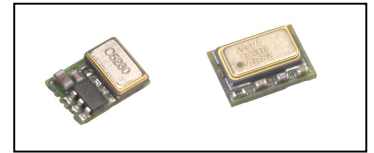


Typical Applications

Base Stations
 Test Equipment
 Switching
 Portable Equipment

Features

Surface Mount FR4 based Package
 Reflow Process Compatible
 AT-Cut Crystal
 Low Phasenoise
 Tight Stability



Frequency range

1 MHz – 175 MHz

Standard frequencies

16.384; 30.720; 32.768; 38.880 MHz;
 51.840; 52.00; 68.736; 77.760; 100; 155,52; 175 MHz

Frequency stabilities¹

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-15.0		+15.0	ppm	-20 ... +70°C	D105
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-10.0		+10.0	ppm	@vc=Vs/2	
vs. supply voltage change	-3.0		+3.0	ppm	Vs ± 5%	
vs. load change	-1.0		+1.0	ppm	Load ± 10%	
vs. aging /1. Year	-3.0		+3.0	ppm		
vs. aging / year (following Years)	-1.0		+1.0	ppm		

Frequency stabilities¹

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-30.0		+30.0	ppm	-40 ... +85°C	F305
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	-15.0		+15.0	ppm	@vc=Vs/2	
vs. supply voltage change	-3.0		+3.0	ppm	Vs ± 5%	
vs. load change	-2.0		+2.0	ppm	Load ± 10%	
vs. aging /1. Year	-3.0		+3.0	ppm		
vs. aging / year (following Years)	-1.0		+1.0	ppm		

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				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		
Duty cycle	40		60	%	10 to 90 %	

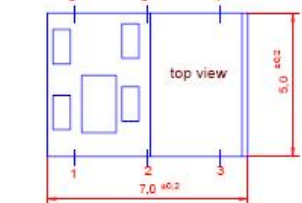
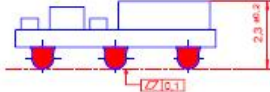
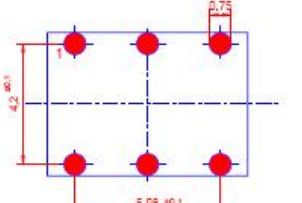
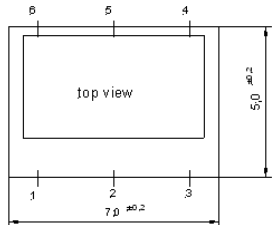
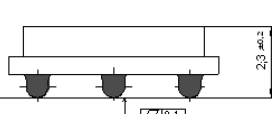
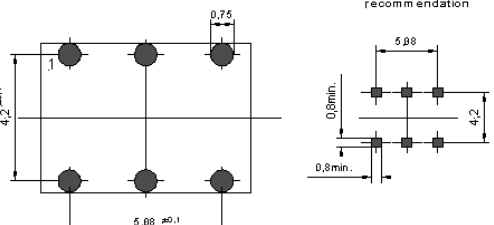
Frequency Tuning (EFC)

Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	±75.0 ±100.0	±90.0 ±140.0	+200.0 ±200.0	ppm ppm	Frequency > 53MHz Frequency <53MHz
Linearity			10	%	
Tuning Slope	Positive				
Control Voltage Range	0.0 0.5	1.65 2.5	3.3 4.5	VDC VDC	with Vs=3.3VDC with Vs=5.0VDC
Frequency control input impedance	10			k Ω	

Additional parameters

Parameter	Min	Typ	Max.	Units	Condition
Phase Noise		-90		dBc/Hz	10 Hz @52 MHz
		-115		dBc/Hz	100 Hz HCMOS
		-135		dBc/Hz	1 kHz 3,3V
		-150		dBc/Hz	10 kHz
		-153		dBc/Hz	100 kHz
Jitter		0,2		ps RMS	@ 12 kHz to 20 MHz
Phase Noise		-80		dBc/Hz	10 Hz @155,52 MHz
		-105		dBc/Hz	100 Hz PECL
		-135		dBc/Hz	1 kHz 3,3V
		-145		dBc/Hz	10 kHz
		-145		dBc/Hz	100 kHz
Jitter		0,6		ps RMS	@ 12 kHz to 20 MHz
Weight			2	g	
Processing & Packing	handling&processing note				

Enclosures

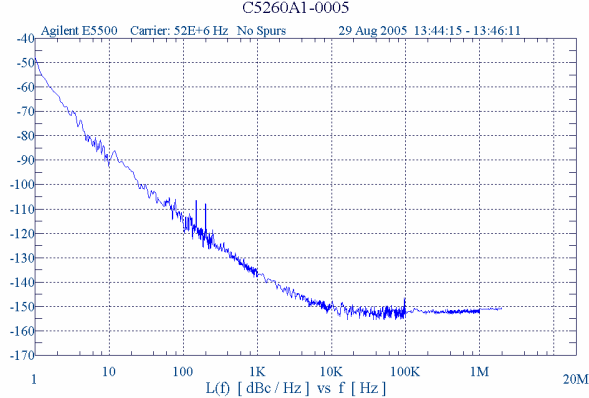
Type G241 < 53 MHz			Type G251 > 1 MHz		
Package Codes:					
Code A1	Height "H" 2,3 mm		Code B1	Height "H" 2,3 mm	
 <p>G 241</p>  <p>The four stand offs are brass balls plated with 2-3µm Ni and 6-10µm Sn</p> <p>Padvorschlag land pattern recommendation</p>  <p>Dimensions: mm</p>			 <p>G 251</p>  <p>The stand offs are brass balls plated with 2-3µm Ni and 6-10µm Sn</p> <p>Padvorschlag land pattern recommendation</p>  <p>Dimensions: mm</p>		

Pin Connections	Pin Connections				
1 Control Voltage (Vc) 2 N/C / Enable (optional) 3 Ground 4 RF Output 5 N/C 6 Supply Voltage Input (Vs)	1 Control Voltage (Vc) 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					
5A1-xxx frequency * VI AYYWW					

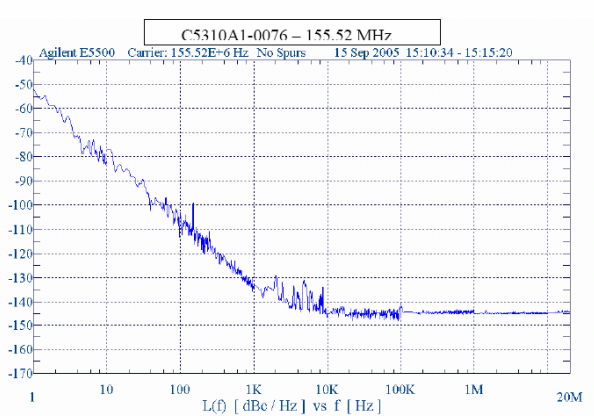
Absolute Maximum Ratings

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 (52 MHz; HCMOS output)

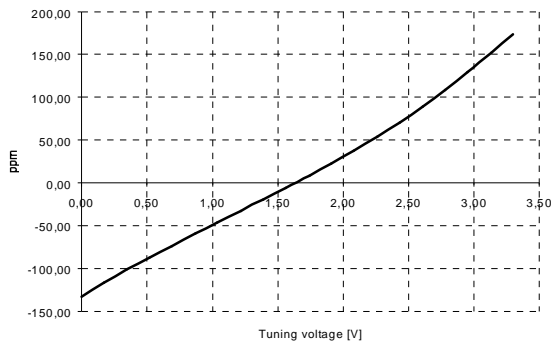


(155,52 MHz; PECL output)

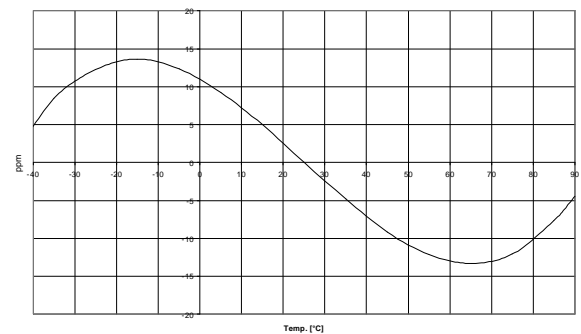


Frequency range [Hz]	S ₀ (f) [dB]	Jitter [ps rms]	Frequency range [Hz]	S ₀ (f) [dB]	Jitter [ps rms]
100Hz to 1.5MHz	-81dB	0.26ps	500Hz to 1.5MHz	-73.96dB	0.205ps
50kHz to 1.5MHz	-87dB	0.14ps	65kHz to 1.5MHz	-75.87dB	0.165ps
12kHz to 20MHz	-85dB	0.16ps	12kHz to 20MHz	-65.34dB	0.553ps

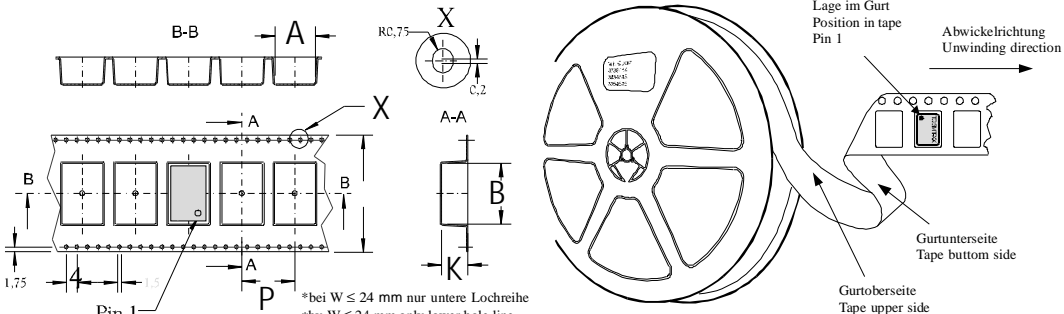
Typical tuning slope



Typical frequency stability vs temperature



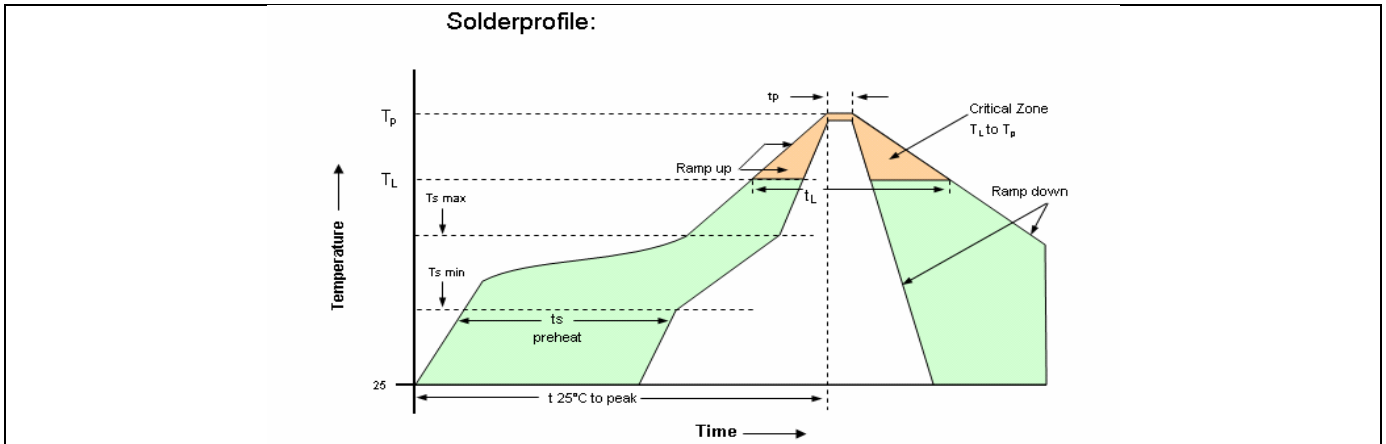
Standard Shipping Method



B-B
 A
 X
 RC,75
 C,2
 A-A
 B
 B
 1,75
 4
 1,5
 A
 P
 K
 Pin 1
 *bei W ≤ 24 mm nur untere Lochreihe
 *by W ≤ 24 mm only lower hole line
 Lage im Gurt
 Position in tape
 Pin 1
 Abwickelrichtung
 Unwinding direction
 Gurtunterseite
 Tape bottom side
 Gurtoberseite
 Tape upper side

Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P	Production tolerance complying DIN IEC 286-3
G241 / G251	12	125	tbd	8	

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
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:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency Control / Enable	Frequency
C5260	D105	SV050	RFH	A1		

vs.operat. temp. range:

D105: ±15ppm -20 ... +70°C
 F305: ±30ppm -40 ... +85°C

Supply:

SV050: 5V
 SV033: 3.3V

Signal:

RFH: HCMOS
 RFP: PECL
 RFL: LVDS

Enclosures:

A1: H: 2.3
 B1: H: 2.3

Dimension: mm

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