D	A	J	-	105	X	-	10MHz

Height: _____
0: 2,3 mm

Supply Voltage Code:

E: 3,3 V

D: 5 V

RF Output Code:

A: HCMOS

C: PECL

D: LVDS

Temperature Range/ Stability Code:

J-105: -20...+70°C ±10ppm

J-205: -20...+70°C ±20ppm over all

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.