C1310 PXO

Typical Applications
Base Stations
Test Equipment
Synthesizers

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



Frequency range
1 MHz – 700 MHz

Standard frequencies
10; 20; 24.705; 30.720; 32.768; 50; 68.768; 76.8 MHz
77.76; 100; 125; 150; 155.52; 156.25; 175; 200 MHz
250; 280; 312.5; 340; 400; 622,08 MHz

Frequency stabilities[1] [Standard]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code[5]
vs. operating temperature range (Referenced to +25°C)	-10.0		+10.0	ppm	-20 … +70°C	D105
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] [meets SONET Minimum Clock Specification - Option]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code[5]
vs. operating temperature range					-20 … +70°C	D205
Parameter	**Min**	**Typ**	**Max.**	**Units**	**Condition**	
overall tolerance	-20.0		+20.0	ppm	(15 Years aging, temp, initial, supply, load)	

Supply voltage

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code[5]
Supply voltage (Vs)	4.75	5.0	5.25	VDC		SV050
Current consumption			40	mA	@ HCMOS < 155 MHz	
Current consumption			90	mA	@ PECL < 155 MHz	
Supply voltage (Vs)	3.135	3.3	3.465	VDC		SV033
Current consumption			30	mA	@ LVHCMOS< 155 MHz	
Current consumption			80	mA	@ LVPECL< 155 MHz	
Current consumption			25	mA	@ LVDS< 155 MHz	

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RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code[5]
Signal		HCMOS				RFH
Load		15.0		pF		
Rise and Fall time			5	ns	@ 15 pF 10 to 90 %	
Duty cycle	40		60	%	@ Vs/2	
Signal		PECL				RFP
Load		50		Ω	Vs - 2V	
Rise and Fall time			1	ns	20 to 80 %	
Duty cycle	45		55	%		
Signal		LVDS				RFL
Load		100		Ω		
Rise and Fall time			1	ns	10 to 90 %	
Duty cycle	40		60	%		
Signal		Sinewave				RFS
Load		50		Ω		
Output Power	-3	0	3	dBm		

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	
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	
Phase Noise		-62		dBc/Hz	10 Hz	@400 MHz
		-93		dBc/Hz	100 Hz	PECL
		-124		dBc/Hz	1 kHz	3,3V
		-142		dBc/Hz	10 kHz	
		-143		dBc/Hz	100 kHz	
Jitter		0,2		ps RMS	@ 12 kHz to 20 MHz	
Weight			2	g		
Processing & Packing		handling&processing note				

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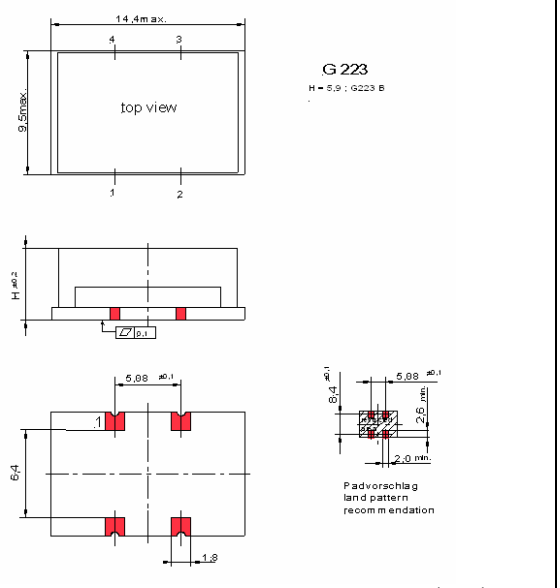
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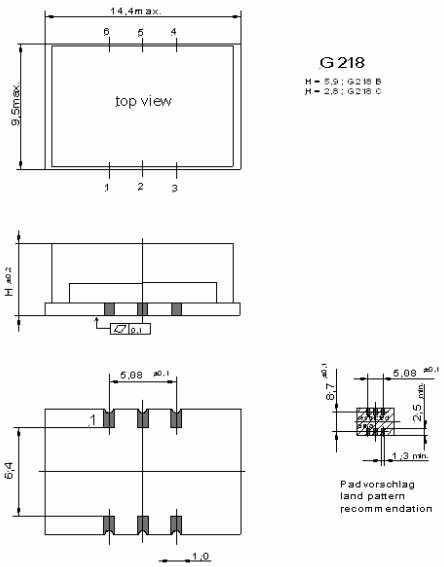
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Enclosures

Type G223A for HCMOS and LVHCMOS Version			Type G218B for HCMOS; PECL; LVPECL and LVDS Version		
Package Codes:					
Code A1	Height "H" 5,9	Pin Length "L" NA	Code B1	Height "H" 5,9	Pin Length "L" NA



Dimensions: mm



Dimensions: mm

Pin Connections	Pin Connections
1 NC / Enable (optional) 2 Ground (Case) 3 RF Output 4 Supply Voltage Input (Vs) Outline Drawing: G223B	1 N/C 2 N/C / Enable (optional) 3 Ground (Case) 4 RF Output 5 Complementary RF Output / (N/C: HCMOS only) 6 Supply Voltage Input (Vs) Outline Drawing: G218B

Enable 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

C1310A1-xxxx
frequency
* VI AYYWW

Absolute Maximum Ratings

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

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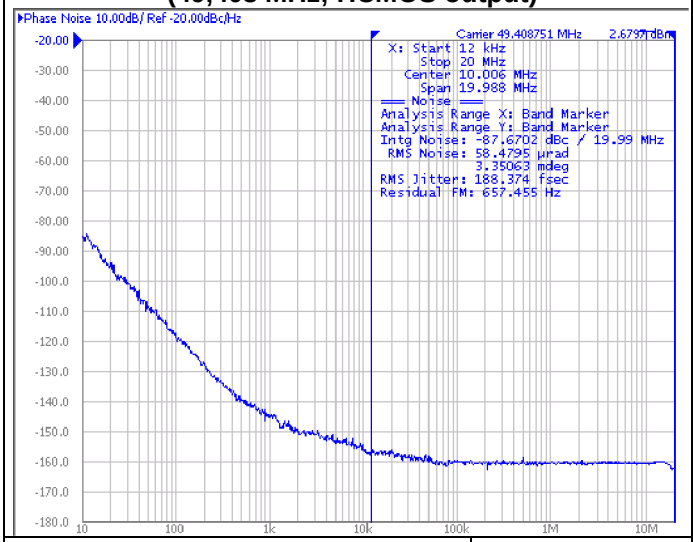
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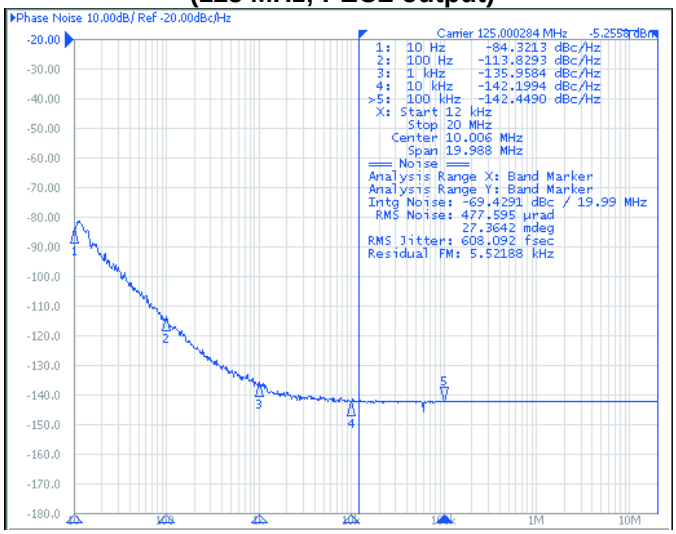
Typical Phase Noise and Jitter

(49,408 MHz; HCMOS output)



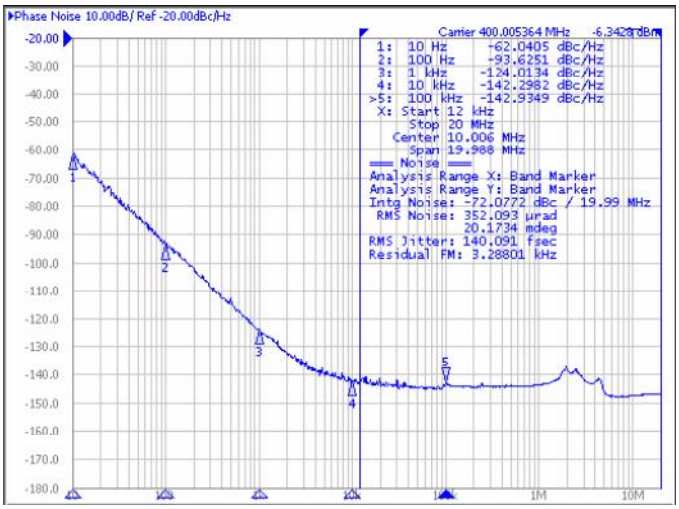
Frequency range [Hz]	Jitter [ps rms]
12kHz to 20MHz	0.188ps

(125 MHz; PECL output)



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

(400 MHz; PECL output)



Frequency range [Hz]	Jitter [ps rms]
12kHz to 20MHz	0.140ps

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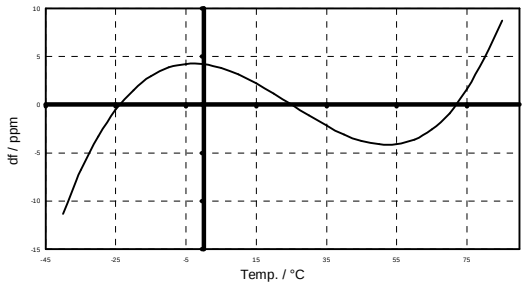
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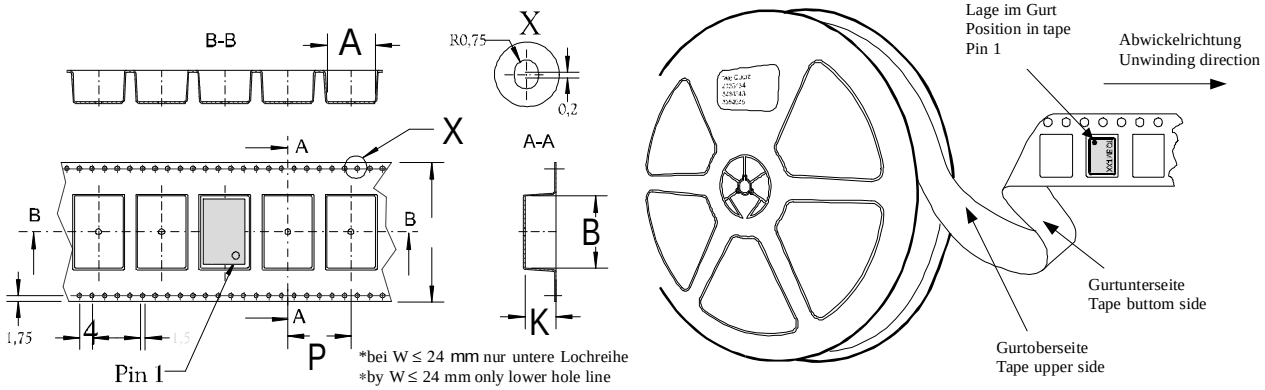
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Typical frequency stability vs temp



Standard Shipping Method

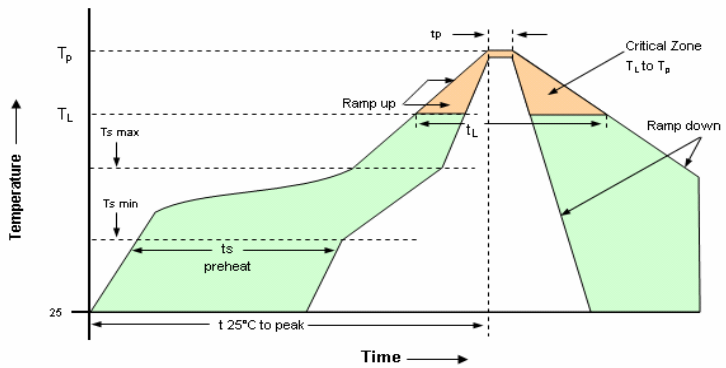


Production tolerance complying DIN IEC 286-3

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

Recommended Reflow Profile

Solderprofile:



Profile Feature	Pb-Free Assembly /Sn-Pb Assembly	Profile Feature	Pb-Free Assembly /Sn-Pb Assembly

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Average ramp-up rate (T_L to Tp)	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min Ts_{min}) -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
Ts_{max} 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 (tp)	20-40 seconds
Peak Temperature (Tp)	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.

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How to Order this Product:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency Control / Enable	Frequency
C1310	D105	SV050	RFH	A1		

vs.operat. temp. range:

D105: ±10ppm -20 … +70°C
D205: -20 … +70°C

Enclosures:

A1: G223B (4 pad)
B1: G218B (6 pad)

Signal:

RFH: HCMOS
RFP: PECL
RFL: LVDS
RFS: Sinewave

Supply:

SV050: 5V
SV033: 3.3V

Dimension: mm

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