April 2003
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FXLP34
Single Bit Uni-Directional Translator

General 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 Fairchild's Ultra Low Power (ULP) series of products. This device operates with V_{CC} values from 1.0V to 3.6V, 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

- 1.0V to 3.6V V_{CC} supply operation
- Converts any voltage (1.0V to 3.6V) to (1.0V to 3.6V)
- 4.6V tolerant inputs and outputs
- t_{PD}
  - 4 ns typ for 3.0V to 3.6V V_{CC}
  - 5 ns typ for 2.3V to 2.7V V_{CC}
  - 6 ns typ for 1.65V to 1.95V V_{CC}
  - 7 ns typ for 1.40V to 1.60V V_{CC}
  - 11 ns typ for 1.10V to 1.30V V_{CC}
  - 27 ns typ for 1.0V V_{CC}
- Power-Off high impedance inputs and outputs
- Static Drive (I_{OH}/I_{OL})
  - ±2.6 mA @ 3.00V V_{CC}
  - ±2.1 mA @ 2.30V V_{CC}
  - ±1.5 mA @ 1.65V V_{CC}
  - ±1.0 mA @ 1.40V V_{CC}
  - ±0.5 mA @ 1.10V V_{CC}
  - ±20 µA @ 1.0V V_{CC}
- Uses patented Quiet Series™ noise/EMI reduction circuitry
- Ultra small MicroPak™ leadless package
- Ultra low dynamic power

Ordering Code:

Order Number	Package Number	Product Code Top Mark	Package Description	Supplied As
FXLP34P5X	MAA05A	X34	5-Lead SC70, EIAJ SC-88a, 1.25mm Wide	3k Units on Tape and Reel
FXLP34L6X	MAC06A	X3	6-Lead MicroPak, 1.0mm Wide	5k Units on Tape and Reel

Pin Descriptions

Pin Names	Description
A	Input
Y	Output
NC	No Connect
V_{CC1}	Input Translation Voltage
V_{CC}	Output Translation Voltage

Function Table

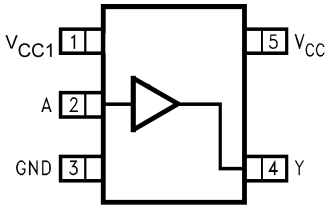
Y = A

Inputs	Output
A	**Y**
L	L
H	H

H = HIGH Logic Level
L = LOW Logic Level

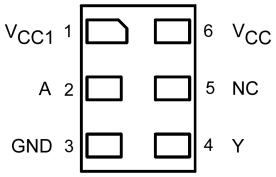
Connection Diagrams

Pin Assignments for SC70



(Top View)

Pad Assignments for MicroPak



(Top Thru View)

Absolute Maximum Ratings (Note 1)

Supply Voltage (V_{CC}, V_{CC1})	−0.5V to +4.6V
DC Input Voltage (V_{IN})	−0.5V to +4.6V
DC Output Voltage (V_{OUT})	
HIGH or LOW State (Note 2)	−0.5V to V_{CC} +0.5V
V_{CC} = 0V	−0.5V to 4.6V
DC Input Diode Current (I_{IK}) V_{IN} < 0V	±50 mA
DC Output Diode Current (I_{OK})	
V_{OUT} < 0V	−50 mA
V_{OUT} < V_{CC}	+50 mA
DC Output Source/Sink Current (I_{OH}/I_{OL})	± 50 mA
DC V_{CC} or Ground Current per	
Supply Pin (I_{CC} or Ground)	± 100 mA
Storage Temperature Range (T_{STG})	−65°C to +150°C

Recommended Operating Conditions (Note 3)

Supply Voltage (V_{CC}, V_{CC1})	1.0V to 3.6V
Input Voltage (V_{IN})	0.0V to 3.6V
Output Voltage (V_{OUT})	
HIGH or LOW State	0V to V_{CC}
V_{CC} = 0V	0V to 3.6V
Output Current in I_{OH}/I_{OL}	
V_{CC} = 3.0V to 3.6V	±2.6 mA
V_{CC} = 2.3V to 2.7V	± 2.1 mA
V_{CC} = 1.65V to 1.95V	± 1.5 mA
V_{CC} = 1.40V to 1.60V	± 1.0 mA
V_{CC} = 1.10V to 1.30V	±0.5 mA
V_{CC} = 0.9V	±20 µA
Free Air Operating Temperature (T_A)	−40°C to +85°C
Minimum Input Edge Rate ($\Delta t/\Delta V$)	
V_{IN} = 0.8V to 2.0V, V_{CC1} = 3.0V	10 ns/V

Note 1: Absolute Maximum Ratings: are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the Electrical Characteristics tables are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

Note 2: I_O Absolute Maximum Rating must be observed.

Note 3: Unused inputs must be held HIGH or LOW. They may not float.

DC Electrical Characteristics

Symbol	Parameter	V_{CC} (V)	V_{CC1} (V)	T_A = +25°C Min	T_A = +25°C Max	T_A = −40°C to +85°C Min	T_A = −40°C to +85°C Max	Units	Conditions
V_{IH}	HIGH Level Input Voltage (V_{CC1})	1.0 to 3.6	1.0	0.65 x V_{CC1}		0.65 x V_{CC1}		V	
			1.10 ≤ V_{CC1} ≤ 1.30	0.65 x V_{CC1}		0.65 x V_{CC1}			
			1.40 ≤ V_{CC1} ≤ 1.60	0.65 x V_{CC1}		0.65 x V_{CC1}			
			1.65 ≤ V_{CC1} ≤ 1.95	0.65 x V_{CC1}		0.65 x V_{CC1}			
			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 Voltage	1.0 to 3.6	1.0		0.35 x V_{CC1}		0.35 x V_{CC1}	V	
			1.10 ≤ V_{CC1} ≤ 1.30		0.35 x V_{CC1}		0.35 x V_{CC1}		
			1.40 ≤ V_{CC1} ≤ 1.60		0.35 x V_{CC1}		0.35 x V_{CC1}		
			1.65 ≤ V_{CC1} ≤ 1.95		0.35 x V_{CC1}		0.35 x V_{CC1}		
			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 Voltage (V_{CC})	1.0	1.0 to 3.6	V_{CC} − 0.1		V_{CC} − 0.1		V	I_{OH} = −20 µA
		1.10 ≤ V_{CC} ≤ 1.30		V_{CC} − 0.1		V_{CC} − 0.1			
		1.40 ≤ V_{CC} ≤ 1.60		V_{CC} − 0.1		V_{CC} − 0.1			
		1.65 ≤ V_{CC} ≤ 1.95		V_{CC} − 0.1		V_{CC} − 0.1			
		2.30 ≤ V_{CC} ≤ 2.70		V_{CC} − 0.1		V_{CC} − 0.1			
		3.00 ≤ V_{CC} ≤ 3.60		V_{CC} − 0.1		V_{CC} − 0.1			
		1.10 ≤ V_{CC} ≤ 1.30	1.0 to 3.6	0.75 x V_{CC}		0.70 x V_{CC}			I_{OH} = −0.5 mA
		1.40 ≤ V_{CC} ≤ 1.60	1.0 to 3.6	1.07		0.99			I_{OH} = −1.0 mA
		1.65 ≤ V_{CC} ≤ 1.95	1.0 to 3.6	1.24		1.22			I_{OH} = −1.5 mA
		2.30 ≤ V_{CC} ≤ 2.70	1.0 to 3.6	1.95		1.87			I_{OH} = −2.1 mA
		3.00 ≤ V_{CC} ≤ 3.60	1.0 to 3.6	2.61		2.55			I_{OH} = −2.6 mA

DC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC} (V)	V_{CC1} (V)	$T_A = +25°C$ Min	$T_A = +25°C$ Max	$T_A = -40°C$ to $+85°C$ Min	$T_A = -40°C$ to $+85°C$ Max	Units	Conditions
V_{OL}	LOW Level Output Voltage	1.0	1.0 to 3.6		0.1		0.1	V	I_{OL} = 20 μA
		1.10 ≤ V_{CC} ≤ 1.30			0.1		0.1		
		1.40 ≤ V_{CC} ≤ 1.60			0.1		0.1		
		1.65 ≤ V_{CC} ≤ 1.95			0.1		0.1		
		2.30 ≤ V_{CC} ≤ 2.70			0.1		0.1		
		3.00 ≤ V_{CC} ≤ 3.60			0.1		0.1		
		1.10 ≤ V_{CC} ≤ 1.30	1.0 to 3.6		0.30 x V_{CC}		0.30 x V_{CC}		I_{OL} = 0.5 mA
		1.40 ≤ V_{CC} ≤ 1.60	1.0 to 3.6		0.31		0.37		I_{OL} = 1.0 mA
		1.65 ≤ V_{CC} ≤ 1.95	1.0 to 3.6		0.31		0.35		I_{OL} = 1.5 mA
		2.30 ≤ V_{CC} ≤ 2.70	1.0 to 3.6		0.31		0.33		I_{OL} = 2.1 mA
		3.00 ≤ V_{CC} ≤ 3.60	1.0 to 3.6		0.31		0.33		I_{OL} = 2.6 mA
I_{IN}	Input Leakage Current		1.0 to 3.60		±0.1		±1.0	μA	0 ≤ V_I ≤ 3.6V
I_{OFF}	Power Off Leakage Current	0	0		1.0		5.0	μA	0 ≤ (V_I, V_O) ≤ 3.6V
I_{CC}	Quiescent Supply Current	1.0 to 3.60	1.0 to 3.60		0.9		5.0	μA	V_I = V_{CC} or GND

AC Electrical Characteristics

Symbol	Parameter	V_{CC1} (V)	$T_A = +25°C$ Min	$T_A = +25°C$ Typ	$T_A = +25°C$ Max	$T_A = -40°C$ to $+85°C$ Min	$T_A = -40°C$ to $+85°C$ Max	Units	Conditions	Figure Number
t_{PHL}	Propagation Delay	1.0		26.0						
t_{PLH}	Output Translation	1.10 to 1.30	15.0	25.0	38.1	12.0	43.3			
	V_{CC} (V) = 1.0	1.40 to 1.60	14.0	24.0	36.7	11.0	42.0	ns	C_L = 10 pF	Figures 1, 2
		1.65 to 1.95	13.0	23.0	36.0	10.0	41.4		R_L = 1 MΩ	
		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}	Propagation Delay	1.0		18.0						
t_{PLH}	Output Translation	1.10 to 1.30	8.0	15.0	23.2	6.0	41.0			
	V_{CC} (V) = 1.2	1.40 to 1.60	7.5	14.0	21.7	5.5	39.1	ns	C_L = 10 pF	Figures 1, 2
		1.65 to 1.95	7.0	13.0	20.9	5.0	32.3		R_L = 1 MΩ	
		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}	Propagation Delay	1.0		14.0						
t_{PLH}	Output Translation	1.10 to 1.30	5.0	11.0	16.3	4.0	20.6			
	V_{CC} (V) = 1.5	1.40 to 1.60	4.8	10.0	14.8	3.5	19.3	ns	C_L = 10 pF	Figures 1, 2
		1.65 to 1.95	4.5	9.0	14.1	3.0	18.7		R_L = 1 MΩ	
		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}	Propagation Delay	1.0		13.0						
t_{PLH}	Output Translation	1.10 to 1.30	4.0	9.0	13.5	3.0	17.5			
	V_{CC} (V) = 1.8	1.40 to 1.60	3.5	8.0	12.0	2.5	16.3	ns	C_L = 10 pF	Figures 1, 2
		1.65 to 1.95	3.0	7.0	11.3	2.0	15.6		R_L = 1 MΩ	
		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}	Propagation Delay	1.0		12.0						
t_{PLH}	Output Translation	1.10 to 1.30	3.0	7.0	10.9	2.5	14.3			
	V_{CC} (V) = 2.5	1.40 to 1.60	2.5	6.0	9.4	2.0	13.1	ns	C_L = 10 pF	Figures 1, 2
		1.65 to 1.95	2.0	5.0	8.6	1.5	11.4		R_L = 1 MΩ	
		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			

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC1} (V)	$T_A = +25°C$			$T_A = -40°C$ to $+85°C$		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t_{PHL}	Propagation Delay	1.0		11.0						
t_{PLH}	Output Translation	1.10 to 1.30	3.0	6.0	10.1	2.0	13.8			
	V_{CC} (V) = 3.3	1.40 to 1.60	2.5	5.0	8.2	1.5	10.5	ns	C_L = 10 pF	Figures
		1.65 to 1.95	2.0	4.0	7.4	1.0	9.9		R_L = 1 MΩ	1, 2
		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			
t_{PHL}	Propagation Delay	1.0		28.0						
t_{PLH}	Output Translation	1.10 to 1.30	16.0	27.0	43.0	12.0	44.8			
	V_{CC} (V) = 1.0	1.40 to 1.60	15.0	26.0	41.6	11.0	43.6	ns	C_L = 15 pF	Figures
		1.65 to 1.95	14.0	25.0	40.9	10.0	47.9		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		19.0						
t_{PLH}	Output Translation	1.10 to 1.30	9.0	16.0	24.6	8.0	43.1			
	V_{CC} (V) = 1.2	1.40 to 1.60	8.5	15.0	23.1	7.5	42.2	ns	C_L = 15 pF	Figures
		1.65 to 1.95	8.0	14.0	22.4	7.0	31.4		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		15.0						
t_{PLH}	Output Translation	1.10 to 1.30	6.0	12.0	17.2	5.5	21.5			
	V_{CC} (V) = 1.5	1.40 to 1.60	5.8	11.0	15.7	5.0	20.3	ns	C_L = 15 pF	Figures
		1.65 to 1.95	5.5	10.0	14.9	4.5	19.6		R_L = 1 MΩ	1, 2
		2.30 to 2.70	5.0	9.0	14.3	4.0	18.9			
		3.00 to 3.60	4.5	9.0	14.2	3.5	18.7			
t_{PHL}	Propagation Delay	1.0		14.0						
t_{PLH}	Output Translation	1.10 to 1.30	5.0	8.0	14.2	5.5	18.2			
	V_{CC} (V) = 1.8	1.40 to 1.60	4.5	7.0	12.7	4.0	17.0	ns	C_L = 15 pF	Figures
		1.65 to 1.95	4.0	6.0	11.9	3.5	16.3		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		12.0						
t_{PLH}	Output Translation	1.10 to 1.30	4.0	7.0	11.3	3.5	14.9			
	V_{CC} (V) = 2.5	1.40 to 1.60	3.5	6.0	9.8	3.0	13.6	ns	C_L = 15 pF	Figures
		1.65 to 1.95	3.0	5.0	9.1	2.5	12.0		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		11.0						
t_{PLH}	Output Translation	1.10 to 1.30	3.0	6.0	10.5	2.0	14.2			
	V_{CC} (V) = 3.3	1.40 to 1.60	2.5	5.0	8.6	1.5	11.0	ns	C_L = 15 pF	Figures
		1.65 to 1.95	2.0	4.0	7.8	1.0	10.3		R_L = 1 MΩ	1, 2
		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			
t_{PHL}	Propagation Delay	1.0		34.0						
t_{PLH}	Output Translation	1.10 to 1.30	19.0	32.0	48.6	15.0	55.5			
	V_{CC} (V) = 1.0	1.40 to 1.60	18.0	31.0	47.1	14.0	52.3	ns	C_L = 30 pF	Figures
		1.65 to 1.95	17.0	30.0	46.4	13.0	50.6		R_L = 1 MΩ	1, 2
		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			

AC Electrical Characteristics (Continued)

Symbol	Parameter	V_{CC1} (V)	$T_A = +25°C$			$T_A = -40°C$ to $+85°C$		Units	Conditions	Figure Number
			Min	Typ	Max	Min	Max			
t_{PHL}	Propagation Delay	1.0		22.0						
t_{PLH}	Output Translation	1.10 to 1.30	11.0	19.0	29.0	10.0	46.5			
	V_{CC} (V) = 1.2	1.40 to 1.60	10.0	18.0	27.5	9.0	42.6	ns	C_L = 30 pF	Figures
		1.65 to 1.95	9.0	17.0	26.7	8.0	36.7		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		16.0						
t_{PLH}	Output Translation	1.10 to 1.30	6.0	13.0	19.8	5.5	25.3			
	V_{CC} (V) = 1.5	1.40 to 1.60	5.8	12.0	18.3	5.0	23.0	ns	C_L = 30 pF	Figures
		1.65 to 1.95	5.5	11.0	17.6	4.5	22.4		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		15.0						
t_{PLH}	Output Translation	1.10 to 1.30	5.0	11.0	16.2	5.5	20.4			
	V_{CC} (V) = 1.8	1.40 to 1.60	4.5	10.0	14.7	4.0	19.2	ns	C_L = 30 pF	Figures
		1.65 to 1.95	4.0	9.0	13.9	3.5	18.5		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		13.0						
t_{PLH}	Output Translation	1.10 to 1.30	4.0	8.0	12.7	3.5	15.9			
	V_{CC} (V) = 2.5	1.40 to 1.60	3.5	7.0	11.2	3.0	14.3	ns	C_L = 30 pF	Figures
		1.65 to 1.95	3.0	6.0	10.5	2.5	13.6		R_L = 1 MΩ	1, 2
		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}	Propagation Delay	1.0		12.0						
t_{PLH}	Output Translation	1.10 to 1.30	3.0	8.0	11.7	2.0	15.0			
	V_{CC} (V) = 3.3	1.40 to 1.60	2.5	7.0	9.8	1.5	12.2	ns	C_L = 30 pF	Figures
		1.65 to 1.95	2.0	6.0	8.9	1.0	11.5		R_L = 1 MΩ	1, 2
		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			
C_{IN}	Input Capacitance	0		2.0				pF		
C_{OUT}	Output Capacitance	0		4.0				pF		
C_{PD}	Power Dissipation Capacitance	V_{CC}/V_{CC1} = (1.0 to 3.60)		8.0				pF	V_I = 0V or V_{CC1} f = 10 MHz V_{CC}/V_{CC1} = 3.6	

Translator Power Up Sequence Recommendations

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

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

AC Loading and Waveforms

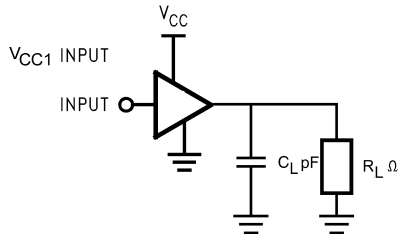


FIGURE 1. AC Test Circuit

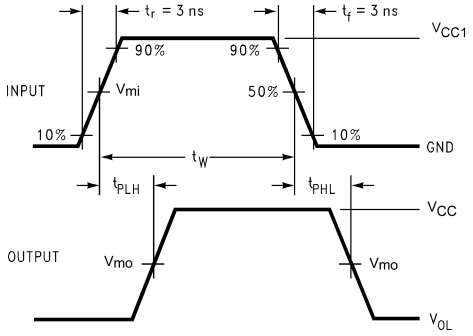


FIGURE 2. Waveform for Inverting and Non-Inverting Functions

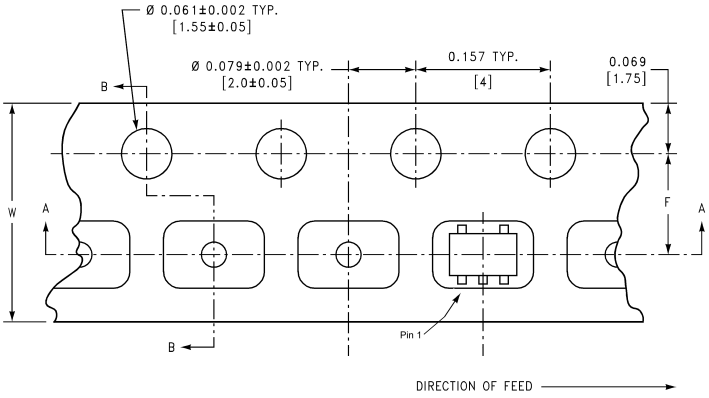
Symbol	V_{CC}					
	3.3V ± 0.3V	**2.5V ± 0.2V**	**1.8V ± 0.15V**	**1.5V ± 0.10V**	**1.2V ± 0.10V**	**1.0V**
V_{mi}	1.5V	$V_{CC1}/2$	$V_{CC1}/2$	$V_{CC1}/2$	$V_{CC1}/2$	$V_{CC1}/2$
V_{mo}	1.5V	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$

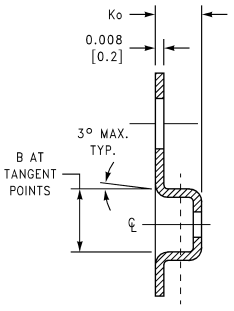
Tape and Reel Specification

TAPE FORMAT for SC70

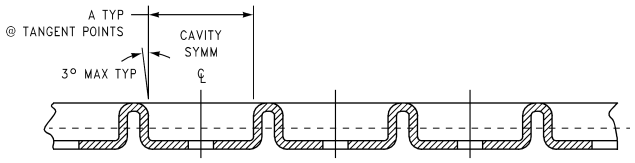
Package Designator	Tape Section	Number Cavities	Cavity Status	Cover Tape Status
P5X	Leader (Start End)	125 (typ)	Empty	Sealed
	Carrier	3000	Filled	Sealed
	Trailer (Hub End)	75 (typ)	Empty	Sealed

TAPE DIMENSIONS inches (millimeters)

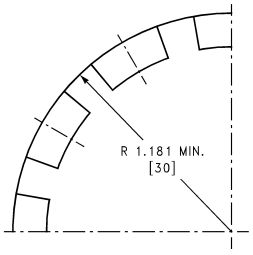




SECTION B–B



SECTION A–A



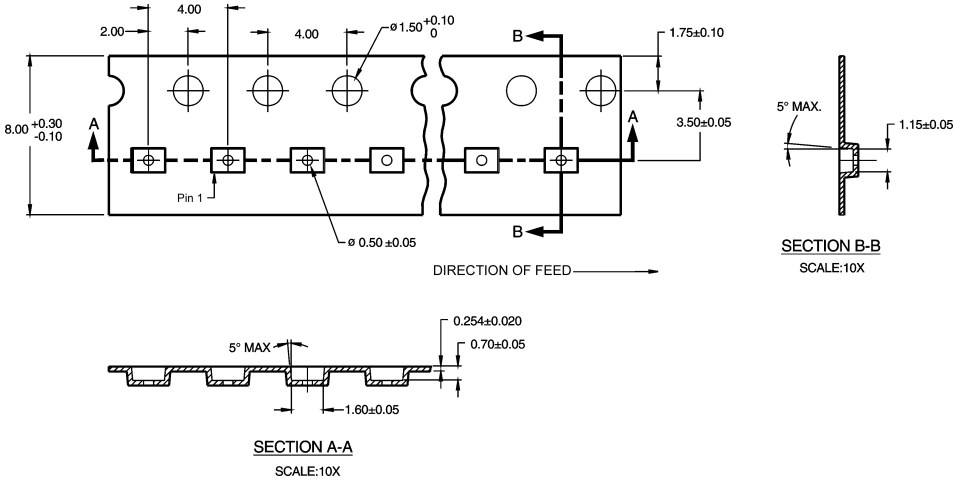
BEND RADIUS NOT TO SCALE

Tape and Reel Specification (Continued)

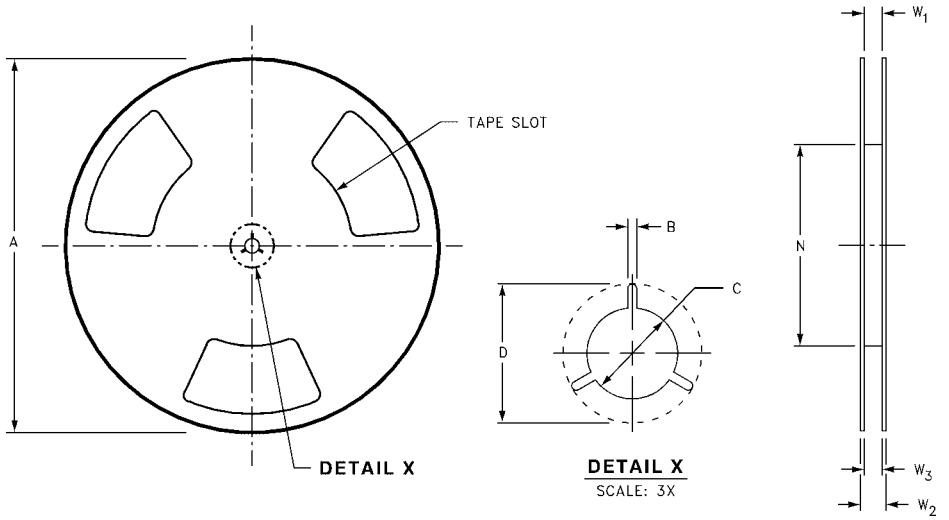
TAPE FORMAT for MicroPak

Package Designator	Tape Section	Number Cavities	Cavity Status	Cover Tape Status
L6X	Leader (Start End)	125 (typ)	Empty	Sealed
	Carrier	5000	Filled	Sealed
	Trailer (Hub End)	75 (typ)	Empty	Sealed

TAPE DIMENSIONS inches (millimeters)

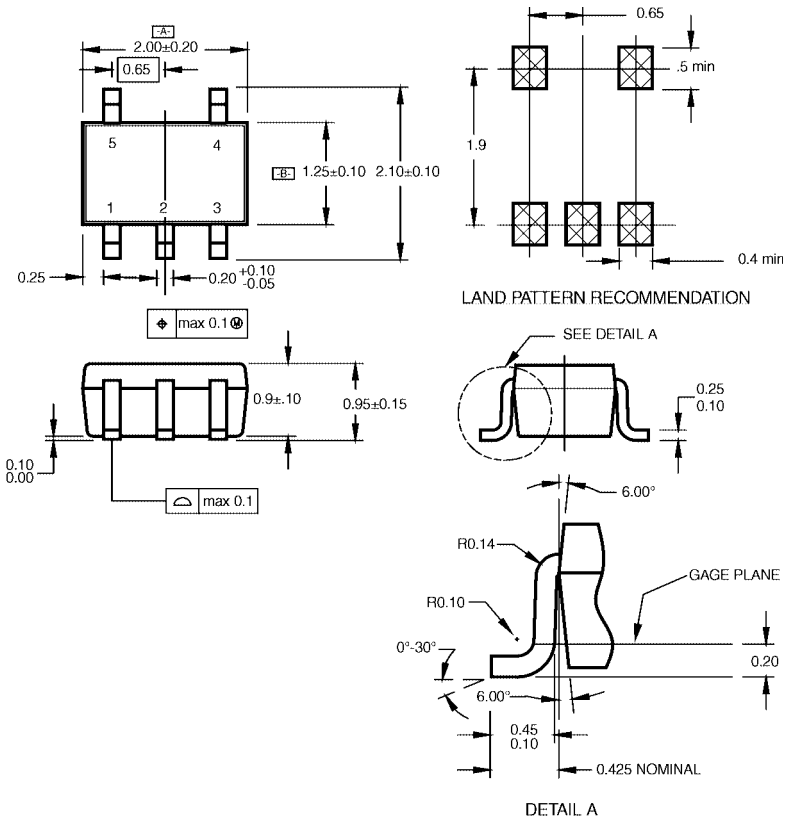


REEL DIMENSIONS inches (millimeters)



Tape Size	A	B	C	D	N	W1	W2	W3
8 mm	7.0 (177.8)	0.059 (1.50)	0.512 (13.00)	0.795 (20.20)	2.165 (55.00)	0.331 + 0.059/–0.000 (8.40 + 1.50/–0.00)	0.567 (14.40)	W1 + 0.078/–0.039 (W1 + 2.00/–1.00)

Physical Dimensions inches (millimeters) unless otherwise noted



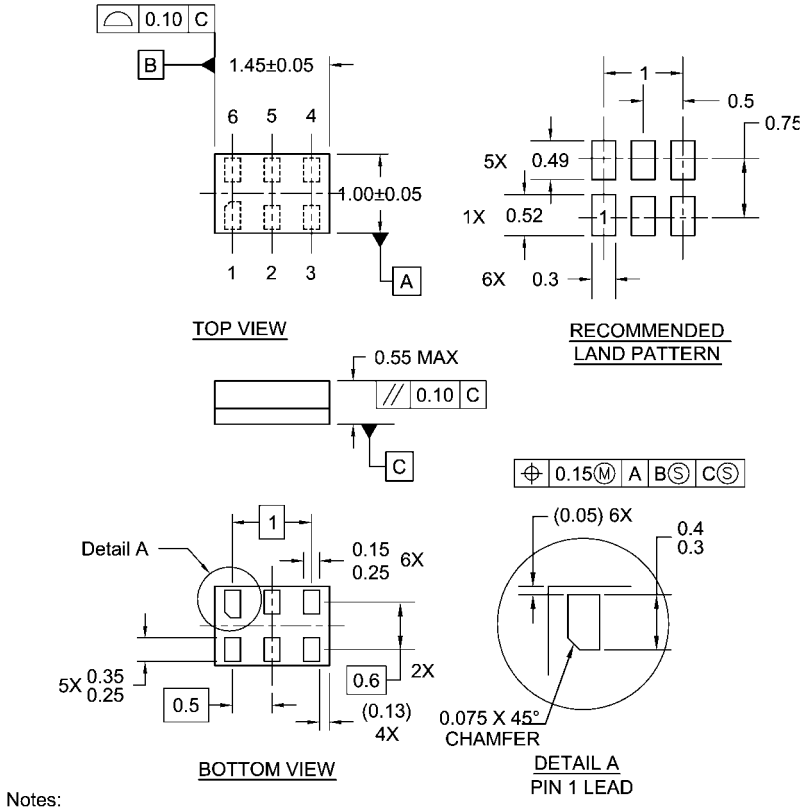
NOTES:

A. CONFORMS TO EIAJ REGISTERED OUTLINE DRAWING SC88A.
B. DIMENSIONS DO NOT INCLUDE BURRS OR MOLD FLASH.
C. DIMENSIONS ARE IN MILLIMETERS.

MAA05ARevC

5-Lead SC70, EIAJ SC-88a, 1.25mm Wide
Package Number MAA05A

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



Notes:

1. JEDEC PACKAGE REGISTRATION IS ANTICIPATED
2. DIMENSIONS ARE IN MILLIMETERS
3. DRAWING CONFORMS TO ASME Y14.5M-1994

MAC06ARevB

6-Lead MicroPak, 1.0mm Wide
Package Number MAC06A
(Preliminary)