

ASM3P2182A

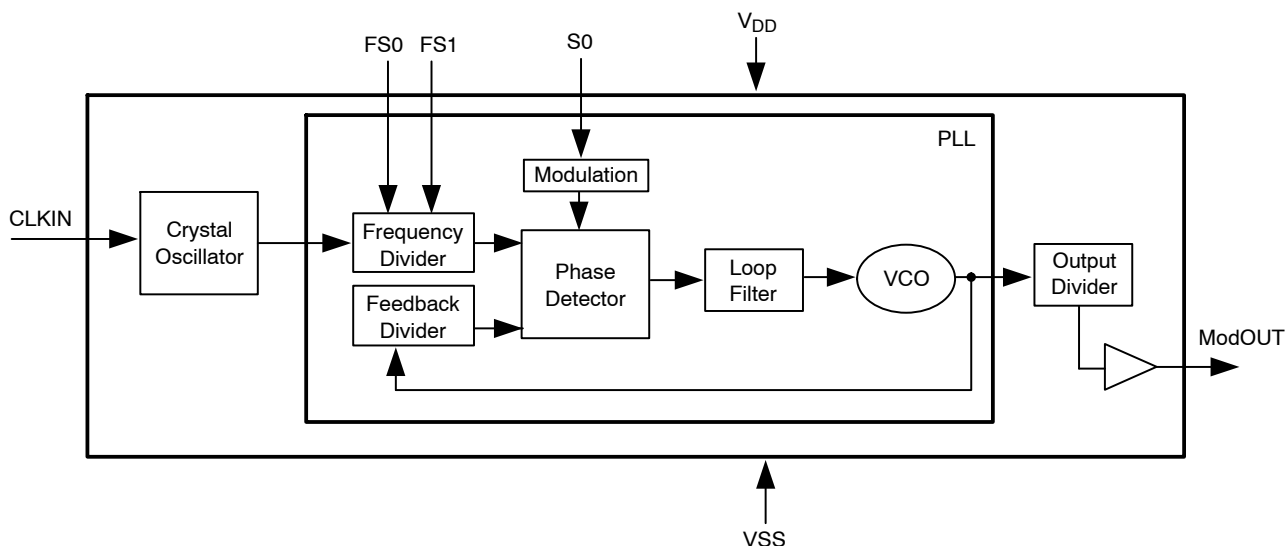


Figure 1. Block Diagram

Table 1. 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 (3.3 V).
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.

Table 2. INPUT FREQUENCY AND MODULATION RATE TABLE

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

Table 3. SPREAD DEVIATION SELECTION TABLE

S1	S0	Spreading Range (±%)								
		25 MHz	40 MHz	65 MHz	81 MHz (Note 1)	81 MHz (Note 2)	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

1. Frequency Range: 50 MHz to 103 MHz

2. Frequency Range: 75 MHz to 150 MHz

Table 4. 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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Table 5. 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)	0		+70	°C
C _L	Load Capacitance			15	pF
C _{IN}	Input Capacitance		5		pF

Table 6. 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} = 3.3 V, I _{OL} = 20 mA)			0.4	V
V _{OH}	Output high voltage (V _{DD} = 3.3 V, I _{OH} = 20 mA)	2.5			V
I _{CC}	Dynamic supply current Normal mode (3.3 V and 10 pF loading)	8.46	12	17.78	mA
I _{DD}	Static supply current Standby mode (Note 3)		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

3. CLKIN pin is pulled low.

Table 7. AC ELECTRICAL CHARACTERISTICS

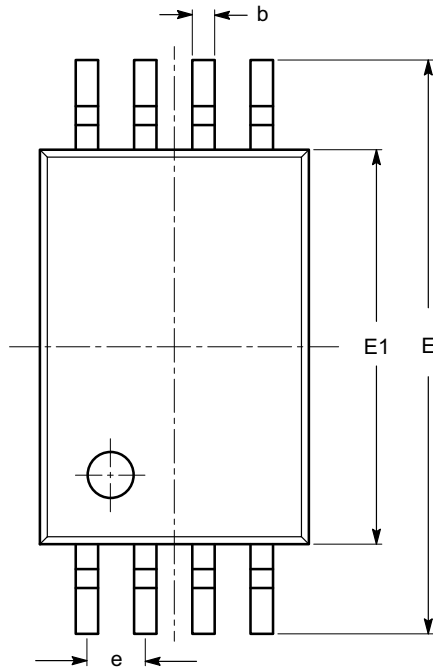
Symbol	Parameter	Min	Typ	Max	Unit
CLKIN	Input frequency	25		210	MHz
ModOUT	Output frequency	25		210	MHz
t _{LH} (Note 4)	Output rise time (measured at 0.8 V to 2.0 V)	1.2	1.32	1.4	nS
t _{HL} (Note 4)	Output fall time (measured at 2.0 V to 0.8 V)	0.8	0.9	1.0	nS
t _{JC}	Jitter (cycle to cycle)			360	pS
T _D	Output duty cycle	45	50	55	%

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

ASM3P2182A

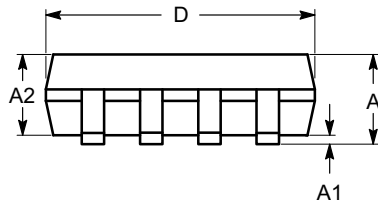
PACKAGE DIMENSIONS

TSSOP8, 4.4x3
CASE 948AL-01
ISSUE O

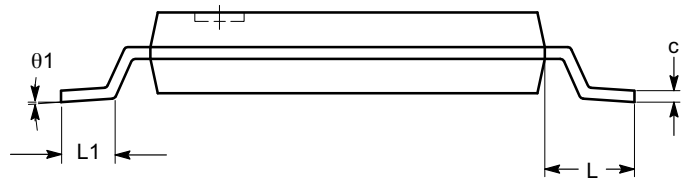


SYMBOL	MIN	NOM	MAX
A			1.20
A1	0.05		0.15
A2	0.80	0.90	1.05
b	0.19		0.30
c	0.09		0.20
D	2.90	3.00	3.10
E	6.30	6.40	6.50
E1	4.30	4.40	4.50
e	0.65 BSC		
L	1.00 REF		
L1	0.50	0.60	0.75
θ	0°		8°

TOP VIEW



SIDE VIEW



END VIEW

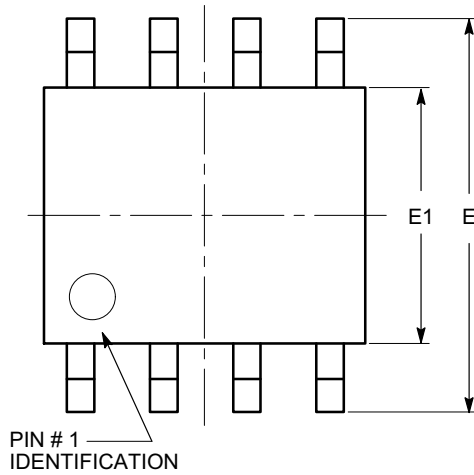
Notes:

- (1) All dimensions are in millimeters. Angles in degrees.
- (2) Complies with JEDEC MO-153.

ASM3P2182A

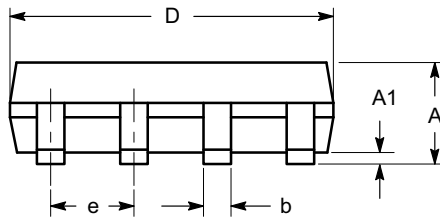
PACKAGE DIMENSIONS

SOIC 8, 150 mils
CASE 751BD-01
ISSUE O

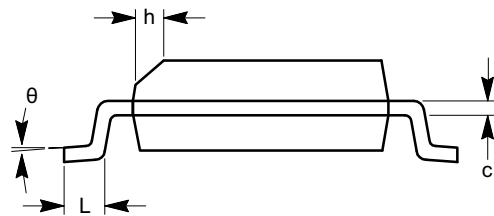


TOP VIEW

SYMBOL	MIN	NOM	MAX
A	1.35		1.75
A1	0.10		0.25
b	0.33		0.51
c	0.19		0.25
D	4.80		5.00
E	5.80		6.20
E1	3.80		4.00
e	1.27 BSC		
h	0.25		0.50
L	0.40		1.27
θ	0°		8°



SIDE VIEW



END VIEW


Notes:

- (1) All dimensions are in millimeters. Angles in degrees.
- (2) Complies with JEDEC MS-012.

ASM3P2182A

Table 8. ORDERING INFORMATION

Part Number	Marking	Package Type	Temperature
ASM3P2182AF-08TT	3P2182AF	8-Pin TSSOP, TUBE, Pb Free	Commercial
ASM3P2182AF-08TR	3P2182AF	8-Pin TSSOP, TAPE & REEL, Pb Free	Commercial
ASM3P2182AF-08ST	3P2182AF	8-Pin SOIC, TUBE, Pb Free	Commercial
ASM3P2182AF-08SR	3P2182AF	8-Pin SOIC, TAPE & REEL, Pb Free	Commercial
ASM3P2182A-08TT	3P2182A	8-Pin TSSOP, TUBE	Commercial
ASM3P2182A-08TR	3P2182A	8-Pin TSSOP, TAPE & REEL	Commercial
ASM3P2182A-08ST	3P2182A	8-Pin SOIC, TUBE	Commercial
ASM3P2182A-08SR	3P2182A	8-Pin SOIC, TAPE & REEL	Commercial
ASM3P2182AG-08TT	3P2182AG	8-Pin TSSOP, TUBE, Green	Commercial
ASM3P2182AG-08TR	3P2182AG	8-Pin TSSOP, TAPE & REEL, Green	Commercial
ASM3P2182AG-08ST	3P2182AG	8-Pin SOIC, TUBE, Green	Commercial
ASM3P2182AG-08SR	3P2182AG	8-Pin SOIC, TAPE & REEL, Green	Commercial

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. 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

ASM3P2182A/D