VX-701

Voltage Controlled Crystal Oscillator

Features

- AT-Cut Crystal
- Surface Mount FR4 based package
- Reflow Process Compatible
- Low Phase Noise
- Tight Stabilities
- Frequency Range 1 - 700MHz
- Standard Frequencies 16,384; 30,72; 32,768; 38,88; 52; 77,76;
- 100; 122,88; 153,6; 155,52; 175; 184,32MHz
- Previous Model Number: C5260

Applications

- Base Stations
- Test Equipment
- Synthesizers
- Switching

Performance Specifications

Frequency Stabilities[1]					
Parameter	Min	Typical	Max	Units	Condition
vs. operating temperature range (referenced to +25°C)	-15		+15	ppm	-20 to +70°C
Initial tolerance vs. supply voltage change vs. load change vs. aging / 1 Year vs. aging (following years)	-10 -3 -1 -3 -1		+10 +3 +1 +3 +1	ppm ppm ppm ppm ppm	@Vc=Vs/2 V_S ±5% Load ±10%
vs. operating temperature range (referenced to +25°C)	-30		+30	ppm	-40 to +85°C
Initial tolerance vs. supply voltage change vs. load change vs. aging / 1 Year vs. aging (following years)	-15 -3 -2 -3 -1		+15 +3 +2 +3 +1	ppm ppm ppm ppm ppm	@Vc=Vs/2 V_S ±5% Load ±10%

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Performance Specifications

Parameter	Min	Typical	Max	Units	Condition	
Supply Voltage (Vs)						
Supply voltage (standard)	3.135	3.3	3.465	VDC		Options
Current consumption			40	mA	@ HCMOS	
Current consumption			90	mA	@ PECL, LVDS	
Supply voltage	4.75	5	5.25	VDC		
Current consumption			30	mA	@ HCMOS	
Current consumption			80	mA	@ PECL, LVDS	
RF Output						
Signal	HCMOS					Options
Load		15		pF		
Rise and Fall time			5	ns	@ 15 pF 10 to 90%	
Duty cycle	40		60	%	@ Vs / 2	
Signal	PECL					
Load		50		Ω		
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	%		
Frequency Tuning (EFC)						
Tuning Range	±75.0	±140	±200.0	ppm		
Linearity	10 %					
Tuning Slope	Positive					
Control Voltage Range	0 0.5	1.65 2.5	3.3 4.5	VDC VDC	with Vs = 3.3V with Vs = 5V	
Frequency Control Input Impedance	10			kΩ		
Additional Parameters						
Phase Noise Jitter		-85 -115 -135 -150 -153 0.2		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz ps RMS	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz @ 12kHz .. 20MHz	@52MHz HCMOS 3.3V
Phase Noise Jitter		-80 -105 -135 -145 -145 0.6		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz ps RMS	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz @ 12kHz .. 20MHz	@ 155.52 MHz PECL 3.3V
Subharmonics			-40	dBc	For >160 MHz only	
Weight			2.0 g			
Processing & Packing	Handling & Processing Note					
Absolute Maximum Ratings						
Supply voltage (Vs)			6.0	V		
Operable Temperature Range	-40		+85	°C		
Storage Temperature Range	-55		+125	°C		

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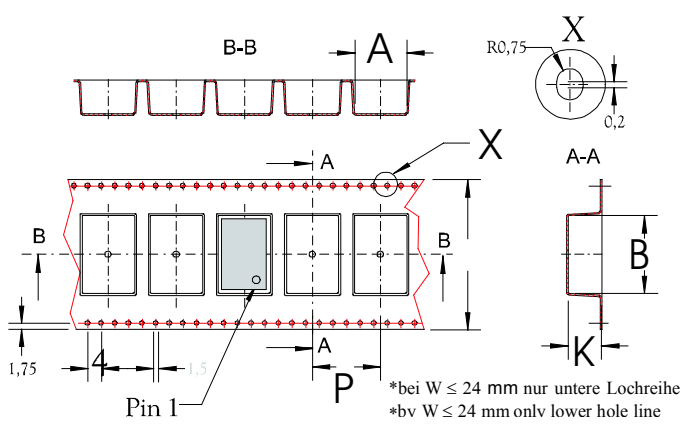
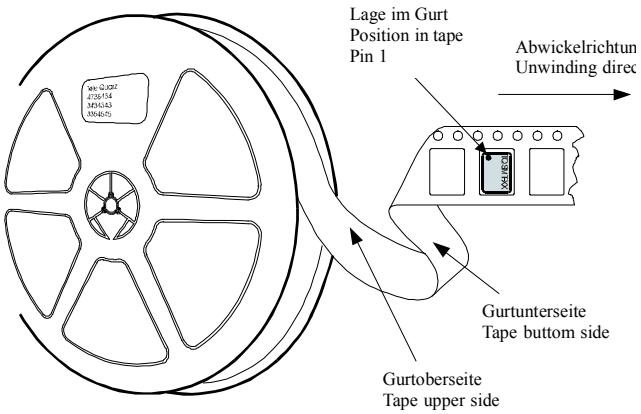
Standard Shipping Method



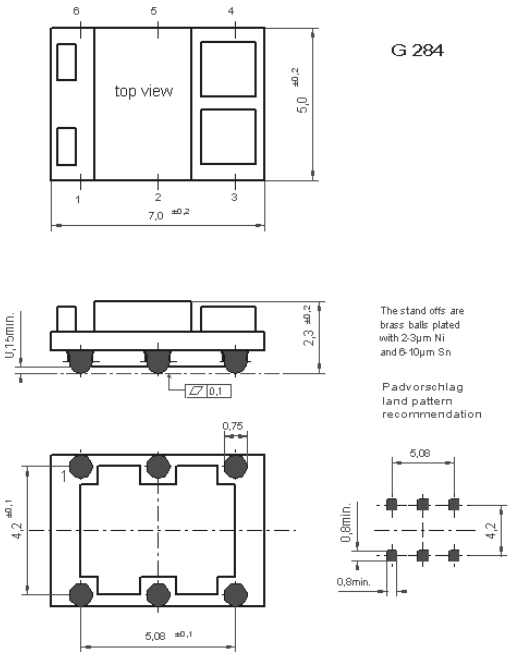


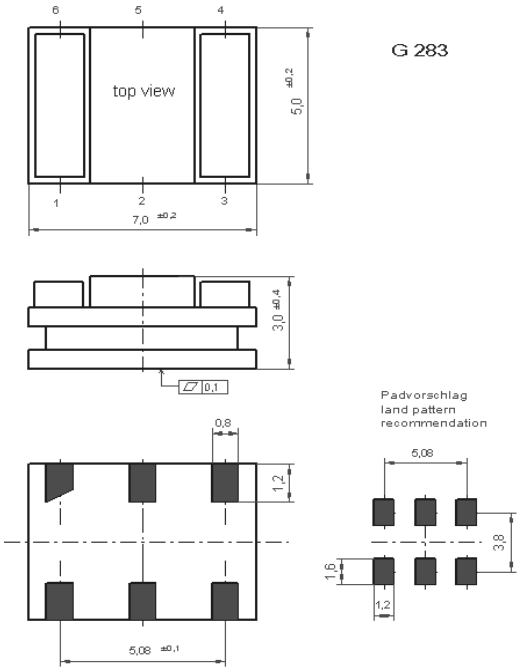
Enclosure Type	Tape Width W (mm)	Quantity per meter	Quantity per reel	Dimension P
G284/G283	12	150.	750.	8

Enclosure

Package Codes		
Type	Height "H"	Pin Length "L"
G284	2.3	NA

Package Codes	
Type	Height "H"
G283	3.0





Pin Connections	
1	Control Voltage (Vc)
2	N.C. / Enable (Option)
3	Ground
4	RF Output
5	RF Output complementary (PECL / LVDS) N.C. (CMOS)
6	Supply Voltage Input (Vs)

Enable true table (optional)				
	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
VX-701-xxxx
Frequency
● AYYWW

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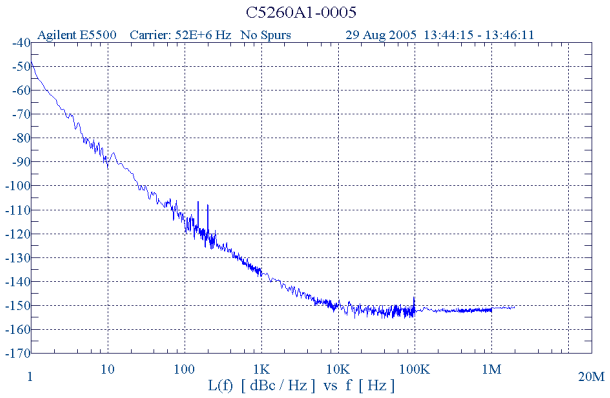
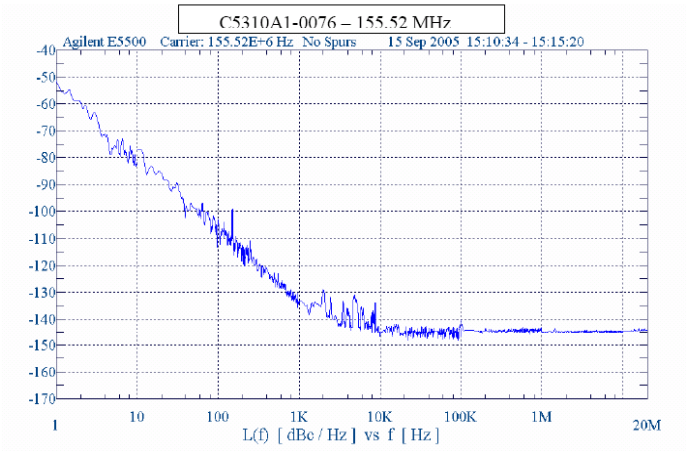
Standard Shipping Method

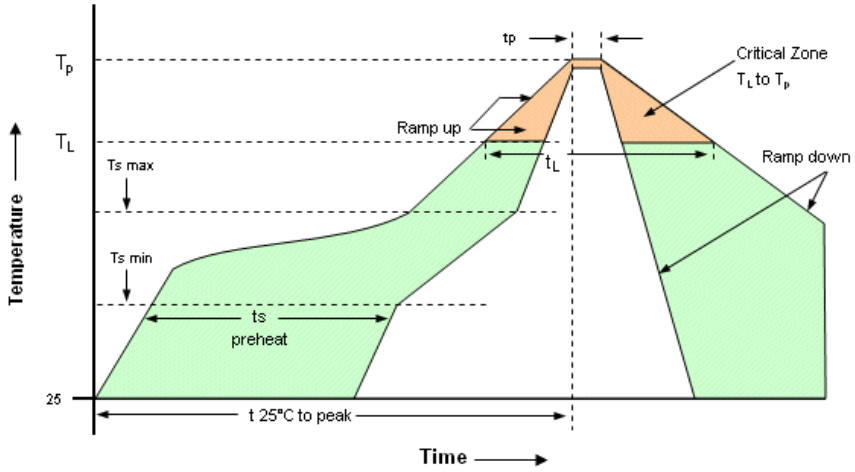
Phase Noise
VX-701 @ 52 MHz HCMOS



Phase Noise
VX-701 @ 155.52 MHz LVPECL



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_{Smin} -Temperature Min T_{Smax} -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
TSmax to TL -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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Ordering Information

VX-701 0 - E A J - 105 0 - 52M0000000

- **Model Code**
- **Height**
  - 0: 2.3mm (G284)
  - 1: 3.0 mm (G283)
- **Supply Voltage**
  - D: 5V
  - E: 3.3V
- **RF Output Code**
  - A: HCMOS
  - C: PECL
  - D: LVDS
- **Temperature Range**
  - E: -40°C to +85°C
  - J: -20°C to +70°C
- **Stability Code**
  - E-305: ±30ppm
  - J-105: ±15ppm
- **Enable**
  - 0: No Enable
  - 1: Enable
- **Frequency**

Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other 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.

For Additional Information, Please Contact

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Rev: 10/2013