



## Features

- Supports AMD Geode based systems
- Three selectable 66MHz or 33MHz PCI clock outputs
- Two 33MHz clock outputs for LPC interface
- One fixed 66MHz clock output
- Two 14.318MHz reference clock outputs
- One 48MHz and one 24MHz clock outputs for USB host controller or I/O controller
- Spread Spectrum support for PCI, LPC and 66MHz clock outputs
- 3.3 Volt power supply
- 28 pin SSOP package

## Output Summary

- 3 - selectable 66MHz or 33MHz PCI clock outputs
- 2 - 33MHz LPC clock outputs
- 1 - 66MHz clock output
- 1 - 48Mhz clock output
- 1 - 24MHz clock output
- 2 - 14.318MHz clock outputs

**Table 1. PCI Clock Frequency Selection Table**

SEL_66_33# input	PCI Clock Frequency
0	33.3MHz
1	66.6MHz

**Table 2. EMI Control Input**

S1	S0	Spread Spectrum Support
0	0	+/- 0.5%
0	1	Disabled
1	0	- 1.0%
1	1	- 0.5% (default)

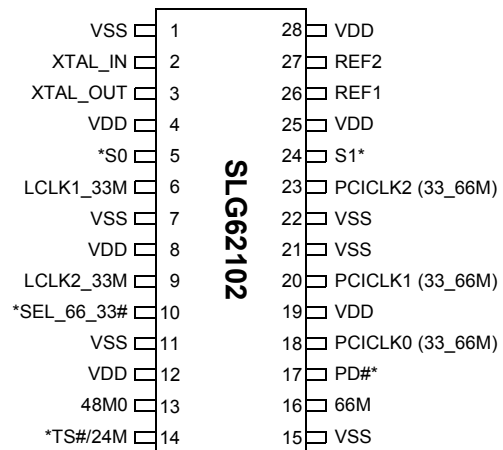
**Table 3. Power Down Functional Description**

PD# input	All clock outputs
0	All clocks are stopped low
1	All clocks are running

**Table 4. Power up Default Conditions**

Pin #	Pin Description	Default Condition	Function
14	TS#	High	All outputs enabled and running
27	Spread#	High	Spread Disabled
17	PD#	High	Refer to Power Down Functional Description Table
10	SEL_66_33#	High	PCI clocks are set to 66MHz

## Pin Configuration



## 28-pin SSOP

Note: Signals with "\*\*" have internal pull-up resistors

Other brands and names may be claimed as the property of others

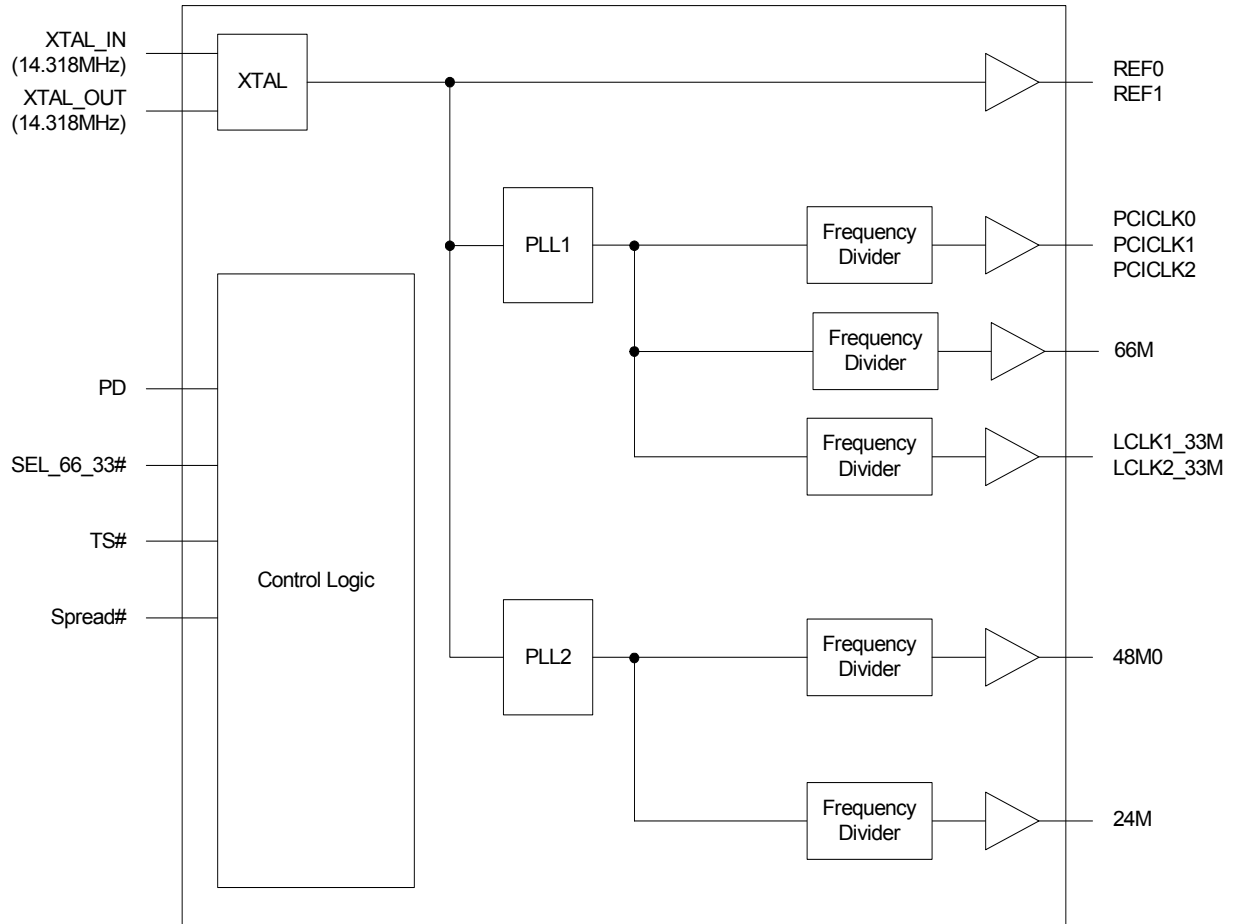


## Pin Description

Pin #	Name	Type	Description
1	VSS	GND	Ground for outputs.
2	XTAL_IN	I	14.318MHz crystal input.
3	XTAL_OUT	O, SE	14.318MHz crystal output.
4	VDD	PWR	3.3V power supply for outputs.
5	S0	I	3.3V tolerant input to select Spread Spectrum percentage.
6	LCLK1_33M	O, SE	33MHz LCLK output.
7	VSS	GND	Ground for outputs.
8	VDD	PWR	3.3V power supply for outputs.
9	LCLK2_33M	O, SE	33MHz LCLK output.
10	SEL_66_33#	I	3.3V tolerant input to select PCI clock output frequency.
11	VSS	GND	Ground for outputs.
12	VDD	PWR	3.3V power supply for outputs.
13	48M0	O, SE	48MHz clock output.
14	TS#/24M	I/O, SE	3.3V tolerant latched input to tri-state all outputs. 24MHz clock output.
15	VSS	GND	Ground for outputs.
16	66M	O, SE	66MHz clock output.
17	PD#	I	3.3V tolerant input to set the device in power down mode.
18	PCICLK0 (33_66M)	O, SE	33MHz or 66MHz PCI clock output.
19	VDD	PWR	3.3V power supply for outputs.
20	PCICLK1 (33_66M)	O, SE	33MHz or 66MHz PCI clock output.
21	VSS	GND	Ground for outputs.
22	VSS	GND	Ground for outputs.
23	PCICLK2 (33_66M)	O, SE	33MHz or 66MHz PCI clock output.
24	S1	I	3.3V tolerant input to select Spread Spectrum percentage.
25	VDD	PWR	3.3V power supply for outputs.
26	REF1	O, SE	14.318 reference clock output.
27	REF2	O, SE	14.318 reference clock output.
28	VDD	PWR	3.3V power supply for outputs.



Block Diagram





### Crystal Recommendations

The SLG62102 requires a **Parallel Resonance Crystal**. Substituting a series resonance crystal will cause the SLG62102 to operate at the wrong frequency and violate the ppm specification. For most applications there is a 300ppm frequency shift between series and parallel crystals due to incorrect loading.

**Table 5. Crystal Recommendations.**

Frequency (Fund)	Cut	Loading	Load Cap	Drive (max.)	Shunt Cap (max.)	Motional (max.)	Cut Accuracy (max.)	Temp Stability (max.)	Aging (max.)
14.31818MHz	AT	Parallel	20pF	0.1mW	5pF	0.016pF	35ppm	30ppm	5ppm

### Absolute Maximum Ratings

Storage Temperature: -65°C to +150°C

Supply Voltage (VDD): -0.5 to 4.6V

3.3V Input Voltage: -0.5 to 4.6V

Operating Temperature (Ambient): 0°C to +70°C

Operating Temperature (Case): 0°C to +85°C

ESD Protection (Min): 2000V

Lead Frame Material (for Green package): Sn/Bi

Reflow Temperature (for Green package): 260°C (10sec)

### DC Electrical Characteristics

#### Operating Conditions

Symbol	Description	Conditions	Min	Typ	Max	Unit
VDDA	3.3V Core Supply Voltage		3.135		3.465	V
VDD	3.3V I/O Supply Voltage		3.135		3.465	V
Vih	3.3V Input High Voltage		2.0		VDD+0.3	V
Vil	3.3V Input Low Voltage		VSS-0.3		0.8	V
Voh	3.3V Output High Voltage	Ioh = -12mA	2.4			V
Vol	3.3V Output Low Voltage	Iol = 12mA			0.4	V
Iil	Input Leakage Current	0 < Vin < VDD	-5		+5	uA
Cin	Input Pin Capacitance		3		5	pF
Cxtal	Xtal Pin Capacitance		3		5	pF
Cout	Output Pin Capacitance				6	pF
Lpin	Pin Inductance				7	nH
Idd_ON	Operating Supply Current	VDD = 3.465V All static inputs = VDD or VSS		46		mA
Idd_PD	Powerdown Current	VDD = 3.465V All static inputs = VDD or VSS			TBD	mA



## AC Electrical Characteristics

### PCI Timing Characteristics

Symbol	Description	Min	Max	Units	Conditions
Laccuracy	Long term accuracy		300	ppm	Using frequency counter with the measurement interval equal or greater than 0.15 second
Edge Rate	Rising edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Edge Rate	Falling edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Tccjitter	Cycle to cycle jitter		300	ps	
Duty Cycle	Duty Cycle	40	60	%	
Tskew	Pin-to-Pin Skew		500	ps	250ps when configure at 66MHz output

### LCLK & 66M Timing Characteristics

Symbol	Description	Min	Max	Units	Conditions
Laccuracy	Long term accuracy		300	ppm	Using frequency counter with the measurement interval equal or greater than 0.15 second
Edge Rate	Rising edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Edge Rate	Falling edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Tccjitter	Cycle to cycle jitter		500	ps	
Duty Cycle	Duty Cycle	40	60	%	
Tskew	Pin-to-Pin Skew		500	ps	

### USB\_48 Timing Characteristics

Symbol	Description	Min	Max	Units	Conditions
Laccuracy	Long term accuracy		50	ppm	Using frequency counter with the measurement interval equal or greater than 0.15 second
Edge Rate	Rising edge rate	1.0	2.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Edge Rate	Falling edge rate	1.0	2.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Tccjitter	Cycle to cycle jitter		150	ps	
Duty Cycle	Duty Cycle	40	60	%	



## 24M Timing Characteristics

Symbol	Description	Min	Max	Units	Conditions
Laccuracy	Long term accuracy		50	ppm	Using frequency counter with the measurement interval equal or greater than 0.15 second
Edge Rate	Rising edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Edge Rate	Falling edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Tccjitter	Cycle to cycle jitter		250	ps	
Duty Cycle	Duty Cycle	40	60	%	

## REF Timing Characteristics

Symbol	Description	Min	Max	Units	Conditions
Laccuracy	Long term accuracy		300	ppm	Using frequency counter with the measurement interval equal or greater than 0.15 second
Edge Rate	Rising edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Edge Rate	Falling edge rate	1.0	4.0	V/ns	Measured from 0.4V to 2.4V in test board, measured from 0.8V to 2.0V in system
Tccjitter	Cycle to cycle jitter		1400	ps	
Duty Cycle	Duty Cycle	40	60	%	

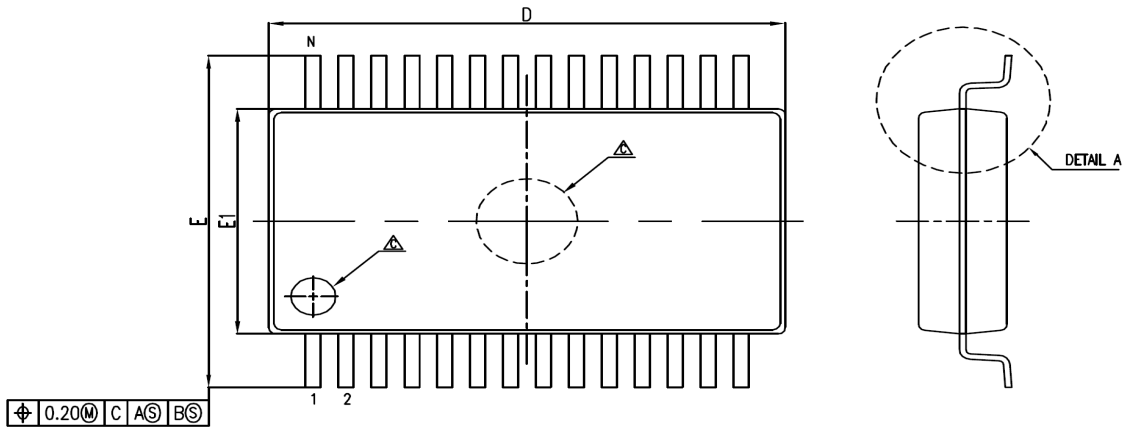


**Ordering Information**

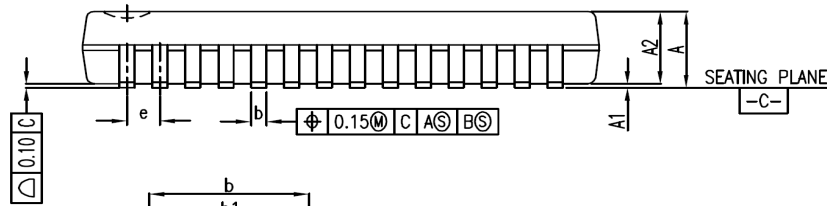
Part Number	Package Type	Temperature Range
SLG62102K	28 Lead Green Package SSOP	Commercial, 0° to 70°C
SLG62102KTR	28 Lead Green Package SSOP - Tape and Reel	Commercial, 0° to 70°C

**Package Drawing and Dimensions**

**28 Lead SSOP Package**

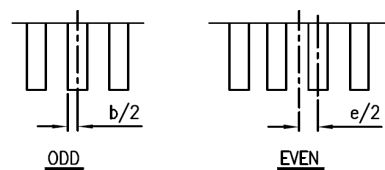
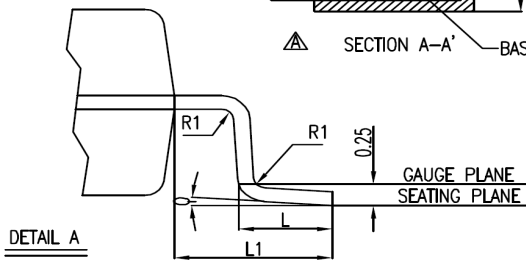
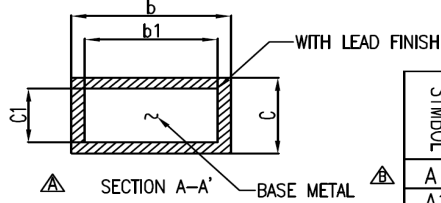


⌀ 0.20 (M) C A(S) B(S)



⌀ 0.10 C

⌀ 0.15 (M) C A(S) B(S)



SYMBOL	COMMON DIMENSION MILLIMETERS			COMMON DIMENSION INCH		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A			2.0			0.079
A1	0.05			0.002		
A2	1.65	1.75	1.85	0.065	0.069	0.073
b	0.22		0.38	0.009		0.015
b1	0.22	0.30	0.33	0.009	0.012	0.013
c	0.09		0.25	0.004		0.010
c1	0.09	0.15	0.21	0.004	0.006	0.008
E	7.50	7.80	8.10	0.295	0.307	0.319
E1	5.00	5.30	5.60	0.197	0.209	0.220
e	0.65 BSC			0.0256 BSC		
L	0.55	0.75	0.95	0.021	0.030	0.037
L1	1.25 REF.			0.050 REF.		
R1	0.09			0.004		
θ	0°	4°	8°	0°	4°	8°

	N	14	16	18	20	24	28
D ±0.20	6.20	6.20	7.20	7.20	8.20	10.2	
JEDEC NO.	MO-150 AB	MO-150 AC	MO-150 AD	MO-150 AE	MO-150 AG	MO-150 AH	