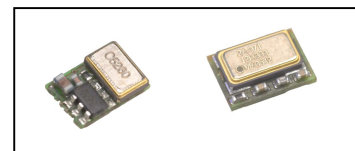


Typical Applications

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 – 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 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	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 [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	
Current consumption			90	mA	@ PECL	
Supply voltage (Vs)	3.135	3.3	3.465	VDC		SV033
Current consumption			30	mA	@ LVHCMOS	
Current consumption			80	mA	@ LVPECL	
Current consumption			25	mA	@ LVDS	

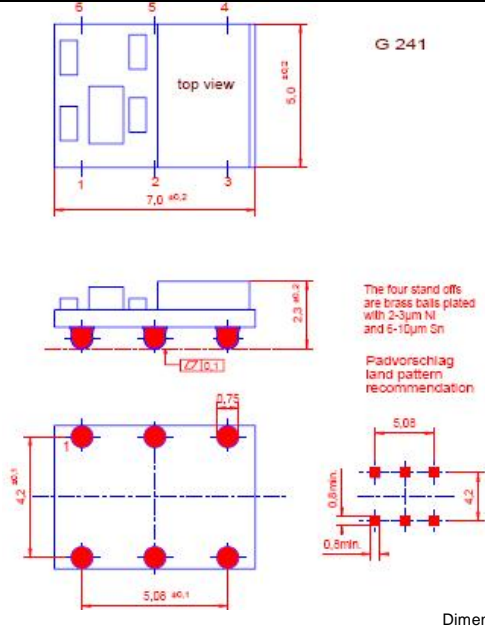
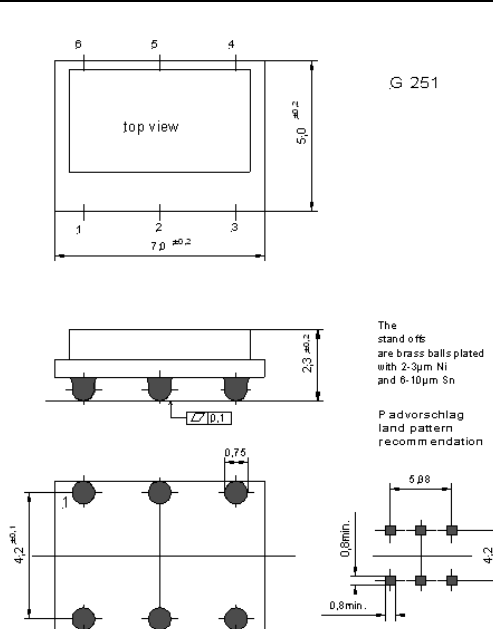
RF output

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

Enclosures

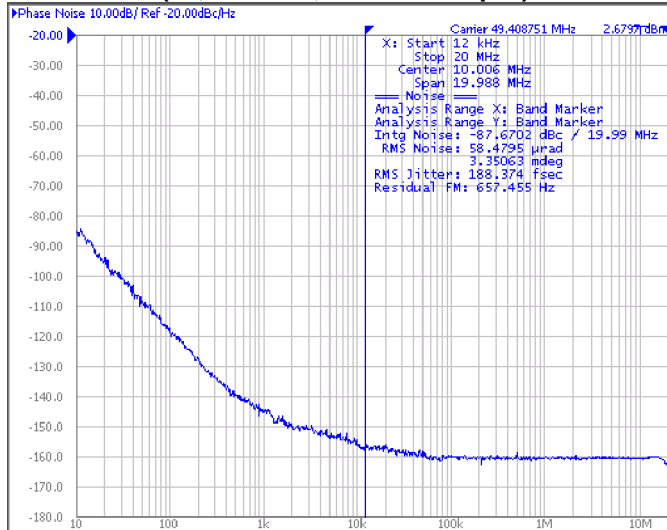
Type G241 < 53 MHz			Type G251 > 1 MHz		
Package Codes:					
Code A1	Height "H" 2,3 mm		Code B1	Height "H" 2,3 mm	
 <p style="text-align: right;">G 241</p> <p style="text-align: right;">top view</p> <p style="text-align: right;">Dimensions: mm</p>			 <p style="text-align: right;">G 251</p> <p style="text-align: right;">top view</p> <p style="text-align: right;">Dimensions: mm</p>		

Pin Connections		Pin Connections					
1 N/C	2 N/C / Enable (optional)	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							
1A1-xxx frequency * VI AYYWW							

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	

Typical Phase Noise and Jitter (49,408 MHz; HCMOS output)



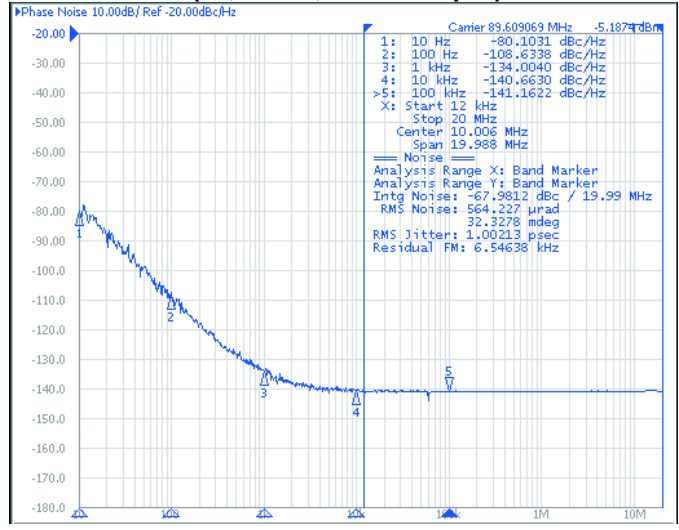
Frequency range [Hz]

12kHz to 20MHz

Jitter [ps rms]

0.188ps

(89,6 MHz; PECL output)



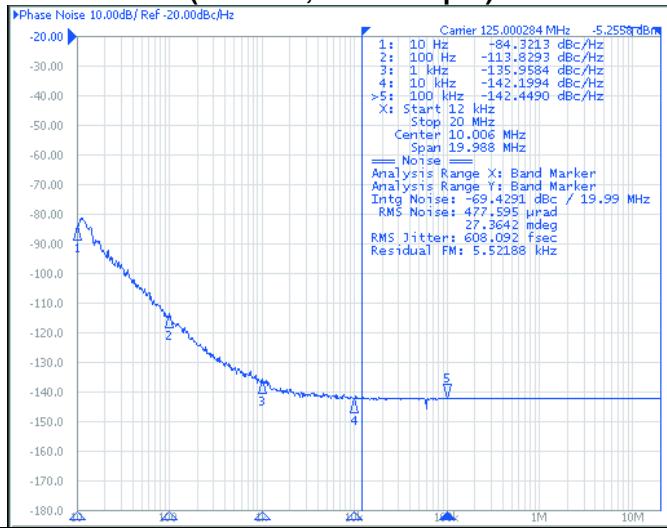
Frequency range [Hz]

12kHz to 20MHz

Jitter [ps rms]

1.002ps

(125 MHz; PECL output)



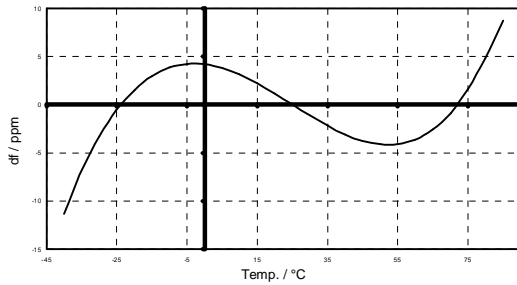
Frequency range [Hz]

12kHz to 20MHz

Jitter [ps rms]

0.608ps

Typical frequency stability vs temp



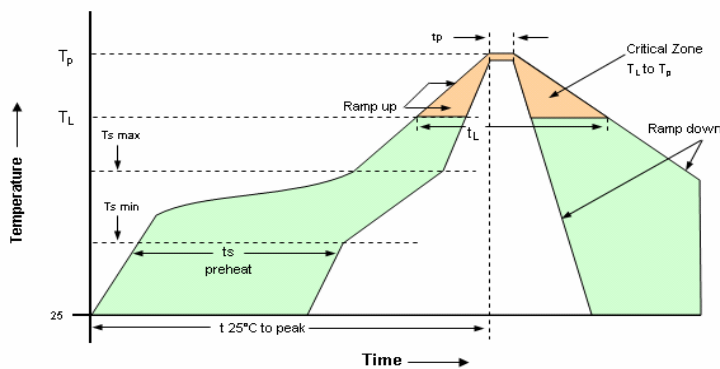
Standard Shipping Method

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

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) (ts)	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.
SMD oscillators must be on the top side of the PCB during the reflow process.

How to Order this Product:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency Control / Enable	Frequency
C1260	D105	SV050	RFH	A1		

vs.operat. temp. range:

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

Enclosures:

A1: G241
B1: G251

Signal:

RFH: HCMOS
RFP: PECL
RFL: LVDS

Supply:

SV050: 5V
SV033: 3.3V

Dimension: mm