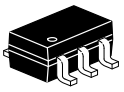
Single Bit Uni-Directional Translator

FXLP34

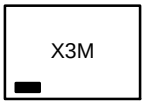
SIP6 1.45X1.0
CASE 127EB

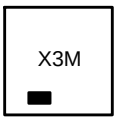
UDFN6
1.0X1.0, 0.35P
CASE 517DP

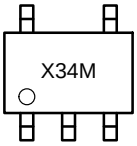


SC−88A (SC−70
5 Lead), 1.25x2
CASE 419AC−01

MARKING DIAGRAM







X3, X34 = Device Code
M = Assembly Operation Month

Description

The FXLP34 is a single translator with two separate supply voltages: V_{CC1} for input translation voltages and V_{CC} for output translation voltages. The FXLP34 is part of **onsemi**'s Ultra Low Power (ULP) series of products. This device operates with VCC values from 1.0 V to 3.6 V, and is intended for use in portable applications that require ultra low power consumption.

The internal circuit is composed of a minimum of buffer stages, to enable ultra low dynamic power.

The FXLP34 is uniquely designed for optimized power and speed, and is fabricated with an advanced CMOS technology to achieve high−speed operation while maintaining low CMOS power dissipation.

Features

- 1.0 V to 3.6 V V_{CC} Supply Voltage
- Converts Any Voltage (1.0 V to 3.6 V) to (1.0 V to 3.6 V)
- 4.6V Tolerant Inputs and Outputs
- t_{PD}:
  - 4 ns Typical for 3.0 V to 3.6 V V_{CC}
- Power−Off High Impedance Inputs and Outputs
- Static Drive (I_{OH}/I_{OL}):
  - ±2.6 mA at 3.00 V V_{CC}
- Uses Proprietary Quiet Series Noise / EMI Reduction Circuitry
- Ultra−Small MicroPak™ Leadless Packages
- Ultra−Low Dynamic Power
- These are Pb−Free Devices

ORDERING INFORMATION

See detailed ordering and shipping information on page 9 of this data sheet.

PIN CONFIGURATION

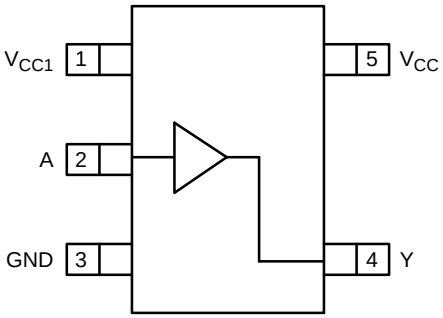


Figure 1. SC70 (Top View)

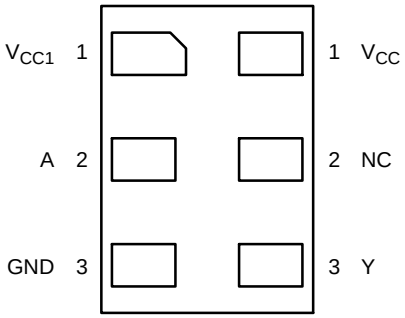


Figure 2. MicroPak (Top Through View)

PIN DEFINITIONS

Pin # SC70	Pin # MicroPak	Name	Description
1	1	V_{CC1}	Input Translation Voltage
2	2	A	Input
3	3	GND	Ground
4	4	Y	Output
	5	NC	No Connect
5	6	V_{CC}	Output Translation Voltage

TRUTH TABLE

Input	Outputs
A	**Y**
L	L
H	H

H = Logic Level HIGH
L = Logic Level Low

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Min	Max	Unit
V_{CC}, V_{CC1}	Supply Voltage		−0.5	+4.6	V
V_{IN}	DC Input Voltage		−0.5	+4.6	V
V_{OUT}	DC Output Voltage	HIGH or LOW State (Note 1)	−0.5	V_{CC} + 0.5 V	V
		V_{CC} = 0 V	−0.5	+4.6	
I_{IK}	DC Input Diode Current	V_{IN} < 0	−	−50	mA
I_{OK}	DC Output Diode Current	V_{OUT} < 0 V	−	−50	mA
		V_{OUT} > V_{CC}	−	+50	
I_{OH}/I_{OL}	DC Output Source/Sink Current		−	±50	mA
I_{CC} or I_{GND}	DC V_{CC} or Ground Current per Supply Pin		−	±100	mA
T_{STG}	Storage Temperature Range		−65	150	°C
P_D	Power Dissipation at +85°C	SC70−6	−	180	mW
		MicroPak™ −6	−	130	
		MicroPak2™ −6	−	120	
ESD	Human Body Model, JEDEC:JESD22−A114		−	4000	V
	Charge Device Model, JEDEC:JESD22−C101		−	2000	

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. I_O Absolute Maximum Rating must be observed.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Conditions	Min	Max	Unit
V_{CC}, V_{CC1}	Supply Voltage		1.0	3.6	V
V_{IN}	Input Voltage		0	3.6	V
V_{OUT}	Output Voltage	HIGH or LOW State	0	V_{CC}	V
		V_{CC} = 0 V	0	3.6	
I_{OH}/I_{OL}	Output Current in I_{OH}/I_{OL}	V_{CC} = 3.0 to 3.6 V	−	±2.6	mA
		V_{CC} = 2.3 to 2.7 V	−	±2.1	
		V_{CC} = 1.65 to 1.95 V	−	±1.5	
		V_{CC} = 1.40 to 1.60 V	−	±1.0	
		V_{CC} = 1.10 to 1.30 V	−	±0.5	
		V_{CC} = 1.0 V	−	±20	μA
T_A	Operating Temperature, Free Air		−40	+85	°C
θ_{JA}	Thermal Resistance	SC70−6	−	425	°C/W
		MicroPak−6	−	500	
		MicroPak2−6	−	560	

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

2. Unused inputs must be held HIGH or LOW. They may not float.

ELECTRICAL CHARACTERISTIICS

Symbol	Parameter	Condition	V_{CC} (V)	V_{CC1} (V)	T_A = +25°C		T_A = −40 to 85°C		Unit
					Min	Max	Min	Max	
V_{IH}	HIGH Level Input (V_{CC1})		1.0 to 3.6	1.0	0.65 x V_{CCI}	−	0.65 x V_{CCI}	−	V
				1.10 ≤ V_{CC1} ≤ 1.30	0.65 x V_{CCI}	−	0.65 x V_{CCI}	−	
				1.40 ≤ V_{CC1} ≤ 1.60	0.65 x V_{CCI}	−	0.65 x V_{CCI}	−	
				1.65 ≤ V_{CC1} ≤ 1.95	0.65 x V_{CCI}	−	0.65 x V_{CCI}	−	
				2.30 ≤ V_{CC1} ≤ 2.70	1.6	−	1.6	−	
				3.00 ≤ V_{CC1} ≤ 3.60	2.1	−	2.1	−	
V_{IL}	LOW Level Input (V_{CC1})		1.0 to 3.6	1.0	−	0.35 x V_{CCI}	−	0.35 x V_{CCI}	V
				1.10 ≤ V_{CC1} ≤ 1.30	−	0.35 x V_{CCI}	−	0.35 x V_{CCI}	
				1.40 ≤ V_{CC1} ≤ 1.60	−	0.35 x V_{CCI}	−	0.35 x V_{CCI}	
				1.65 ≤ V_{CC1} ≤ 1.95	−	0.35 x V_{CCI}	−	0.35 x V_{CCI}	
				2.30 ≤ V_{CC1} ≤ 2.70	−	0.7	−	0.7	
				3.00 ≤ V_{CC1} ≤ 3.60	−	0.9	−	0.9	
V_{OH}	HIGH Level Output (V_{CC})	I_{OH} = −20 μA	1.0	1.0 to 3.6	V_{CC} − 0.1	−	V_{CC} − 0.1	−	V
			1.10 ≤ V_{CC1} ≤ 1.30		V_{CC} − 0.1	−	V_{CC} − 0.1	−	
			1.40 ≤ V_{CC1} ≤ 1.60		V_{CC} − 0.1	−	V_{CC} − 0.1	−	
			1.65 ≤ V_{CC1} ≤ 1.95		V_{CC} − 0.1	−	V_{CC} − 0.1	−	
			2.30 ≤ V_{CC1} ≤ 2.70		V_{CC} − 0.1	−	V_{CC} − 0.1	−	
			3.00 ≤ V_{CC1} ≤ 3.60		V_{CC} − 0.1	−	V_{CC} − 0.1	−	
		I_{OH} = −0.5 mA	1.10 ≤ V_{CC1} ≤ 1.30	1.0 to 3.6	0.75 x V_{CC}	−	0.70 x V_{CC}	−	
		I_{OH} = −1.0 mA	1.40 ≤ V_{CC1} ≤ 1.60		1.07	−	0.99	−	
		I_{OH} = −1.5 mA	1.65 ≤ V_{CC1} ≤ 1.95		1.24	−	1.22	−	
		I_{OH} = −2.1 mA	2.30 ≤ V_{CC1} ≤ 2.70		1.95	−	1.87	−	
		I_{OH} = −2.6 mA	3.00 ≤ V_{CC1} ≤ 3.60		2.61	−	2.55	−	
V_{OL}	LOW Level Output (V_{CC})	I_{OL} = 20 μA	1.0	1.0 to 3.6	−	0.1	−	0.1	V
			1.10 ≤ V_{CC1} ≤ 1.30		−	0.1	−	0.1	
			1.40 ≤ V_{CC1} ≤ 1.60		−	0.1	−	0.1	
			1.65 ≤ V_{CC1} ≤ 1.95		−	0.1	−	0.1	
			2.30 ≤ V_{CC1} ≤ 2.70		−	0.1	−	0.1	
		I_{OL} = 0.5 mA	1.10 ≤ V_{CC1} ≤ 1.30	1.0 to 3.6	−	0.30 x V_{CC}	−	0.30 x V_{CC}	
		I_{OL} = 1.0 mA	1.40 ≤ V_{CC1} ≤ 1.60		−	0.31	−	0.37	
		I_{OL} = 1.5 mA	1.65 ≤ V_{CC1} ≤ 1.95		−	0.31	−	0.35	
		I_{OL} = 2.1 mA	2.30 ≤ V_{CC1} ≤ 2.70		−	0.31	−	0.33	
		I_{OL} = 2.6 mA	3.00 ≤ V_{CC1} ≤ 3.60		−	0.31	−	0.33	
I_{IN}	Input Leakage Current	0 ≤ V_{IN} ≤ 3.60		1.0 to 3.6	−	±0.1	−	±1.0	μA
I_{OFF}	Power Off Leakage Current	0 ≤ (V_{IN}, V_O) ≤ 3.60	0	0	−	1.0	−	5.0	μA
I_{CC}	Quiescent Supply Current	V_{IN} = V_{CC} or GND	1.0 to 3.6	1.0 to 3.6	−	0.9	−	5.0	μA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

AC ELECTRICAL CHARACTERISTIICS

Symbol	Parameter	Condition	V_{CC} (V)	T_A = +25°C			T_A = −40 to 85°C		Unit	Figure
				Min	Typ	Max	Min	Max		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.0	C_L = 10 pF, R_L = 1 MΩ	1.0	–	26.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	15.0	25.0	38.1	12.0	43.3		
			1.40 to 1.60	14.0	24.0	36.7	11.0	42.0		
			1.65 to 1.95	13.0	23.0	36.0	10.0	41.4		
			2.30 to 2.70	12.0	22.0	35.5	9.0	40.9		
			3.00 to 3.60	11.0	21.0	35.5	8.0	40.6		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.2	C_L = 10 pF, R_L = 1 MΩ	1.0	–	18.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	8.0	15.0	23.2	6.0	41.0		
			1.40 to 1.60	7.5	14.0	21.7	5.5	39.1		
			1.65 to 1.95	7.0	13.0	20.9	5.0	32.3		
			2.30 to 2.70	6.5	12.0	20.4	4.5	29.6		
			3.00 to 3.60	6.0	12.0	20.2	4.0	29.4		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.5	C_L = 10 pF, R_L = 1 MΩ	1.0	–	14.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	5.0	11.0	16.3	4.0	20.6		
			1.40 to 1.60	4.8	10.0	14.8	3.5	19.3		
			1.65 to 1.95	4.5	9.0	14.1	3.0	18.7		
			2.30 to 2.70	4.0	8.0	13.5	2.5	18.0		
			3.00 to 3.60	3.5	8.0	13.3	2.0	17.8		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.8	C_L = 10 pF, R_L = 1 MΩ	1.0	–	13.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	4.0	9.0	13.5	3.0	17.5		
			1.40 to 1.60	3.5	8.0	12.0	2.5	16.3		
			1.65 to 1.95	3.0	7.0	11.3	2.0	15.6		
			2.30 to 2.70	2.5	6.0	10.7	1.5	15.0		
			3.00 to 3.60	2.5	6.0	10.5	1.0	14.7		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 2.5	C_L = 10 pF, R_L = 1 MΩ	1.0	–	12.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	3.0	7.0	10.9	2.5	14.3		
			1.40 to 1.60	2.5	6.0	9.4	2.0	13.1		
			1.65 to 1.95	2.0	5.0	8.6	1.5	11.4		
			2.30 to 2.70	1.5	4.0	8.0	1.0	10.8		
			3.00 to 3.60	1.5	4.0	7.8	1.0	10.5		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 3.3	C_L = 10 pF, R_L = 1 MΩ	1.0	–	11.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	3.0	6.0	10.1	2.0	13.8		
			1.40 to 1.60	2.5	5.0	8.2	1.5	10.5		
			1.65 to 1.95	2.0	4.0	7.4	1.0	9.9		
			2.30 to 2.70	1.0	3.0	6.8	1.0	9.2		
			3.00 to 3.60	1.0	3.0	6.6	1.0	9.0		

AC ELECTRICAL CHARACTERISTIICS (continued)

Symbol	Parameter	Condition	V_{CC} (V)	T_A = +25°C			T_A = −40 to 85°C		Unit	Figure
				Min	Typ	Max	Min	Max		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.0	C_L = 15 pF, R_L = 1 MΩ	1.0	–	28.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	16.0	27.0	43.0	12.0	44.8		
			1.40 to 1.60	15.0	26.0	41.6	11.0	43.6		
			1.65 to 1.95	14.0	25.0	40.9	10.0	47.9		
			2.30 to 2.70	13.0	24.0	40.5	9.0	47.5		
			3.00 to 3.60	12.0	23.0	40.4	8.0	41.4		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.2	C_L = 15 pF, R_L = 1 MΩ	1.0	–	19.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	9.0	16.0	24.6	8.0	43.1		
			1.40 to 1.60	8.5	15.0	23.1	7.5	42.2		
			1.65 to 1.95	8.0	14.0	22.4	7.0	31.4		
			2.30 to 2.70	7.5	13.0	21.8	6.5	30.7		
			3.00 to 3.60	7.0	13.0	21.6	6.0	30.5		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.5	C_L = 15 pF, R_L = 1 MΩ	1.0	–	15.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	6.0	12.0	17.2	5.5	21.5		
			1.40 to 1.60	5.8	11.0	15.7	5.0	20.3		
			1.65 to 1.95	5.5	10.0	14.9	4.5	19.6		
			2.30 to 2.70	5.0	9.0	14.3	4.0	18.9		
			3.00 to 3.60	4.5	.0	14.2	3.5	18.7		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.8	C_L = 15 pF, R_L = 1 MΩ	1.0	–	14.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	5.0	8.0	14.2	5.5	18.2		
			1.40 to 1.60	4.5	7.0	12.7	4.0	17.0		
			1.65 to 1.95	4.0	6.0	11.9	3.5	16.3		
			2.30 to 2.70	3.5	5.0	11.3	3.0	15.7		
			3.00 to 3.60	3.5	5.0	11.2	2.5	14.4		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 2.5	C_L = 15 pF, R_L = 1 MΩ	1.0	–	12.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	4.0	7.0	11.3	3.5	14.9		
			1.40 to 1.60	3.5	6.0	9.8	3.0	13.6		
			1.65 to 1.95	3.0	5.0	9.1	2.5	12.0		
			2.30 to 2.70	2.5	4.0	8.5	2.0	11.3		
			3.00 to 3.60	2.5	4.0	8.3	2.0	11.1		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 3.3	C_L = 15 pF, R_L = 1 MΩ	1.0	–	11.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	3.0	6.0	10.5	2.0	14.2		
			1.40 to 1.60	2.5	5.0	8.6	1.5	11.0		
			1.65 to 1.95	2.0	4.0	7.8	1.0	10.3		
			2.30 to 2.70	1.5	3.0	7.2	1.0	9.7		
			3.00 to 3.60	1.5	3.0	7.0	1.0	9.4		

AC ELECTRICAL CHARACTERISTIICS (continued)

Symbol	Parameter	Condition	V_{CC} (V)	T_A = +25°C			T_A = −40 to 85°C		Unit	Figure
				Min	Typ	Max	Min	Max		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.0	C_L = 30 pF, R_L = 1 MΩ	1.0	–	34.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	19.0	32.0	48.6	15.0	55.5		
			1.40 to 1.60	18.0	31.0	47.1	14.0	52.3		
			1.65 to 1.95	17.0	30.0	46.4	13.0	50.6		
			2.30 to 2.70	16.0	29.0	45.9	12.0	49.2		
			3.00 to 3.60	15.0	28.0	45.8	10.0	49.1		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.2	C_L = 30 pF, R_L = 1 MΩ	1.0	–	22.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	11.0	19.0	29.0	10.0	46.5		
			1.40 to 1.60	10.0	18.0	27.5	9.0	42.6		
			1.65 to 1.95	9.0	17.0	26.7	8.0	36.7		
			2.30 to 2.70	8.5	16.0	26.1	7.0	36.0		
			3.00 to 3.60	8.0	16.0	26.0	6.0	35.9		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.5	C_L = 30 pF, R_L = 1 MΩ	1.0	–	16.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	6.0	13.0	19.8	5.5	25.3		
			1.40 to 1.60	5.8	12.0	18.3	5.0	23.0		
			1.65 to 1.95	5.5	11.0	17.6	4.5	22.4		
			2.30 to 2.70	5.0	10.0	17.0	4.0	21.7		
			3.00 to 3.60	4.5	9.0	16.8	3.5	21.5		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 1.8	C_L = 30 pF, R_L = 1 MΩ	1.0	–	15.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	5.0	11.0	16.2	5.5	20.4		
			1.40 to 1.60	4.5	10.0	14.7	4.0	19.2		
			1.65 to 1.95	4.0	9.0	13.9	3.5	18.5		
			2.30 to 2.70	3.5	8.0	13.3	3.0	17.9		
			3.00 to 3.60	3.5	8.0	13.1	2.5	17.6		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 2.5	C_L = 30 pF, R_L = 1 MΩ	1.0	–	13.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	4.0	8.0	12.7	3.5	15.9		
			1.40 to 1.60	3.5	7.0	11.2	3.0	14.3		
			1.65 to 1.95	3.0	6.0	10.5	2.5	13.6		
			2.30 to 2.70	2.5	5.0	9.9	2.0	12.8		
			3.00 to 3.60	2.5	5.0	9.7	2.0	12.5		
t_{PHL}, t_{PLH}	Propagation Delay Output Translation V_{CC} (V) = 3.3	C_L = 30 pF, R_L = 1 MΩ	1.0	–	12.0	–	–	–	ns	Figure 3, Figure 4
			1.10 to 1.30	3.0	8.0	11.7	2.0	15.0		
			1.40 to 1.60	2.5	7.0	9.8	1.5	12.2		
			1.65 to 1.95	2.0	6.0	8.9	1.0	11.5		
			2.30 to 2.70	1.5	5.0	8.3	1.0	10.7		
			3.00 to 3.60	1.5	5.0	8.1	1.0	10.4		

CAPACITANCE

Symbol	Parameter	Conditions	V_{CC} / V_{CC1} (V)	T_A = +25°C	Unit
				Typ	
C_{IN}	Input Capacitance			2	pF
$C_{I/O}$	Input/Output Capacitance			4	pF
C_{PD}	Power Dissipation Capacitance	V_I = 0 V or V_{CC1}, f = 10 MHz, V_{CC} / V_{CC1} = 3.6 V	1.0 to 3.60	8	pF

Translator Power−up Sequence Recommendations

To ensure that the system does not experience unnecessary I_{CC} current draw, bus contention, or oscillations during power−up; adhere to the following guidelines. This device is designed with the output pin(s) supplied by V_{CC} and the input pin(s) supplied by V_{CC1}. The first recommendation is to begin by powering up the input side of the device with V_{CC1}. The Input pin(s) should be ramped with or ahead of V_{CC1} or held LOW. This guards against bus contentions and oscillations as all inputs and the input V_{CC1} are powered at the same time. The output V_{CC} can then be powered to the target voltage level to which the device will translate. The output pin(s) then translate to logic levels dictated by the output V_{CC} levels.

Upon completion of these steps, the device can be configured for the desired operation. Following these steps helps prevent possible damage to the translator device as well as other system components

AC Loadings and Waveforms

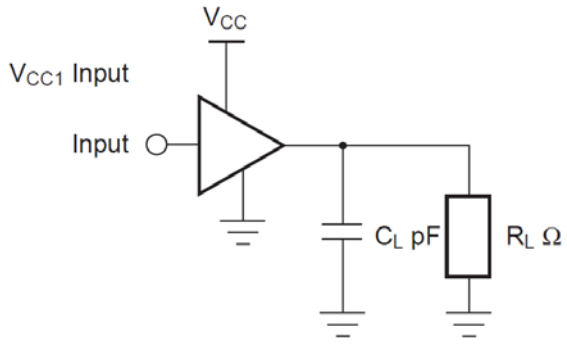


Figure 3. AC Test Circuit

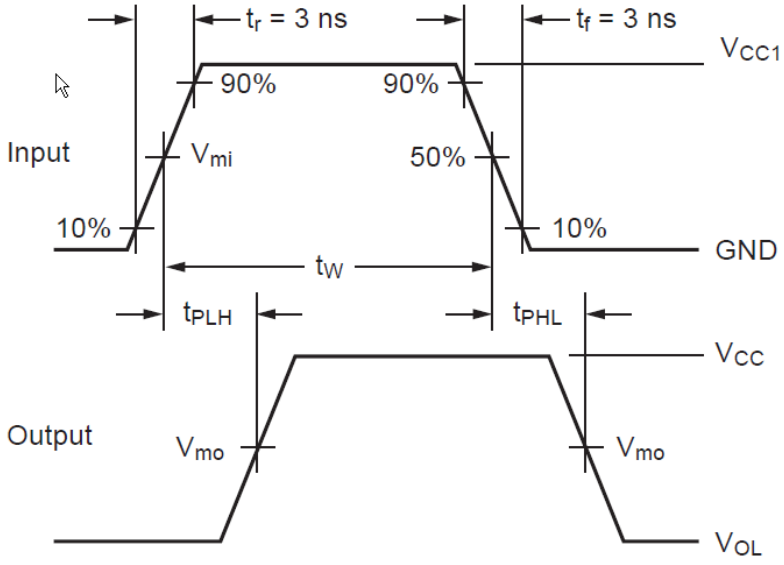


Figure 4. Waveform for Inverting and Non-Inverting Functions

Table 1. AC LOAD TABLE

Symbol	V_{CC}					
	3.3 V ±0.3 V	2.5 V ±0.2 V	1.8 V ±0.15 V	1.5 V ±0.10 V	1.2 V ±0.10 V	1.0 V
V_{mi}	1.5V	$V_{CC1}/2$	$V_{CC1}/2$	$V_{CC1}/2$	$V_{CC1}/2$	$V_{CC1}/2$
V_{mo}	1.5V	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$

ORDERING INFORMATION

Part Number	Top Mark	Package Type	Shipping†
FXLP34P5X	X34	5−Lead SC70, EIAJ SC−88a, 1.25 mm Wide (Pb−Free)	3000 / Tape & Reel
FXLP34L6X	X3	SIP6, 6−Lead MicroPak, 1.00 mm Wide (Pb−Free)	5000 / Tape & Reel
FXLP34FHX	X3	UDFN6, 6−Lead, MicroPak2, 1x1 mm Body, .35 mm Pitch (Pb−Free)	5000 / Tape & Reel

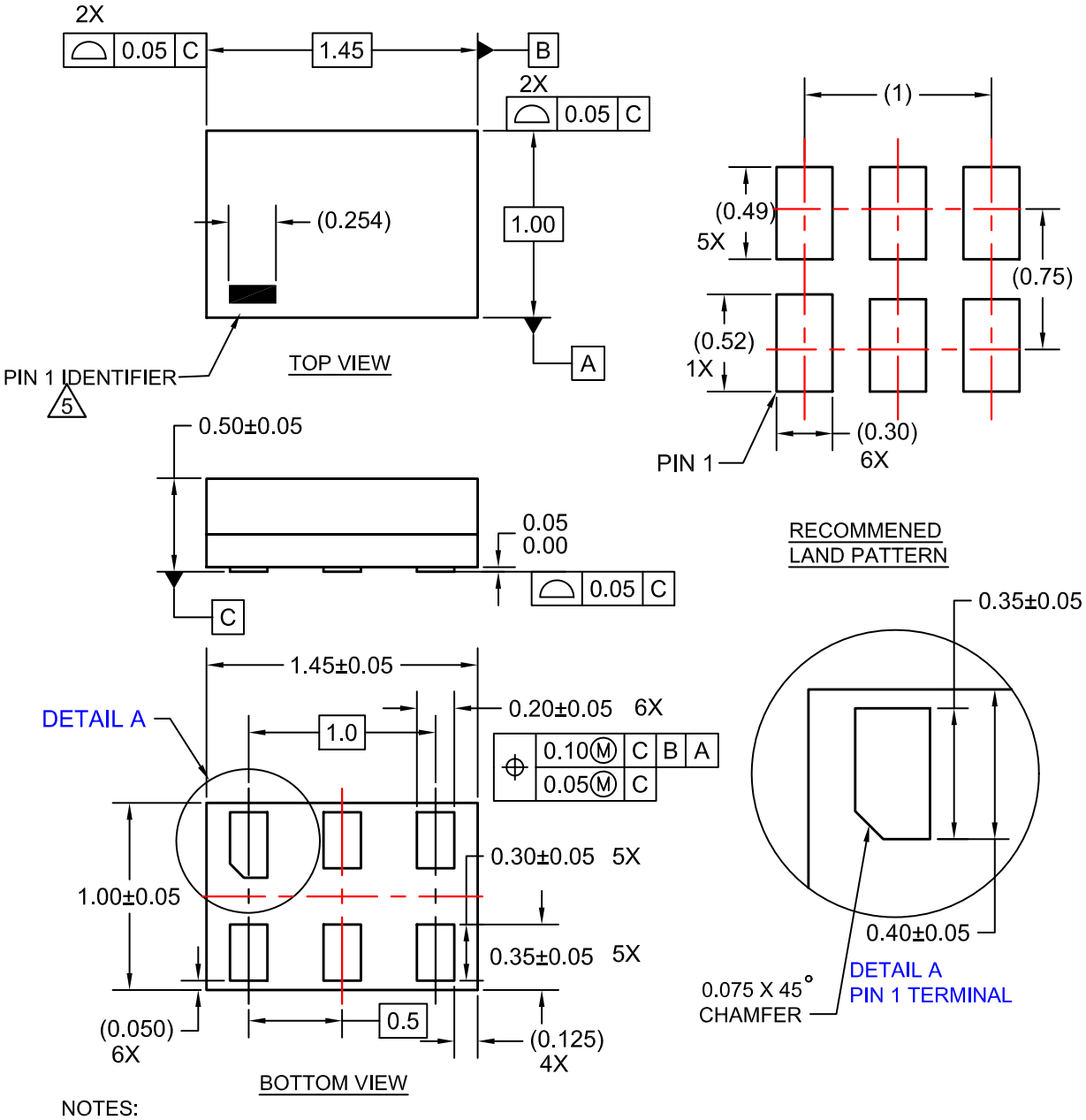
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

SIP6 1.45X1.0
CASE 127EB
ISSUE O

DATE 31 AUG 2016



NOTES:

1. CONFORMS TO JEDEC STANDARD MO-252 VARIATION UAAD
2. DIMENSIONS ARE IN MILLIMETERS
3. DRAWING CONFORMS TO ASME Y14.5M-2009
4. PIN ONE IDENTIFIER IS 2X LENGTH OF ANY OTHER LINE IN THE MARK CODE LAYOUT.

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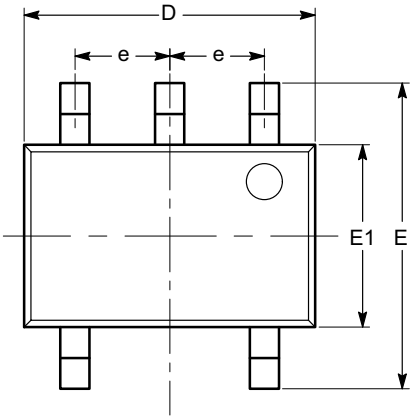
DESCRIPTION:	**SIP6 1.45X1.0**	**PAGE 1 OF 1**

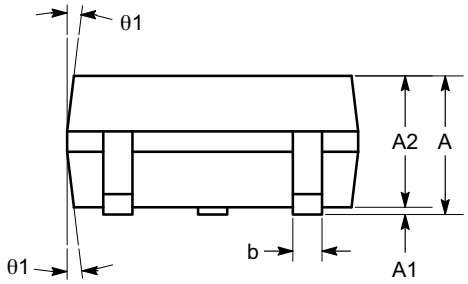
SC−88A (SC−70 5 Lead), 1.25x2
CASE 419AC−01
ISSUE A

DATE 29 JUN 2010

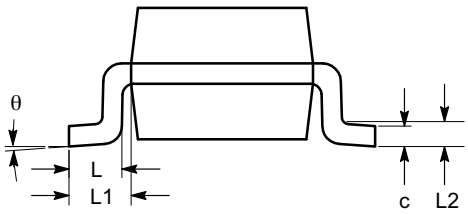


TOP VIEW

SYMBOL	MIN	NOM	MAX
A	0.80		1.10
A1	0.00		0.10
A2	0.80		1.00
b	0.15		0.30
c	0.10		0.18
D	1.80	2.00	2.20
E	1.80	2.10	2.40
E1	1.15	1.25	1.35
e		0.65 BSC	
L	0.26	0.36	0.46
L1		0.42 REF	
L2		0.15 BSC	
θ	0°		8°
θ1	4°		10°



SIDE VIEW



END VIEW

Notes:
(1) All dimensions are in millimeters. Angles in degrees.
(2) Complies with JEDEC MO-203.

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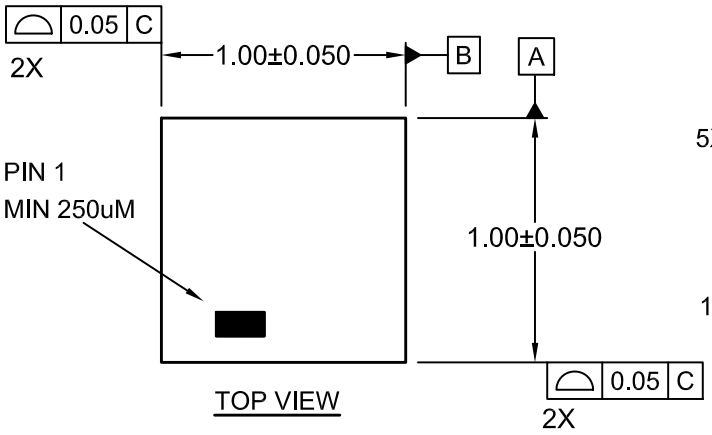
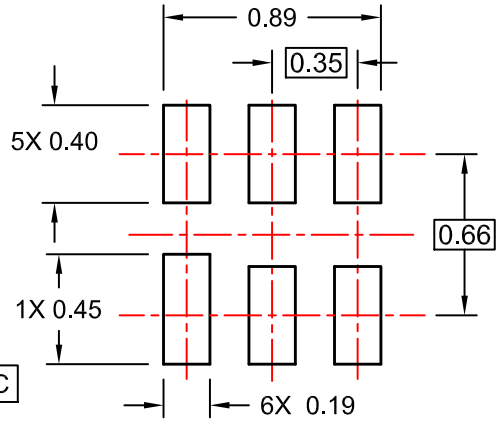
DESCRIPTION:	**SC−88A (SC−70 5 LEAD), 1.25X2**		**PAGE 1 OF 1**

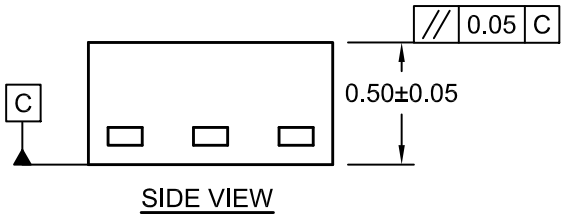
UDFN6 1.0X1.0, 0.35P
CASE 517DP
ISSUE O

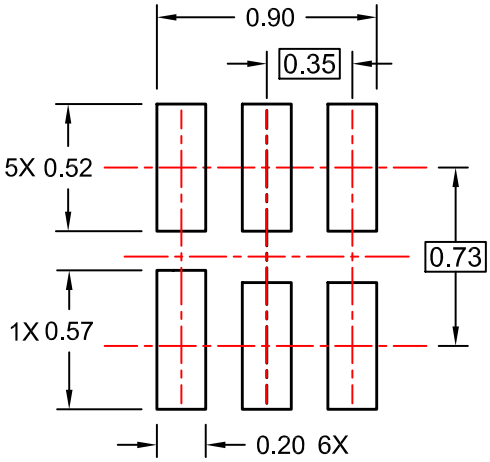
DATE 31 AUG 2016



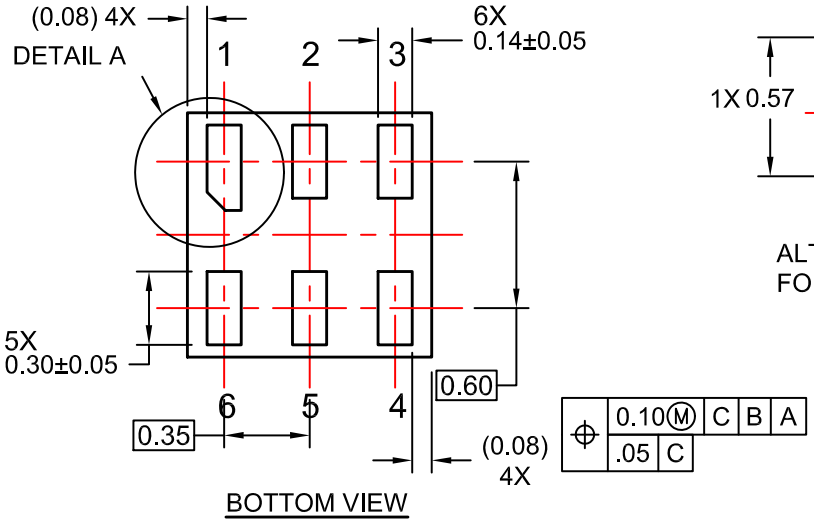


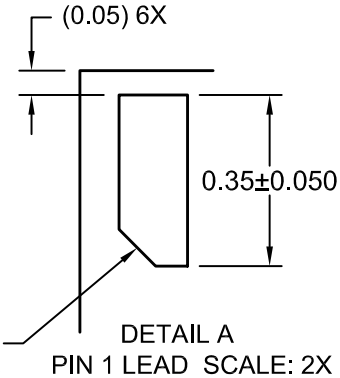
RECOMMENDED LAND PATTERN
FOR SPACE CONSTRAINED PCB





ALTERNATIVE LAND PATTERN
FOR UNIVERSAL APPLICATION





NOTES:

A. COMPLIES TO JEDEC MO-252 STANDARD
B. DIMENSIONS ARE IN MILLIMETERS.
C. DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 2009

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DESCRIPTION:	**UDFN6 1.0X1.0, 0.35P**	**PAGE 1 OF 1**

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