

## Timing-Safe™ Peak EMI reduction IC

### General Features

- Clock distribution with Timing-Safe™ Peak EMI Reduction
- Input frequency range: 20MHz - 50MHz
- Zero input - output propagation delay
- Low-skew outputs
  - Output-output skew less than 250pS
  - Device-device skew less than 700pS
- Less than 200pS cycle-to-cycle jitter
- Available in 16pin, 150mil SOIC, 4.4mm TSSOP (ASM3P623S00E/F/K), and in 8pin, 150 mil SOIC, 4.4mm TSSOP Packages (ASM3P623S00B/C/J)
- 3.3V operation
- Industrial temperature range
- Advanced CMOS technology
- The First True Drop-in Solution

ASM3P623S00B/C/J is the eight-pin version and accepts one reference input and drives out one low-skew clock.

All parts have on-chip PLLs that lock to an input clock on the CLKIN pin. The PLL feedback is on-chip and is obtained from the CLKOUT pad, internal to the device.

Multiple ASM3P623S00E/F/K devices can accept the same input clock and distribute it. In this case, the skew between the outputs of the two devices is guaranteed to be less than 700pS.

All outputs have less than 200pS of cycle-to-cycle jitter. The input and output propagation delay is guaranteed to be less than 250pS, and the output-to-output skew is guaranteed to be less than 250pS.

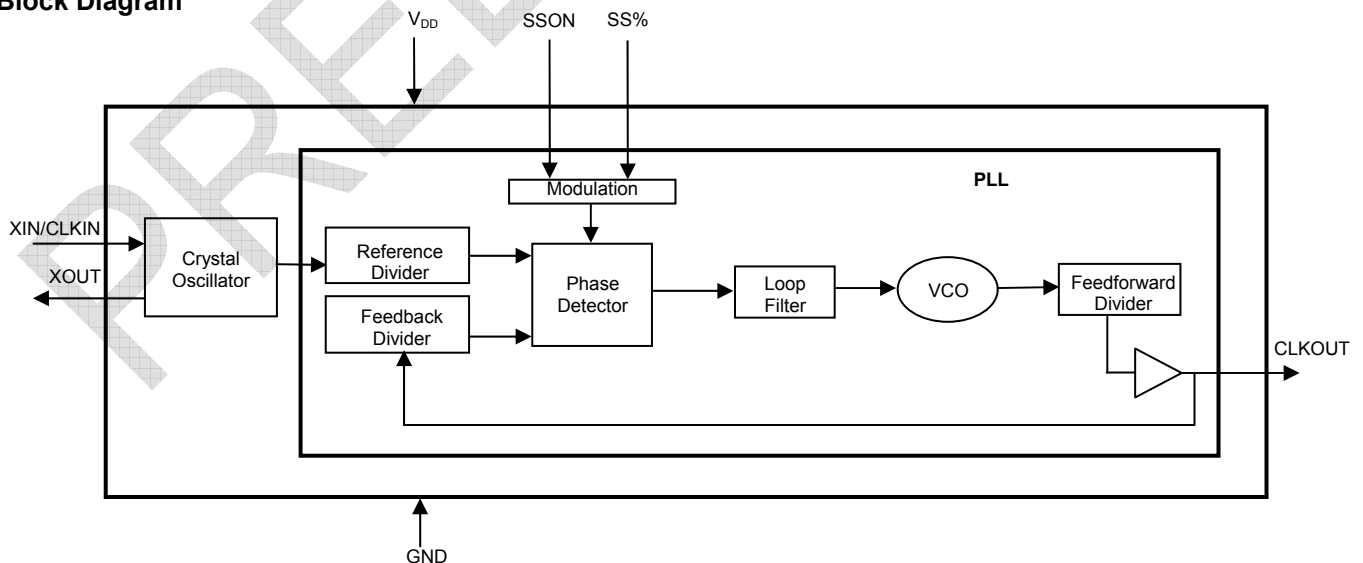
Refer “Spread Spectrum Control and Input-Output Skew Table” for deviations and Input-Output Skew for ASM3P623S00B/C/J and the ASM3P623S00E/F/K devices

### Functional Description

ASM3P623S00B/C/J/E/F/K is a versatile, 3.3V zero-delay buffer designed to distribute high-speed Timing-Safe™ clocks with Peak EMI reduction. ASM3P623S00E/F/K accepts one reference input and drives out eight low-skew clocks. It is available in a 16pin package. The

The ASM3P623S00B/C/J and the ASM3P623S00E/F/K are available in two different packages, as shown in the ordering information table.

### Block Diagram



## Spread Spectrum Frequency Generation

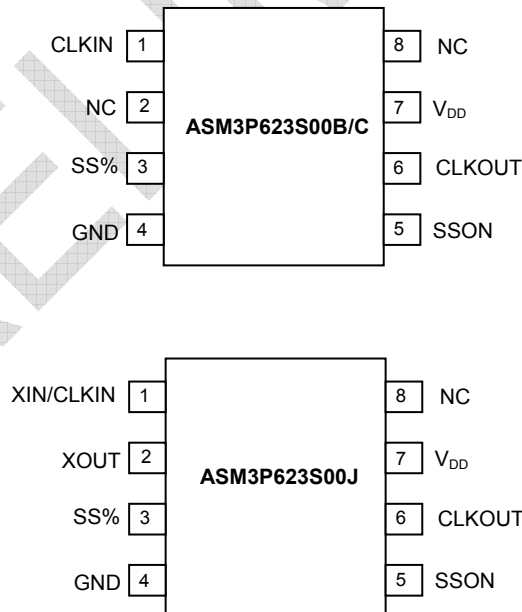
The clocks in digital systems are typically square waves with a 50% duty cycle and as frequencies increase the edge rates also get faster. Analysis shows that a square wave is composed of fundamental frequency and harmonics. The fundamental frequency and harmonics generate the energy peaks that become the source of EMI. Regulatory agencies test electronic equipment by measuring the amount of peak energy radiated from the equipment. In fact, the peak level allowed decreases as the frequency increases. The standard methods of reducing EMI are to use shielding, filtering, multi-layer

PCBs etc. These methods are expensive. Spread spectrum clocking reduces the peak energy by reducing the Q factor of the clock. This is done by slowly modulating the clock frequency. The ASM3P623S00B/C/J/E/F/K uses the center modulation spread spectrum technique in which the modulated output frequency varies above and below the reference frequency with a specified modulation rate. With center modulation, the average frequency is the same as the unmodulated frequency and there is no performance degradation

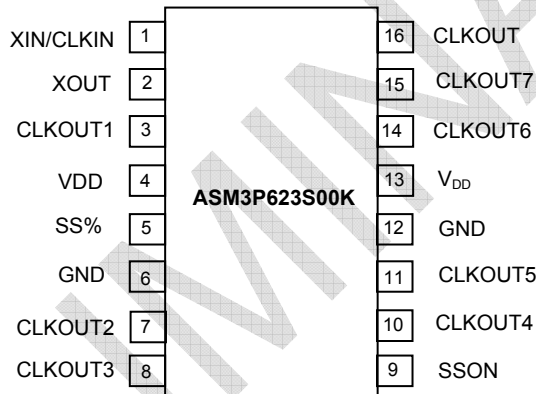
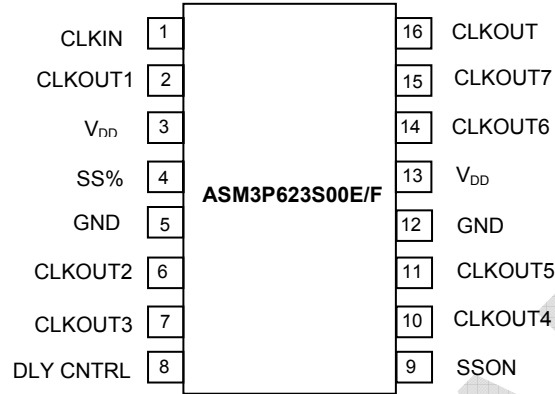
## Timing-Safe™ technology

Timing-Safe™ technology is the ability to modulate a clock source with Spread Spectrum technology and maintain synchronization with any associated data path.

## Pin Configuration (8 Pin Devices)



Pin Configuration (16 Pin Devices)



Pin Description for ASM3P623S00B/C

Pin #	Pin Name	Description
1	CLKIN	Input reference frequency, 5V-tolerant input
2	NC	No Connect
3	SS% <sup>3</sup>	Spread Spectrum Selection
4	GND	Ground
5	SSON <sup>3</sup>	Spread Spectrum enable and disable option When SSON is HIGH, the spread spectrum is enabled and when LOW, it turns off the spread spectrum.
6	CLKOUT <sup>1,2</sup>	Buffered clock output
7	VDD	3.3V supply
8	NC	No Connect

Notes:

1. This output is driven and has an internal feedback for the PLL.
2. Weak pull-down on output. 3. Weak pull-up on these inputs. 4. Buffered clock output is Timing-Safe™

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Pin Description for ASM3P623S00J

Pin #	Pin Name	Description
1	XIN/CLKIN	Crystal connection or external reference frequency input. This pin has dual functions. It can be connected either to an external crystal or an external reference clock.
2	XOUT	Crystal connection. If using an external reference, this pin must be left unconnected.
3	SS% <sup>3</sup>	Spread Spectrum Selection
4	GND	Ground
5	SSON <sup>3</sup>	Spread Spectrum enable and disable option When SSON is HIGH, the spread spectrum is enabled and when LOW, it turns off the spread spectrum.
6	CLKOUT <sup>1,2</sup>	Buffered clock output
7	VDD	3.3V supply
8	NC	No Connect

Notes:

1. This output is driven and has an internal feedback for the PLL.
2. Weak pull-down on output. 3. Weak pull-up on these inputs. 4. Buffered clock output is Timing-Safe™

Pin Description for ASM3P623S00E/F

Pin #	Pin Name	Description
1	CLKIN	Input reference frequency, 5V tolerant input
2	CLKOUT1 <sup>1</sup>	Buffered clock output
3	VDD	3.3V supply
4	SS% <sup>2</sup>	Spread Spectrum Selection
5	GND	Ground
6	CLKOUT2 <sup>1</sup>	Buffered clock output
7	CLKOUT3 <sup>1</sup>	Buffered clock output
8	DLY CNTRL	The pin is used to skew the outputs such that they align with the input. The skew can be in the range of 100-200pS
9	SSON <sup>3</sup>	Spread Spectrum enable and disable option. When SSON is HIGH, the spread spectrum is enabled and when LOW, it turns off the spread spectrum.
10	CLKOUT4 <sup>1</sup>	Buffered clock output
11	CLKOUT5 <sup>1</sup>	Buffered clock output
12	GND	Ground
13	VDD	3.3V supply
14	CLKOUT6 <sup>1</sup>	Buffered clock output
15	CLKOUT7 <sup>1</sup>	Buffered clock output
16	CLKOUT <sup>1,3</sup>	Buffered clock output

Notes:

1. Weak pull-down on all outputs. 2. Weak pull-up on these inputs.
3. This output is driven and has an internal feedback for the PLL.
4. Buffered clock outputs are Timing-Safe™

**Pin Description for ASM3P623S00K**

Pin #	Pin Name	Description
1	XIN/CLKIN	Crystal connection or external reference frequency input. This pin has dual functions. It can be connected either to an external crystal or an external reference clock.
2	XOUT	Crystal connection. If using an external reference, this pin must be left unconnected.
3	CLKOUT1 <sup>1</sup>	Buffered clock output
4	VDD	3.3V supply
5	SS% <sup>2</sup>	Spread Spectrum Selection
6	GND	Ground
7	CLKOUT2 <sup>1</sup>	Buffered clock output
8	CLKOUT3 <sup>1</sup>	Buffered clock output
9	SSON <sup>2</sup>	Spread Spectrum enable and disable option. When SSON is HIGH, the spread spectrum is enabled and when LOW, it turns off the spread spectrum.
10	CLKOUT4 <sup>1</sup>	Buffered clock output
11	CLKOUT5 <sup>1</sup>	Buffered clock output
12	GND	Ground
13	VDD	3.3V supply
14	CLKOUT6 <sup>1</sup>	Buffered clock output
15	CLKOUT7 <sup>1</sup>	Buffered clock output
16	CLKOUT <sup>1,3</sup>	Buffered clock output

Notes: 1. Weak pull-down on all outputs. 2. Weak pull-up on these inputs.  
 3. This output is driven and has an internal feedback for the PLL.  
 4. Buffered clock outputs are Timing-Safe™

**Spread Spectrum Control and Input-Output Skew Table**

(Note: The values given in the table are for an input frequency of 32MHz)

Device	SS%	Deviation	Input-Output Skew( $\pm T_{SKEW}$ )
ASM3P623S00B	0	$\pm 0.25\%$	0.125
	1	$\pm 0.5\%$	0.25
ASM3P623S00C	0	$\pm 0.125\%$	0.125
	1	$\pm 0.25\%$	0.25
ASM3P623S00J	0	$\pm 0.125\%$	0.125
	1	$\pm 0.25\%$	0.25
ASM3P623S00E	0	$\pm 0.25\%$	0.125
	1	$\pm 0.5\%$	0.25
ASM3P623S00F	0	$\pm 0.125\%$	0.125
	1	$\pm 0.25\%$	0.25
ASM3P623S00K	0	$\pm 0.125\%$	0.125
	1	$\pm 0.25\%$	0.25

Note:  $T_{SKEW}$  is measured in units of the Clock Period

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**Absolute Maximum Ratings**

Symbol	Parameter	Rating	Unit
VDD	Voltage on any pin with respect to Ground	-0.5 to +4.6	V
T <sub>STG</sub>	Storage temperature	-65 to +125	°C
T <sub>s</sub>	Max. Soldering Temperature (10 sec)	260	°C
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>DV</sub>	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.

**Operating Conditions for ASM3P623S00B/C/J/E/F/K Devices**

Parameter	Description	Min	Max	Unit
VDD	Supply Voltage	3.0	3.6	V
T <sub>A</sub>	Operating Temperature (Ambient Temperature)	-40	+85	°C
C <sub>L</sub>	Load Capacitance		30	pF
C <sub>IN</sub>	Input Capacitance		7	pF

**Electrical Characteristics for ASM3P623S00B/C/J/E/F/K**

Parameter	Description	Test Conditions	Min	Typ	Max	Unit
V <sub>IL</sub>	Input LOW Voltage <sup>5</sup>				0.8	V
V <sub>IH</sub>	Input HIGH Voltage <sup>5</sup>		2.0			V
I <sub>IL</sub>	Input LOW Current	V <sub>IN</sub> = 0V			50	µA
I <sub>IH</sub>	Input HIGH Current	V <sub>IN</sub> = VDD			100	µA
V <sub>OL</sub>	Output LOW Voltage <sup>6</sup>	I <sub>OL</sub> = 8mA			0.4	V
V <sub>OH</sub>	Output HIGH Voltage <sup>6</sup>	I <sub>OH</sub> = -8mA	2.4			V
I <sub>DD</sub>	Supply Current	Unloaded outputs		15		mA
Z <sub>o</sub>	Output Impedance			23		Ω

Switching Characteristics for ASM3P623S00B/C/J/E/F/K

Parameter	Description	Test Conditions	Min	Typ	Max	Unit
1/t <sub>1</sub>	Output Frequency	30pF load	20		50	MHz
	Duty Cycle <sup>6</sup> = (t <sub>2</sub> / t <sub>1</sub> ) * 100	Measured at VDD/2	40	50	60	%
t <sub>3</sub>	Output Rise Time <sup>6,7</sup>	Measured between 0.8V and 2.0V			2.5	nS
t <sub>4</sub>	Output Fall Time <sup>6,7</sup>	Measured between 2.0V and 0.8V			2.5	nS
t <sub>5</sub>	Output-to-output skew <sup>6</sup>	All outputs equally loaded			250	pS
t <sub>6</sub>	Delay, CLKIN Rising Edge to CLKOUT Rising Edge <sup>6</sup>	Measured at VDD /2			±350	pS
t <sub>7</sub>	Device-to-Device Skew <sup>6</sup>	Measured at VDD/2 on the CLKOUT pins of the device			700	pS
t <sub>j</sub>	Cycle-to-cycle jitter <sup>6</sup>	Loaded outputs			200	pS
t <sub>LOCK</sub>	PLL Lock Time <sup>6</sup>	Stable power supply, valid clock presented on CLKIN pin			1.0	mS

Notes:

5. CLKIN input has a threshold voltage of VDD/2

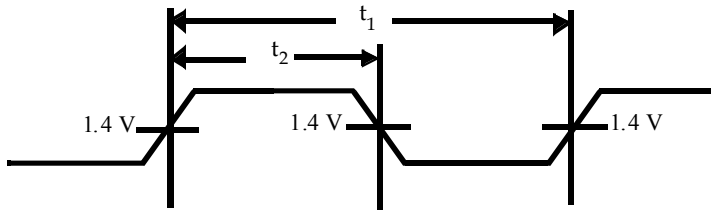
6. Parameter is guaranteed by design and characterization. Not 100% tested in production

7. The parameters are specified with loaded outputs.

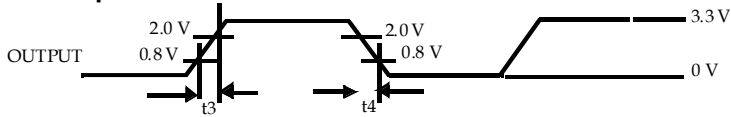
PRELIMINARY

**Switching Waveforms**

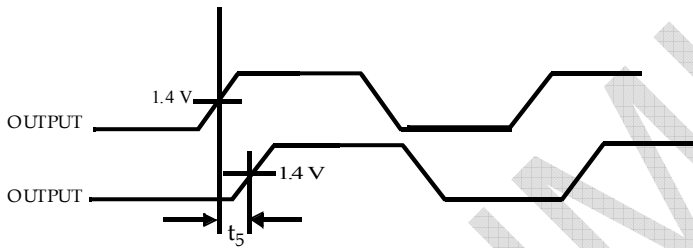
**Duty Cycle Timing**



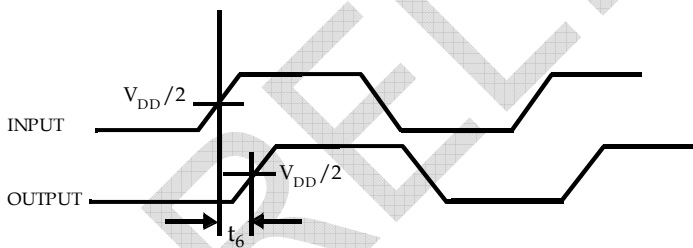
**All Outputs Rise/Fall Time**



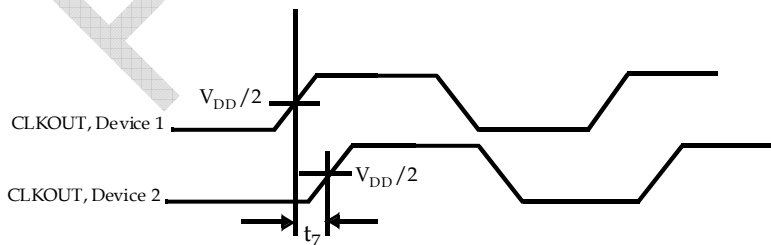
**Output - Output Skew**



**Input - Output Propagation Delay**

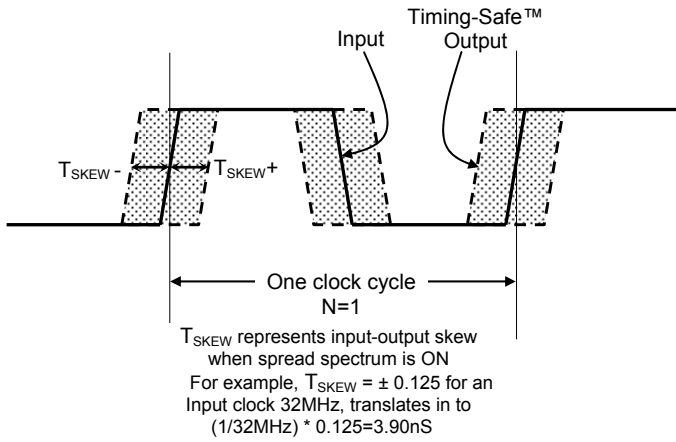


**Device - Device Skew**

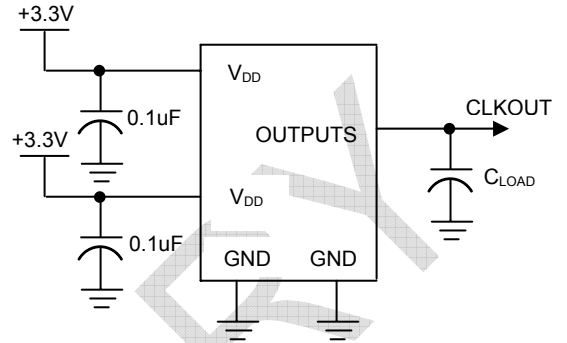




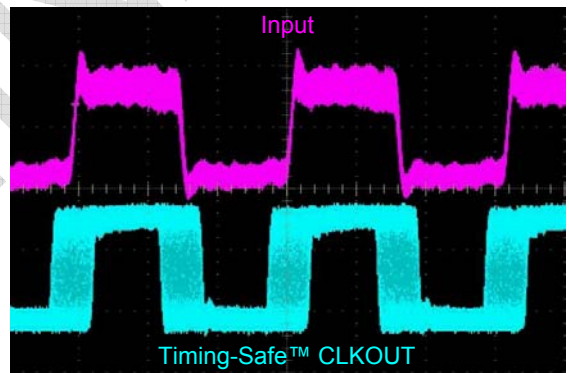
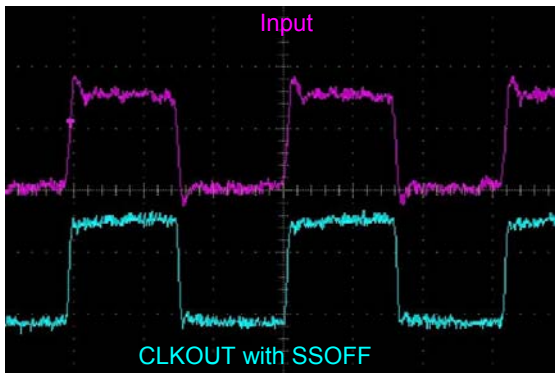
Input-Output Skew



Test Circuit

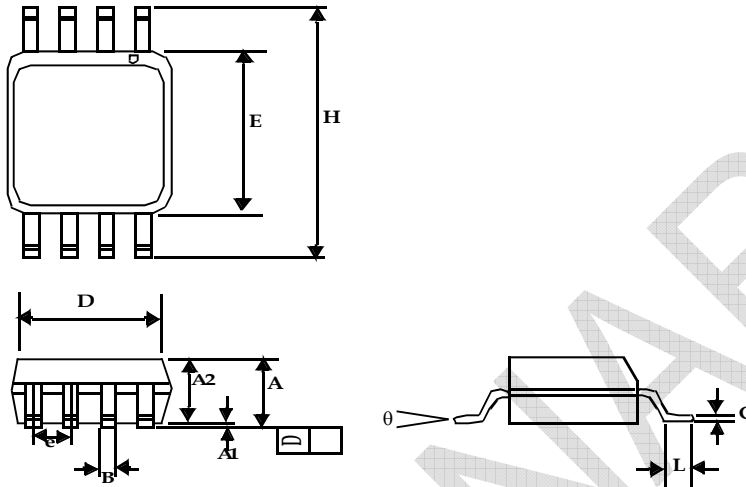


A Typical example of Timing-Safe™ waveform



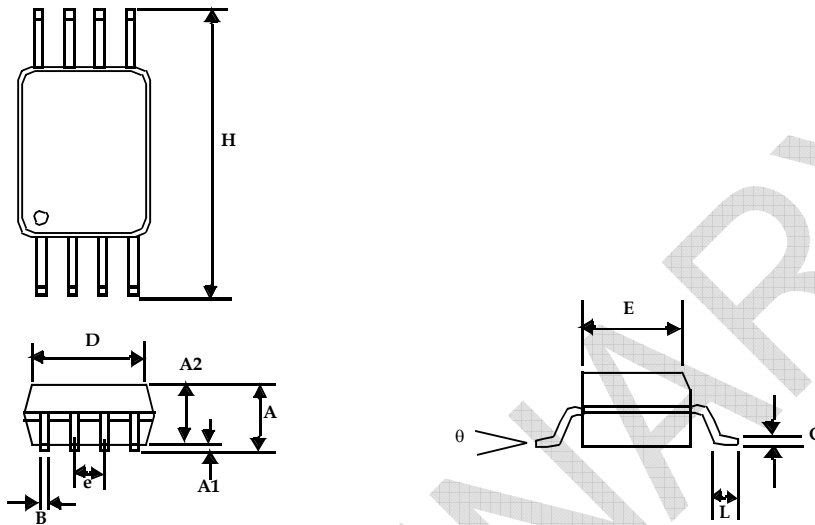
Package Information

8-lead (150-mil) SOIC Package



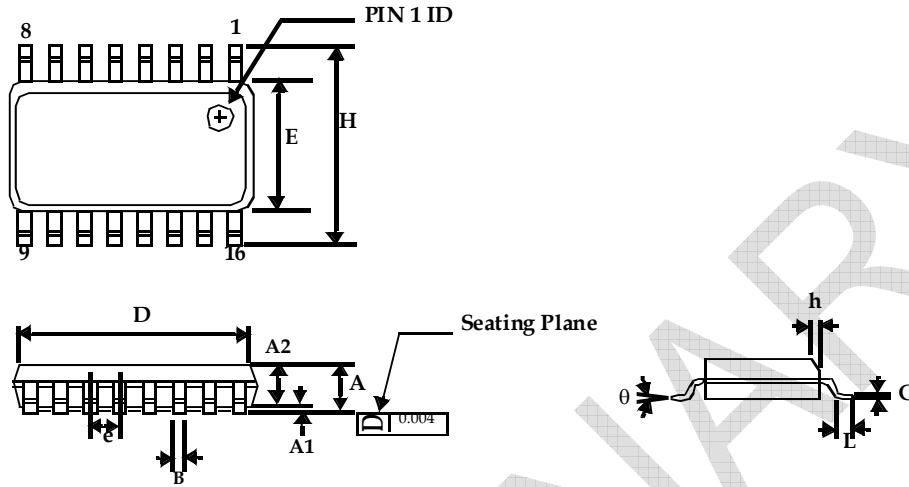
Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A1	0.004	0.010	0.10	0.25
A	0.053	0.069	1.35	1.75
A2	0.049	0.059	1.25	1.50
B	0.012	0.020	0.31	0.51
C	0.007	0.010	0.18	0.25
D	0.193 BSC		4.90 BSC	
E	0.154 BSC		3.91 BSC	
e	0.050 BSC		1.27 BSC	
H	0.236 BSC		6.00 BSC	
L	0.016	0.050	0.41	1.27
$\theta$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

**8-lead TSSOP (4.40-MM Body)**



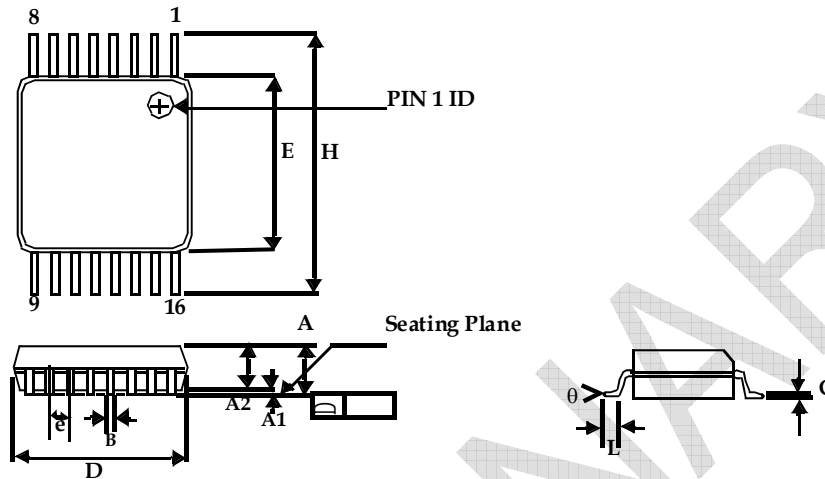
Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A		0.043		1.10
A1	0.002	0.006	0.05	0.15
A2	0.033	0.037	0.85	0.95
B	0.008	0.012	0.19	0.30
c	0.004	0.008	0.09	0.20
D	0.114	0.122	2.90	3.10
E	0.169	0.177	4.30	4.50
e	0.026 BSC		0.65 BSC	
H	0.252 BSC		6.40 BSC	
L	0.020	0.028	0.50	0.70
theta	0°	8°	0°	8°

16-lead (150 Mil) Molded SOIC Package



Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.053	0.069	1.35	1.75
A1	0.004	0.010	0.10	0.25
A2	0.049	0.059	1.25	1.50
B	0.013	0.022	0.33	0.53
C	0.008	0.012	0.19	0.27
D	0.386	0.394	9.80	10.01
E	0.150	0.157	3.80	4.00
e	0.050 BSC		1.27 BSC	
H	0.228	0.244	5.80	6.20
h	0.010	0.016	0.25	0.41
L	0.016	0.035	0.40	0.89
$\theta$	0°	8°	0°	8°

**16-lead TSSOP (4.40-MM Body)**



Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A		0.043		1.20
A1	0.002	0.006	0.05	0.15
A2	0.031	0.041	0.80	1.05
B	0.007	0.012	0.19	0.30
C	0.004	0.008	0.09	0.20
D	0.193	0.201	4.90	5.10
E	0.169	0.177	4.30	4.50
e	0.026 BSC		0.65 BSC	
H	0.252 BSC		6.40 BSC	
L	0.020	0.030	0.50	0.75
theta	0°	8°	0°	8°

Ordering Codes

Ordering Code	Marking	Package Type	Temperature
ASM3P623S00EF-16-ST	3P623S00EF	16-pin 150-mil SOIC- TUBE, Pb Free	Commercial
ASM3P623S00FF-16-ST	3P623S00FF	16-pin 150-mil SOIC- TUBE, Pb Free	Commercial
ASM3P623S00KF-16-ST	3P623S00KF	16-pin 150-mil SOIC- TUBE, Pb Free	Commercial
ASM3I623S00EF-16-ST	3I623S00EF	16-pin 150-mil SOIC- TUBE, Pb Free	Industrial
ASM3I623S00FF-16-ST	3I623S00FF	16-pin 150-mil SOIC- TUBE, Pb Free	Industrial
ASM3I623S00KF-16-ST	3I623S00KF	16-pin 150-mil SOIC- TUBE, Pb Free	Industrial
ASM3P623S00EF-16-SR	3P623S00EF	16-pin 150-mil SOIC-TAPE & REEL, Pb Free	Commercial
ASM3P623S00FF-16-SR	3P623S00FF	16-pin 150-mil SOIC-TAPE & REEL, Pb Free	Commercial
ASM3P623S00KF-16-SR	3P623S00KF	16-pin 150-mil SOIC-TAPE & REEL, Pb Free	Commercial
ASM3I623S00EF-16-SR	3I623S00EF	16-pin 150-mil SOIC-TAPE & REEL, Pb Free	Industrial
ASM3I623S00FF-16-SR	3I623S00FF	16-pin 150-mil SOIC-TAPE & REEL, Pb Free	Industrial
ASM3I623S00KF-16-SR	3I623S00KF	16-pin 150-mil SOIC-TAPE & REEL, Pb Free	Industrial
ASM3P623S00EF-16-TT	3P623S00EF	16-pin 4.4-mm TSSOP - TUBE, Pb Free	Commercial
ASM3P623S00FF-16-TT	3P623S00FF	16-pin 4.4-mm TSSOP - TUBE, Pb Free	Commercial
ASM3P623S00KF-16-TT	3P623S00KF	16-pin 4.4-mm TSSOP - TUBE, Pb Free	Commercial
ASM3I623S00EF-16-TT	3I623S00EF	16-pin 4.4-mm TSSOP - TUBE, Pb Free	Industrial
ASM3I623S00FF-16-TT	3I623S00FF	16-pin 4.4-mm TSSOP - TUBE, Pb Free	Industrial
ASM3I623S00KF-16-TT	3I623S00KF	16-pin 4.4-mm TSSOP - TUBE, Pb Free	Industrial
ASM3P623S00EF-16-TR	3P623S00EF	16- pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Commercial
ASM3P623S00FF-16-TR	3P623S00FF	16- pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Commercial
ASM3P623S00KF-16-TR	3P623S00KF	16-pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Commercial
ASM3I623S00EF-16-TR	3I623S00EF	16- pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Industrial
ASM3I623S00FF-16-TR	3I623S00FF	16- pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Industrial
ASM3I623S00KF-16-TR	3I623S00KF	16- pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Industrial
ASM3P623S00BF-08-ST	3P623S00BF	8-pin 150-mil SOIC- TUBE, Pb Free	Commercial
ASM3I623S00BF-08-ST	3I623S00BF	8-pin 150-mil SOIC- TUBE, Pb Free	Industrial
ASM3P623S00BF-08-SR	3P623S00BF	8-pin 150-mil SOIC-TAPE & REEL, Pb Free	Commercial
ASM3I623S00BF-08-SR	3I623S00BF	8-pin 150-mil SOIC-TAPE & REEL, Pb Free	Industrial
ASM3P623S00BF-08-TT	3P623S00BF	8-pin 4.4-mm TSSOP - TUBE, Pb Free	Commercial
ASM3I623S00BF-08-TT	3I623S00BF	8-pin 4.4-mm TSSOP - TUBE, Pb Free	Industrial
ASM3P623S00BF-08-TR	3P623S00BF	8- pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Commercial
ASM3I623S00BF-08-TR	3I623S00BF	8-pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Industrial

**Ordering Codes (cont'd)**

Ordering Code	Marking	Package Type	Temperature
ASM3P623S00CF-08-ST	3P623S00CF	8-pin 150-mil SOIC- TUBE, Pb Free	Commercial
ASM3I623S00CF-08-ST	3I623S00CF	8-pin 150-mil SOIC- TUBE, Pb Free	Industrial
ASM3P623S00CF-08-SR	3P623S00CF	8-pin 150-mil SOIC-TAPE & REEL, Pb Free	Commercial
ASM3I623S00CF-08-SR	3I623S00CF	8-pin 150-mil SOIC-TAPE & REEL, Pb Free	Industrial
ASM3P623S00CF-08-TT	3P623S00CF	8-pin 4.4-mm TSSOP - TUBE, Pb Free	Commercial
ASM3I623S00CF-08-TT	3I623S00CF	8-pin 4.4-mm TSSOP - TUBE, Pb Free	Industrial
ASM3P623S00CF-08-TR	3P623S00CF	8-pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Commercial
ASM3I623S00CF-08-TR	3I623S00CF	8-pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Industrial
ASM3P623S00JF-08-ST	3P623S00JF	8-pin 150-mil SOIC- TUBE, Pb Free	Commercial
ASM3I623S00JF-08-ST	3I623S00JF	8-pin 150-mil SOIC- TUBE, Pb Free	Industrial
ASM3P623S00JF-08-SR	3P623S00JF	8-pin 150-mil SOIC-TAPE & REEL, Pb Free	Commercial
ASM3I623S00JF-08-SR	3I623S00JF	8-pin 150-mil SOIC-TAPE & REEL, Pb Free	Industrial
ASM3P623S00JF-08-TT	3P623S00JF	8-pin 4.4-mm TSSOP - TUBE, Pb Free	Commercial
ASM3I623S00JF-08-TT	3I623S00JF	8-pin 4.4-mm TSSOP - TUBE, Pb Free	Industrial
ASM3P623S00JF-08-TR	3P623S00JF	8-pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Commercial
ASM3I623S00JF-08-TR	3I623S00JF	8-pin 4.4-mm TSSOP - TAPE & REEL, Pb Free	Industrial
ASM3P623S00EG-16-ST	3P623S00EG	16-pin 150-mil SOIC- TUBE, Green	Commercial
ASM3P623S00FG-16-ST	3P623S00FG	16-pin 150-mil SOIC- TUBE, Green	Commercial
ASM3P623S00KG-16-ST	3P623S00KG	16-pin 150-mil SOIC-TUBE, Green	Commercial
ASM3I623S00EG-16-ST	3I623S00EG	16-pin 150-mil SOIC- TUBE, Green	Industrial
ASM3I623S00FG-16-ST	3I623S00FG	16-pin 150-mil SOIC- TUBE, Green	Industrial
ASM3I623S00KG-16-ST	3I623S00KG	16-pin 150-mil SOIC-TUBE, Green	Industrial
ASM3P623S00EG-16-SR	3P623S00EG	16-pin 150-mil SOIC-TAPE & REEL, Green	Commercial
ASM3P623S00FG-16-SR	3P623S00FG	16-pin 150-mil SOIC-TAPE & REEL, Green	Commercial
ASM3P623S00KG-16-SR	3P623S00KG	16-pin 150-mil SOIC-TAPE & REEL, Green	Commercial
ASM3I623S00EG-16-SR	3I623S00EG	16-pin 150-mil SOIC-TAPE & REEL, Green	Industrial
ASM3I623S00FG-16-SR	3I623S00FG	16-pin 150-mil SOIC-TAPE & REEL, Green	Industrial
ASM3I623S00KG-16-SR	3I623S00KG	16-pin 150-mil SOIC-TAPE & REEL, Green	Industrial
ASM3P623S00EG-16-TT	3P623S00EG	16-pin 4.4-mm TSSOP - TUBE, Green	Commercial
ASM3P623S00FG-16-TT	3P623S00FG	16-pin 4.4-mm TSSOP - TUBE, Green	Commercial
ASM3P623S00KG-16-TT	3P623S00KG	16-pin 4.4-mm TSSOP - TUBE, Green	Commercial
ASM3I623S00EG-16-TT	3I623S00EG	16-pin 4.4-mm TSSOP - TUBE, Green	Industrial

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Ordering Codes (cont'd)

Ordering Code	Marking	Package Type	Temperature
ASM3I623S00FG-16-TT	3I623S00FG	16-pin 4.4-mm TSSOP - TUBE, Green	Industrial
ASM3I623S00KG-16-TT	3I623S00KG	16-pin 4.4-mm TSSOP - TUBE, Green	Industrial
ASM3P623S00EG-16-TR	3P623S00EG	16-pin 4.4-mm TSSOP - TAPE & REEL, Green	Commercial
ASM3P623S00FG-16-TR	3P623S00FG	16-pin 4.4-mm TSSOP - TAPE & REEL, Green	Commercial
ASM3P623S00KG-16-TR	3P623S00KG	16-pin 4.4-mm TSSOP - TAPE & REEL, Green	Commercial
ASM3I623S00EG-16-TR	3I623S00EG	16-pin 4.4-mm TSSOP - TAPE & REEL, Green	Industrial
ASM3I623S00FG-16-TR	3I623S00FG	16-pin 4.4-mm TSSOP - TAPE & REEL, Green	Industrial
ASM3I623S00KG-16-TR	3I623S00KG	16-pin 4.4-mm TSSOP - TAPE & REEL, Green	Industrial
ASM3P623S00BG-08-ST	3P623S00BG	8-pin 150-mil SOIC- TUBE, Green	Commercial
ASM3I623S00BG-08-ST	3I623S00BG	8-pin 150-mil SOIC- TUBE, Green	Industrial
ASM3P623S00BG-08-SR	3P623S00BG	8-pin 150-mil SOIC-TAPE & REEL, Green	Commercial
ASM3I623S00BG-08-SR	3I623S00BG	8-pin 150-mil SOIC-TAPE & REEL, Green	Industrial
ASM3P623S00BG-08-TT	3P623S00BG	8-pin 4.4-mm TSSOP - TUBE, Green	Commercial
ASM3I623S00BG-08-TT	3I623S00BG	8-pin 4.4-mm TSSOP - TUBE, Green	Industrial
ASM3P623S00BG-08-TR	3P623S00BG	8-pin 4.4-mm TSSOP - TAPE & REEL, Green	Commercial
ASM3I623S00BG-08-TR	3I623S00BG	8-pin 4.4-mm TSSOP - TAPE & REEL, Green	Industrial
ASM3P623S00CG-08-ST	3P623S00CG	8-pin 150-mil SOIC- TUBE, Green	Commercial
ASM3I623S00CG-08-ST	3I623S00CG	8-pin 150-mil SOIC- TUBE, Green	Industrial
ASM3P623S00CG-08-SR	3P623S00CG	8-pin 150-mil SOIC-TAPE & REEL, Green	Commercial
ASM3I623S00CG-08-SR	3I623S00CG	8-pin 150-mil SOIC-TAPE & REEL, Green	Industrial
ASM3P623S00CG-08-TT	3P623S00CG	8-pin 4.4-mm TSSOP - TUBE, Green	Commercial
ASM3I623S00CG-08-TT	3I623S00CG	8-pin 4.4-mm TSSOP - TUBE, Green	Industrial
ASM3P623S00CG-08-TR	3P623S00CG	8-pin 4.4-mm TSSOP - TAPE & REEL, Green	Commercial
ASM3I623S00CG-08-TR	3I623S00CG	8-pin 4.4-mm TSSOP - TAPE & REEL, Green	Industrial
ASM3P623S00JG-08-ST	3P623S00JG	8-pin 150-mil SOIC- TUBE, Green	Commercial
ASM3I623S00JG-08-ST	3I623S00JG	8-pin 150-mil SOIC- TUBE, Green	Industrial
ASM3P623S00JG-08-SR	3P623S00JG	8-pin 150-mil SOIC-TAPE & REEL, Green	Commercial
ASM3I623S00JG-08-SR	3I623S00JG	8-pin 150-mil SOIC-TAPE & REEL, Green	Industrial
ASM3P623S00JG-08-TT	3P623S00JG	8-pin 4.4-mm TSSOP - TUBE, Green	Commercial
ASM3I623S00JG-08-TT	3I623S00JG	8-pin 4.4-mm TSSOP - TUBE, Green	Industrial
ASM3P623S00JG-08-TR	3P623S00JG	8-pin 4.4-mm TSSOP - TAPE & REEL, Green	Commercial
ASM3I623S00JG-08-TR	3I623S00JG	8-pin 4.4-mm TSSOP - TAPE & REEL, Green	Industrial

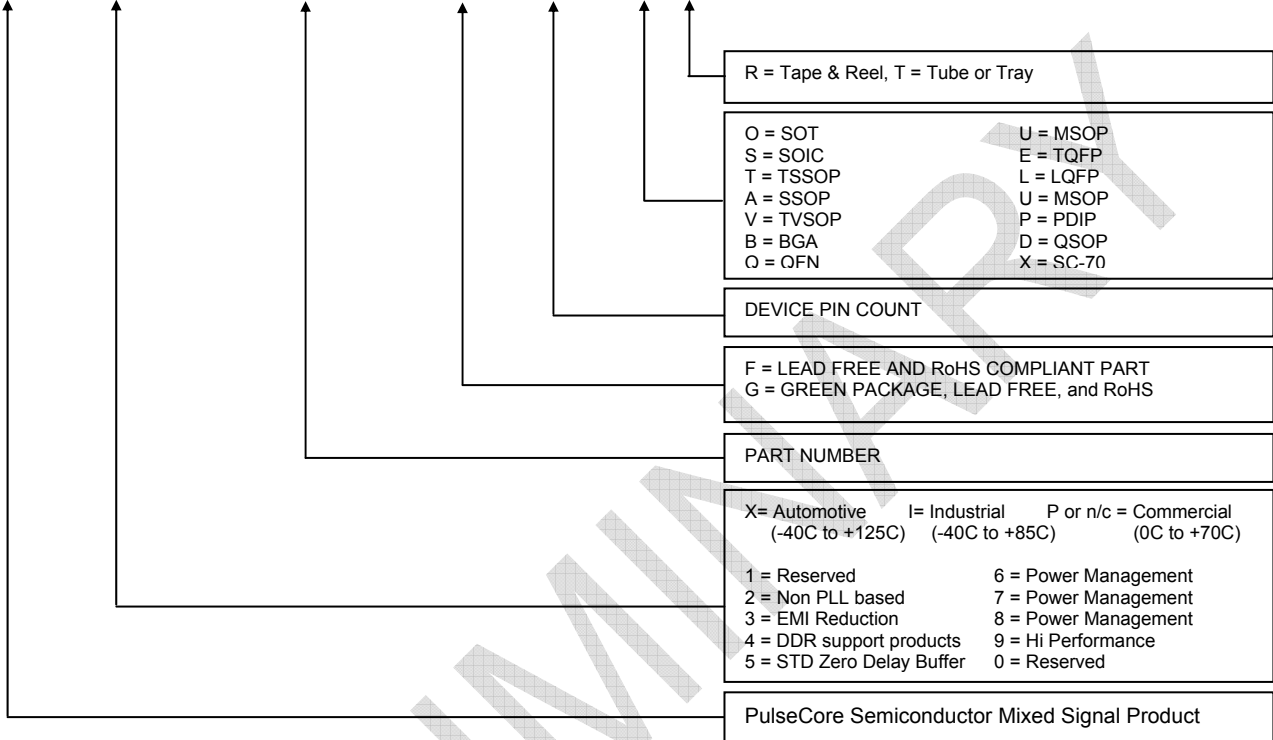


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**Device Ordering Information**

A S M 3 P 6 2 3 S 0 0 B F - 0 8 - T R



R = Tape & Reel, T = Tube or Tray

O = SOT	U = MSOP
S = SOIC	E = TQFP
T = TSSOP	L = LQFP
A = SSOP	U = MSOP
V = TVSOP	P = PDIP
B = BGA	D = QSOP
Q = QFN	X = SC-70

DEVICE PIN COUNT

F = LEAD FREE AND RoHS COMPLIANT PART  
G = GREEN PACKAGE, LEAD FREE, and RoHS

PART NUMBER

X= Automotive (-40C to +125C)    I= Industrial (-40C to +85C)    P or n/c = Commercial (0C to +70C)

1 = Reserved	6 = Power Management
2 = Non PLL based	7 = Power Management
3 = EMI Reduction	8 = Power Management
4 = DDR support products	9 = Hi Performance
5 = STD Zero Delay Buffer	0 = Reserved

PulseCore Semiconductor Mixed Signal Product

PRELIMINARY

Licensed under US patent #5,488,627, #6,646,463 and #5,631,920.



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Document Version: 0.4

Note: This product utilizes US Patent # 6,646,463 Impedance Emulator Patent issued to PulseCore Semiconductor, dated 11-11-2003  
Timing-Safe™ US Patent Pending.

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