VECTRON INTERNATIONAL
A DOVER COMPANY

PX-701
Clock Oscillator

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 stabilities[1] [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	
vs. supply voltage change	-1.0		+1.0	ppm	V_S ± 5%
vs. load change	-1.0		+1.0	ppm	Load ± 5%
vs. aging /1. Year	-3.0		+3.0	ppm	
vs. aging / year (followingYears)	-1.0		+1.0	ppm	

Frequency stabilities[1] [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	
Current consumption			40	mA	@ HCMOS
Current consumption			90	mA	@ PECL
Supply voltage (Vs)	3.135	3.3	3.465	VDC	
Current consumption			30	mA	@ LVHCMOS
Current consumption			80	mA	@ LVPECL
Current consumption			25	mA	@ LVDS

RF Output

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

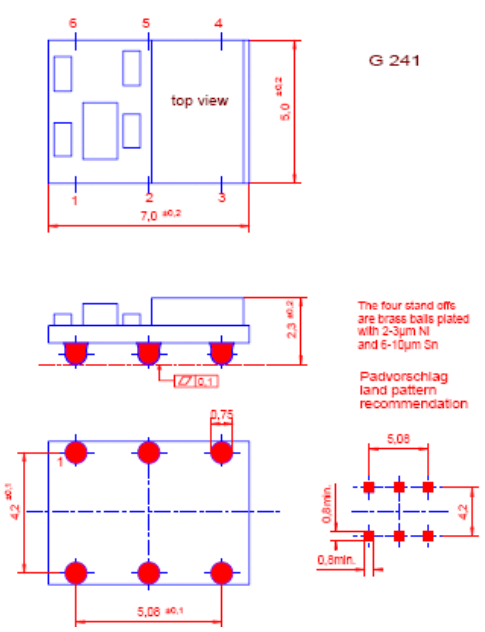
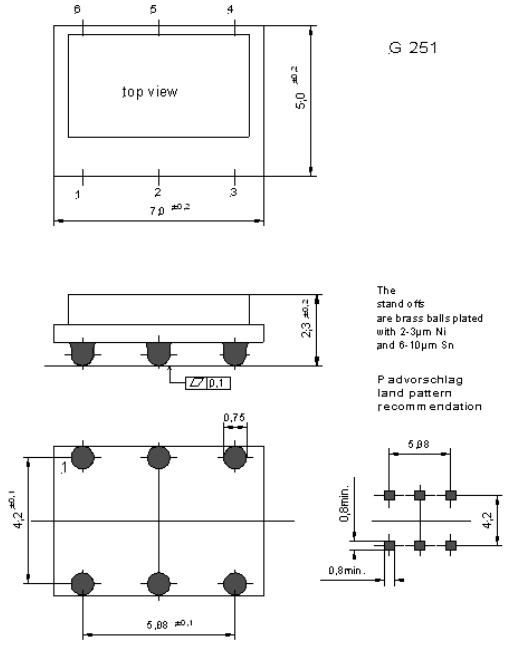
Additional Parameters

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	1 N/C
2 N/C / Enable (optional)	2 N/C / Enable (optional)
3 Ground	3 Ground
4 RF Output	4 RF Output
5 N/C	5 Complementary RF Output / (N/C: HCMOS only)
6 Supply Voltage Input (Vs)	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

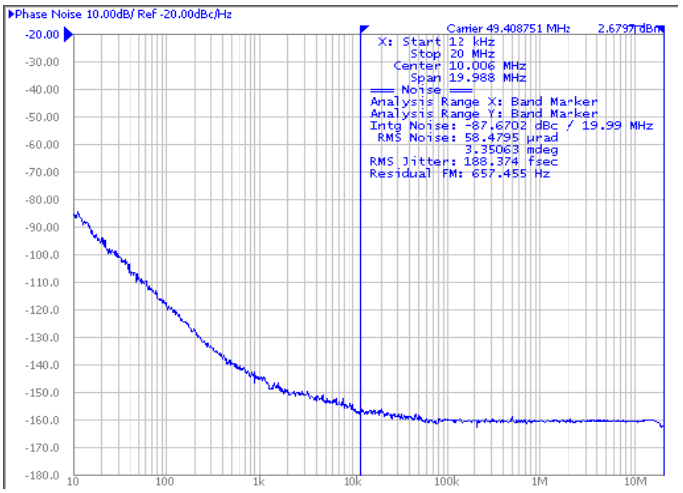
PX-701

Frequency

● AYYWW

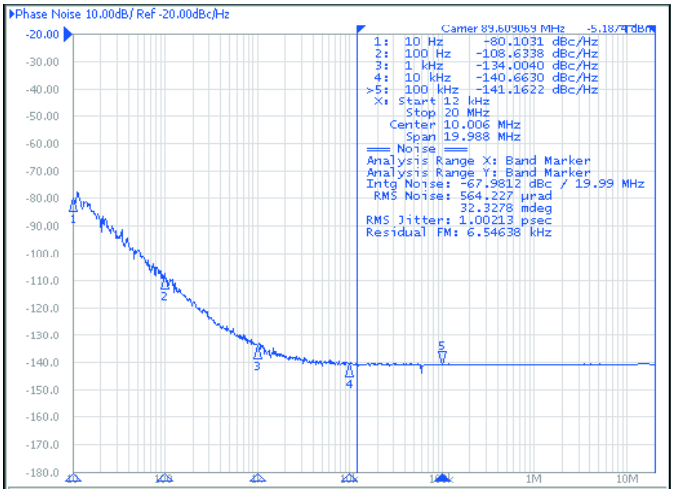
Typical Phase Noise and Jitter

49,408 MHz; HCMOS output



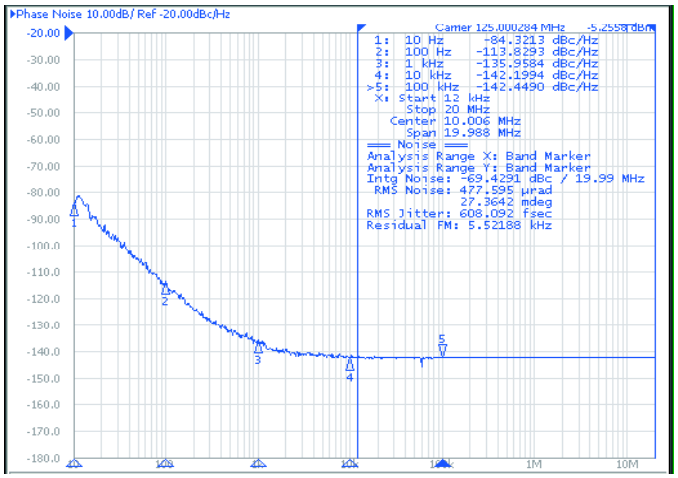
Frequency range [Hz]	Jitter [ps rms]
12kHz to 20MHz	0.188ps

89,6 MHz; PECL output



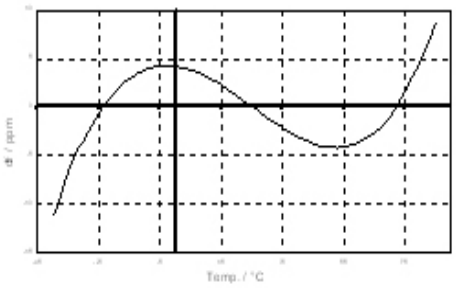
Frequency range [Hz]	Jitter [ps rms]
12kHz to 20MHz	1.002ps

125 MHz; PECL output

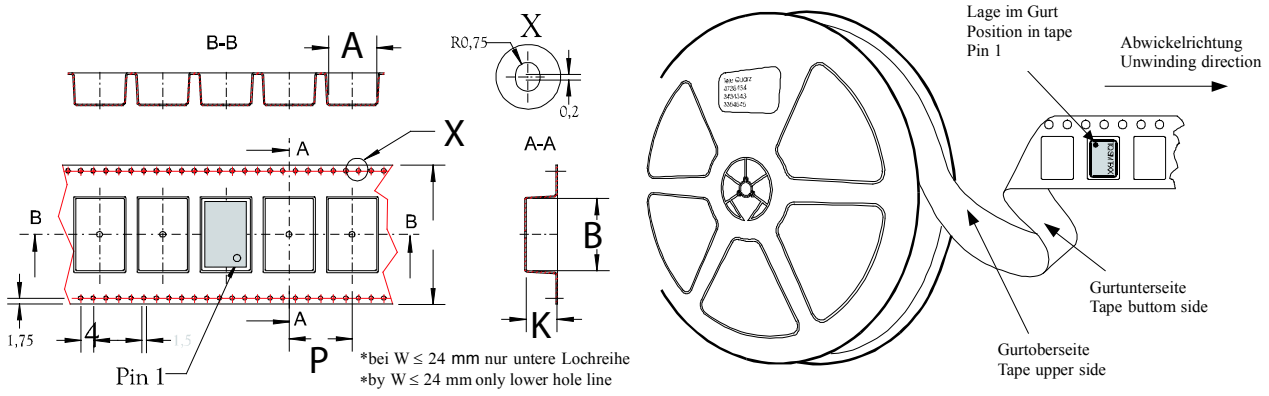


Frequency range [Hz]	Jitter [ps rms]
12kHz to 20MHz	0.608ps

Typical frequency stability vs temperature



Standard Shipping Methode

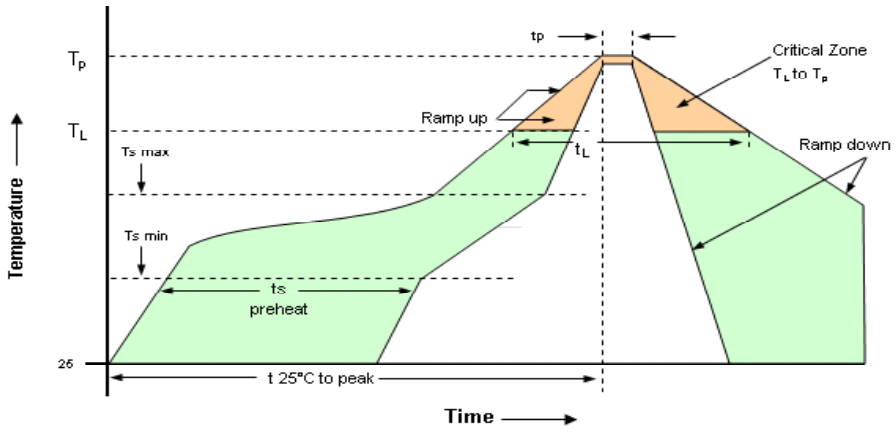


Production tolerance complying DIN IEC 286-3

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
G218B / G223B	24	83,3	850	12

Recommanded 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 Ts_{max} -Time (min to max) (ts)	150°C 200°C 60-180 seconds	Time maintainted 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 maintainted 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 pocess.			

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.