

阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .



LCD Panel EMI Reduction IC

Features

- FCC approved method of EMI attenuation.
- Provides up to 15dB EMI reduction.
- Generates a 1X low EMI spread spectrum clock of the input frequency.
- Input frequency range: 25MHz to 210MHz.
- Internal loop filter minimizes external components and board space.
- Center spread.
- 4 spread frequency deviation selections: $\pm 0.13\%$ to $\pm 1.24\%$.
- Low inherent Cycle-to-cycle jitter.
- 3.3V Operating Voltage.
- TTL or CMOS compatible inputs and outputs.
- Low power CMOS design.
- Supports notebook VGA and other LCD timing controller applications.
- Available in 8-pin SOIC Package.

Product Description

The ASM3P2182A is a versatile spread spectrum frequency modulator designed specifically for a wide range of input clock frequencies from 25MHz to 210MHz. (Refer to *Input Frequency and Modulation Rate Table*). The ASM3P2182A can generate an EMI reduced clock from an OSC or a system generated clock. The ASM3P2182A offers a Center Spread clock and with a percentage deviation from $\pm 0.13\%$ or $\pm 1.24\%$.

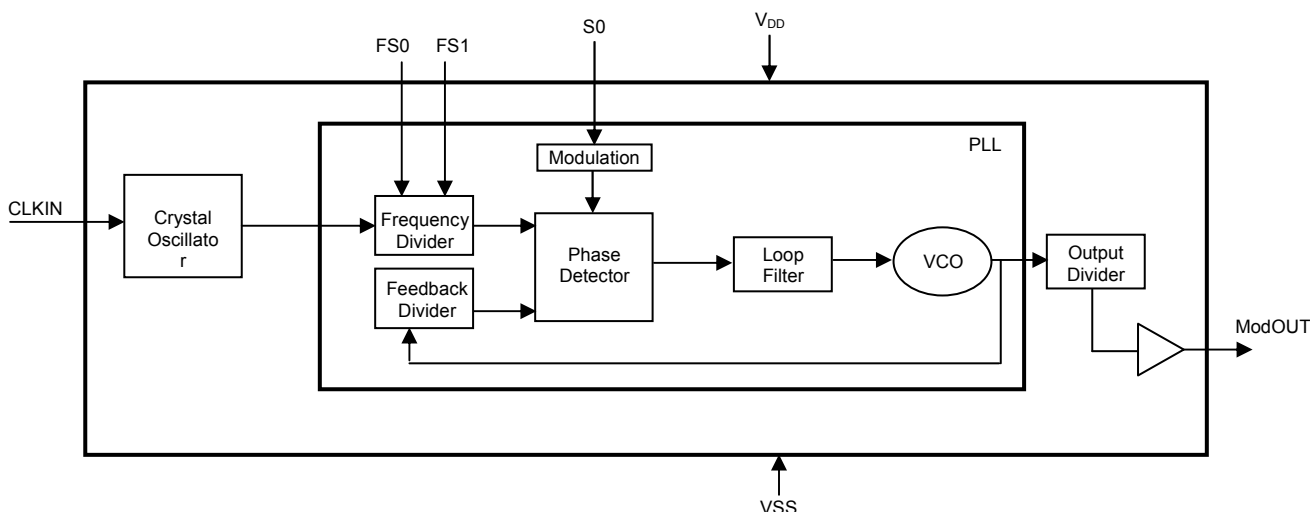
The ASM3P2182A reduces electromagnetic interference (EMI) at the clock source, allowing system wide reduction of EMI of down stream clock and data dependent signals. The ASM3P2182A allows significant system cost savings by reducing the number of circuit board layers ferrite beads, shielding and other passive components that are traditionally required to pass EMI regulations.

The ASM3P2182A uses the most efficient and optimized modulation profile approved by the FCC and is implemented in a proprietary all digital method.

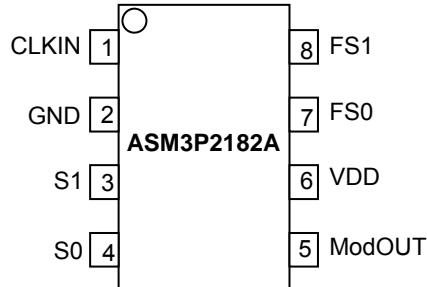
The ASM3P2182A modulates the output of a single PLL in order to "spread" the bandwidth of a synthesized clock, and more importantly, decreases the peak amplitudes of its harmonics. This results in significantly lower system EMI compared to the typical narrow band signal produced by oscillators and most frequency generators. Lowering EMI by increasing a signal's bandwidth is called 'spread spectrum clock generation.'

Applications

The ASM3P2182A is targeted towards EMI management for memory and LVDS interfaces in mobile graphic chipsets and high-speed digital applications such as PC peripheral devices, consumer electronics, and embedded controller systems.



Pin Configuration



Pin Description

Pin#	Pin Name	Type	Description
1	CLKIN	I	Connect to externally generated clock signal.
2	GND	P	Ground to entire chip.
3	S1	I	Spread range select. Digital logic input used to select frequency deviation (Refer to <i>Spread Deviation Table</i>). This pin has an internal pull-up resistor.
4	S0	I	Spread range select. Digital logic input used to select frequency deviation (Refer to <i>Spread Deviation Table</i>). This pin has an internal pull-up resistor.
5	ModOUT	O	Spread spectrum low EMI output.
6	VDD	P	Power supply for the entire chip (3.3V).
7	FS0	I	Frequency range select. Digital logic input used to select frequency range (Refer to <i>Input Frequency and Modulation Rate Table</i>). This pin has an internal pull-up resistor.
8	FS1	I	Frequency range select. Digital logic input used to select frequency range (Refer to <i>Input Frequency and Modulation Rate Table</i>). This pin has an internal pull-up resistor.

Input Frequency and Modulation Rate table

FS1 (pin 8)	FS0 (pin 7)	Frequency Range
0	0	25MHz to 50MHz
0	1	50MHz to 103MHz
1	0	75MHz to 150MHz
1	1	160MHz to 210MHz

Spread Deviation Selection table

S1	S0	Spreading Range (± %)								
		25 MHz	40 MHz	65 MHz	81 ¹ MHz	81 ² MHz	108 MHz	120 MHz	162 MHz	200 MHz
0	0	0.28	0.19	0.15	0.12	0.18	0.15	0.1	0.1	0.06
0	1	0.8	0.3	0.3	0.2	0.5	0.3	0.19	0.3	0.1
1	0	1.2	0.54	0.45	0.4	0.8	0.6	0.36	1.0	0.6
1	1	2.1	1.0	1.1	0.9	1.4	1.1	0.75	1.9	1.2

Notes: 1. Frequency Range- 50MHz to 103MHz
 2. Frequency Range- 75MHz to 150MHz

Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
VDD	Supply Voltage pin with respect to Ground	-0.5 to +4.6	V
V _{IN}	Input Voltage pin with respect to Ground	VSS-0.5 to VDD+0.5	V
V _{OUT}	Output Voltage pin with respect to Ground	VSS-0.5 to VDD+0.5	V
T _{STG}	Storage temperature	-55 to +125	°C
T _s	Max. Soldering Temperature (10 sec)	260	°C
T _J	Junction Temperature	150	°C
T _{DV}	Static Discharge Voltage (As per JEDEC STD22-A114-B)	2	KV

Note: These are stress ratings only and are not implied for functional use. Exposure to absolute maximum ratings for prolonged periods of time may affect device reliability.

Recommended Operating Conditions

Parameter	Description	Min	Typ	Max	Unit
VDD	Operating Voltage	2.7	3.3	3.7	V
T _A	Operating Temperature (Ambient Temperature)	-40		+85	°C
C _L	Load Capacitance			15	pF
C _{IN}	Input Capacitance		5		pF

DC Electrical Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
V _{IL}	Input low voltage	GND – 0.3		0.8	V
V _{IH}	Input high voltage	2.0		V _{DD} + 0.3	V
I _{IL}	Input low current			-35	μA
I _{IH}	Input high current			35	μA
V _{OL}	Output low voltage (V _{DD} = 3.3V, I _{OL} = 20mA)			0.4	V
V _{OH}	Output high voltage (V _{DD} = 3.3V, I _{OH} = 20mA)	2.5			V
I _{CC}	Dynamic supply current Normal mode (3.3V and 10pF loading)	8.46	12	17.78	mA
I _{DD}	Static supply current Standby mode ¹		0.6		mA
V _{DD}	Operating voltage	2.7	3.3	3.7	V
t _{ON}	Power up time (first locked clock cycle after power up)		0.18		mS
Z _{OUT}	Clock out impedance		50		Ω

Note: 1. CLKIN pin is pulled low.

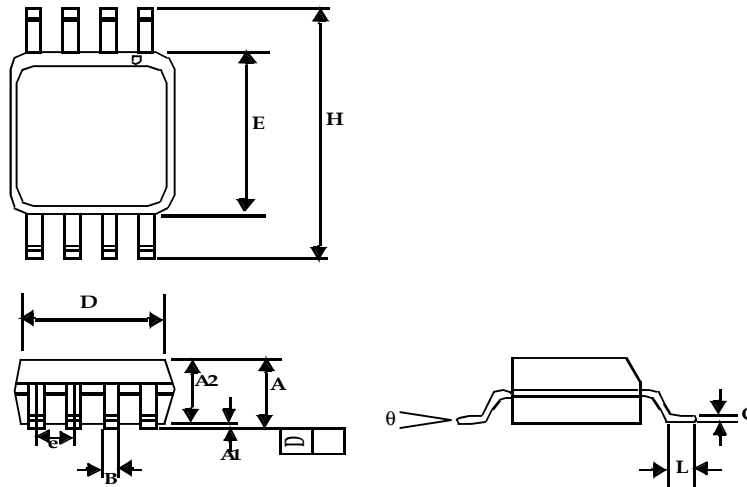
AC Electrical Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
CLKIN	Input frequency	25		210	MHz
ModOUT	Output frequency	25		210	MHz
t _{LH} ¹	Output rise time (measured at 0.8V to 2.0V)	1.2	1.32	1.4	nS
t _{HL} ¹	Output fall time (measured at 2.0V to 0.8V)	0.8	0.9	1.0	nS
t _{JC}	Jitter (cycle to cycle)			±360	pS
T _D	Output duty cycle	45	50	55	%

Note: 1. t_{LH} and t_{HL} are measured into a capacitive load of 15pF.

Package Information

8-lead (150-mil) SOIC Package




Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A1	0.004	0.010	0.10	0.25
A	0.053	0.069	1.35	1.75
A2	0.049	0.059	1.25	1.50
B	0.012	0.020	0.31	0.51
C	0.007	0.010	0.18	0.25
D	0.193 BSC		4.90 BSC	
E	0.154 BSC		3.91 BSC	
e	0.050 BSC		1.27 BSC	
H	0.236 BSC		6.00 BSC	
L	0.016	0.050	0.41	1.27
theta	0°	8°	0°	8°

Ordering Information

Part Number	Marking	Package	Temperature
ASM3P2182AF-08ST	ACV	8-Pin SOIC, TUBE, Pb Free	0°C to +70°C
ASM3P2182AF-08SR	ACV	8-Pin SOIC, TAPE & REEL, Pb Free	0°C to +70°C

A "microdot" placed at the end of last row of marking or just below the last row toward the center of package indicates Pb-free.

ON Semiconductor and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. U.S. Patent Pending; Timing-Safe and Active Bead are trademarks of PulseCore Semiconductor, a wholly owned subsidiary of ON Semiconductor. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free
USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free
USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855
Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81-3-5773-3850

ON Semiconductor Website:
www.onsemi.com

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative