ON Semiconductor

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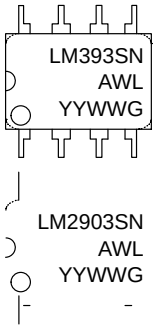
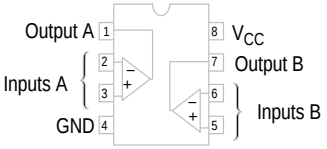
MARKING DIAGRAMS



LMxxxx = Specific Device Code
A, AL = Assembly Location
WL = Wafer Lot
Y, YY = Year
W, WW = Work Week
G or ▪ = Pb−Free Package

PIN CONNECTIONS



(Top View)

ORDERING INFORMATION

See detailed marking information and ordering and shipping information on page 7 of this data sheet.

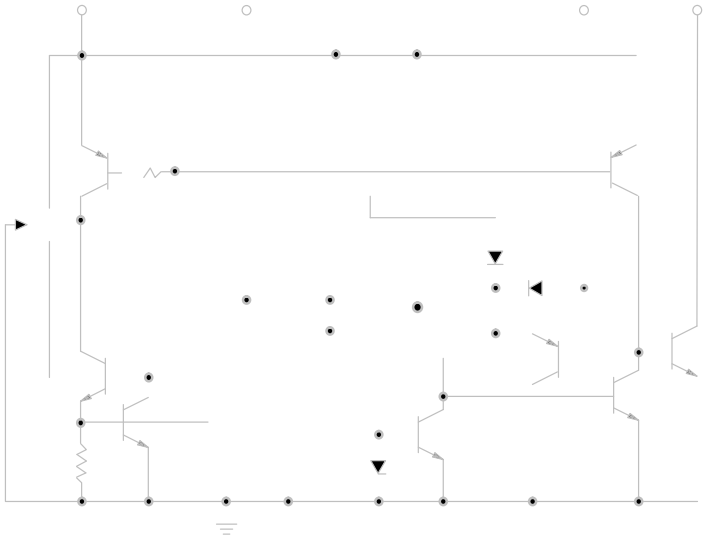


Figure 1. Representative Schematic Diagram
(Diagram shown is for 1 comparator)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Power Supply Voltage	V_{CC}	+36 or ±18	V
Input Differential Voltage	V_{IDR}		

ELECTRICAL CHARACTERISTICS (V_{CC} = 5.0 Vdc, $T_{low} \le T_A \le T_{high}$, unless otherwise noted.)

Characteristic	Symbol	LM393S			LM2903S			Unit
		Min	Typ	Max	Min	Typ	Max	
Input Offset Voltage (Note 3)	V_{IO}							mV
T_A = 25°C		–	±1.0	±5.0	–	±2.0	±7.0	
$T_{low} \le T_A \le T_{high}$		–	–	±9.0	–	±9.0	±15	
Input Offset Current	I_{IO}							nA
T_A = 25°C		–	±5.0	±50	–	±5.0	±50	
$T_{low} \le T_A \le T_{high}$		–	–	±150	–	±50	±200	
Input Bias Current (Note 4)	I_{IB}							nA

APPLICATIONS INFORMATION

These dual comparators feature high gain, wide bandwidth characteristics. This gives the device oscillation tendencies if the outputs are capacitively coupled to the inputs via stray capacitance. This oscillation manifests itself during output transitions (V_{OL} to V_{OH}). To alleviate this situation, input resistors < 10 kΩ should be used.

The addition of positive feedback (< 10 mV) is also recommended. It is good design practice to ground all unused pins.

Differential input voltages may be larger than supply voltage without damaging the comparator's inputs. Voltages more negative than −0.3 V should not be used.

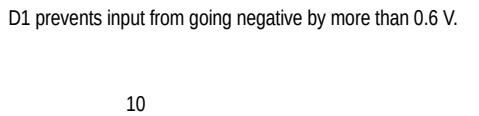


Figure 2. Zero Crossing Detector (Single Supply)

Figure 3. Zero Crossing Detector (Split Supply)

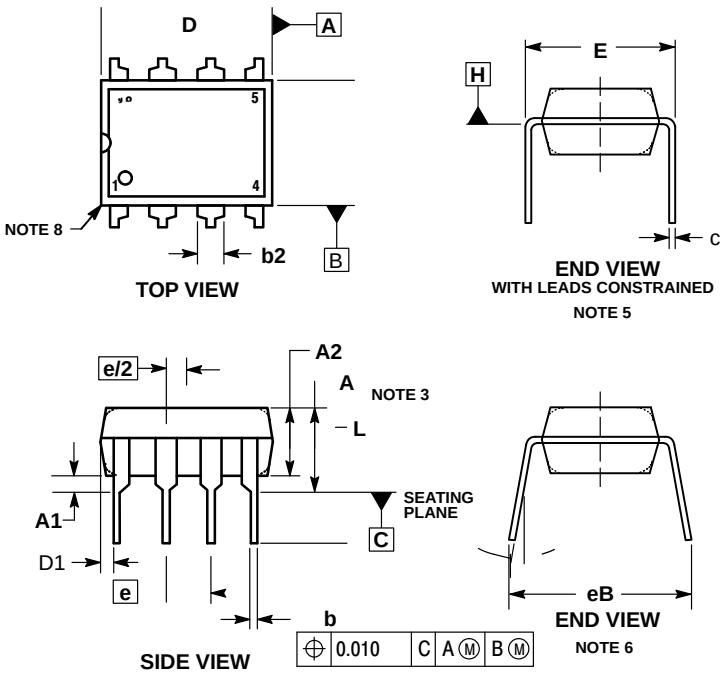
Figure 4. Free−Running Square−Wave Oscillator

Figure 5. Time Delay Generator

Figure 6. Comparator with Hysteresis

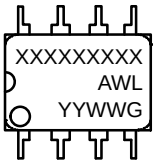
PDIP 8
CASE 626−05
ISSUE P

DATE 22 APR 2015



DIM	INCHES MIN	INCHES MAX		
A	----	0.210		
A1	0.015	----		
A2	0.115	0.195	2.92	4.95
b	0.014	0.022		
C	0.008	0.014		
D	0.355	0.400		
D1	0.005	----		
E	0.300	0.325		
e	0.100 BSC			
L	0.115	0.150	2.92	3.81

GENERIC
MARKING DIAGRAM*



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