

FEATURES

- ◆ Alternate Source for MAX921-MAX924
- ◆ Ultra-Low Quiescent Current Over Temperature
 - TSM921 Single+Reference: 4 μ A (total)
 - TSM922 Dual Comparator Only: 4 μ A (total)
 - TSM923 Dual+Reference: 6 μ A (total)
 - TSM924 Quad+Reference: 8.5 μ A (total)
- ◆ Single or Dual Power Supplies:
 - Single: +2.5V to +11V
 - Dual: \pm 1.25V to \pm 5.5V
- ◆ Input Voltage Range Includes Negative Supply
- ◆ 12 μ s Propagation Delay at 10mV Overdrive
- ◆ Push-pull TTL/CMOS-Compatible Outputs
- ◆ Crowbar-Current-Free Switching
- ◆ Continuous Source Current Capability: 40mA
- ◆ Internal 1.182V \pm 1% Reference:
 - TSM921/TSM923/TSM924
- ◆ Adjustable Hysteresis: TSM921/TSM923

APPLICATIONS

Threshold Detectors/Discriminators
 Oscillator Circuits
 Window Comparators
 Level Translators
 Battery-Powered Systems

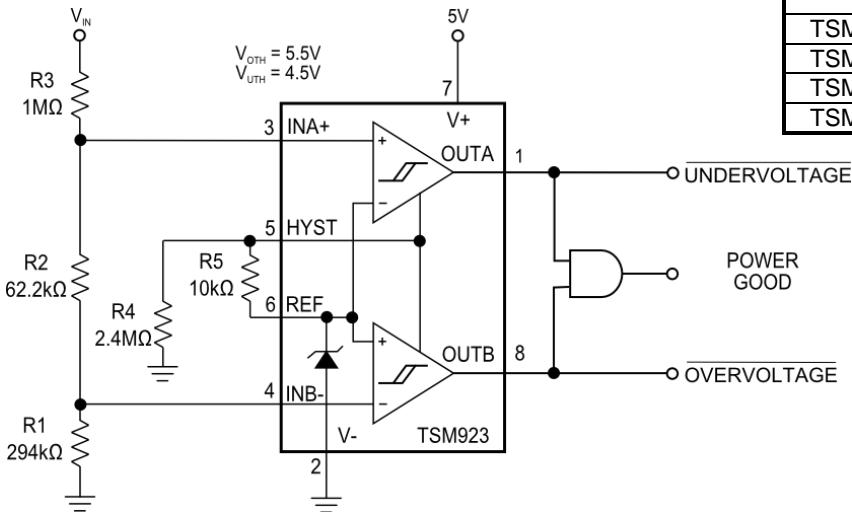
DESCRIPTION

The TSM921–TSM924 family of single/dual/quad, low-voltage, micropower analog comparators is electrically and form-factor identical to the MAX921–MAX924 family of analog comparators. Ideal for 3V or 5V single-supply applications, the TSM921–TSM924 family can operate from single +2.5V to +11V supplies or from \pm 1.25V to \pm 5V dual supplies. The single TSM921 and the dual TSM922 draw less than 4 μ A (max) supply current over temperature. The dual TSM923 and the quad TSM924 draw less than 2.2 μ A per comparator over temperature.

All comparators in this family exhibit an input voltage range from the negative supply rail to within 1.3V of the positive supply. In addition, the comparators' push-pull output stages are TTL/CMOS compatible and capable of sinking and sourcing current. The TSM921/TSM923/TSM924 each incorporates an internal 1.182V \pm 1% voltage reference. Without complicated feedback configurations and only requiring two additional resistors, adding external hysteresis via a separate pin is available on the single TSM921 and the dual TSM923.

TYPICAL APPLICATION CIRCUIT

A 5V, Low-Parts-Count Window Detector



PART	INTERNAL REFERENCE	COMPARATORS PER PACKAGE	INTERNAL HYSTERESIS
TSM921	Yes	1	Yes
TSM922	No	2	No
TSM923	Yes	2	Yes
TSM924	Yes	4	No

PART	TEMPERATURE RANGE	PACKAGE
TSM921C	0°C to 70°C	8-Pin MSOP/SOIC
TSM921E	-40°C to 85°C	
TSM922C	0°C to 70°C	8-Pin MSOP/SOIC
TSM922E	-40°C to 85°C	
TSM923C	0°C to 70°C	8-Pin MSOP/SOIC
TSM923E	-40°C to 85°C	
TSM924C	0°C to 70°C	16-Pin SOIC
TSM924E	-40°C to 85°C	

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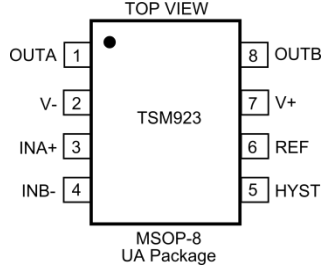
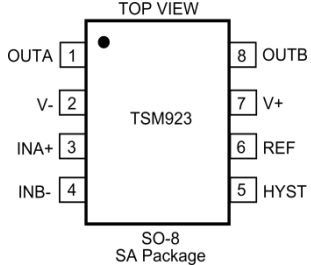
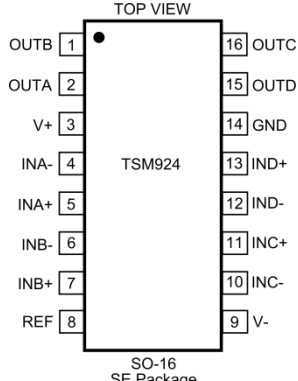
TSM921-TSM924 Product Brief



PACKAGE/ORDERING INFORMATION

<p>MSOP-8 UA Package</p>				<p>SO-8 SA Package</p>			
ORDER NUMBER	PART MARKING	CARRIER	QUANTITY	ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TSM921CUA+	TADK	Tube	50	TSM921CSA+	TS921	Tube	97
				TSM921CSA+T		Tape & Reel	2500
TSM921CUA+T		Tape & Reel	2500	TSM921ESA+	TS921E	Tube	97
				TSM921ESA+T		Tape & Reel	2500
<p>MSOP-8 UA Package</p>				<p>SO-8 SA Package</p>			
ORDER NUMBER	PART MARKING	CARRIER	QUANTITY	ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TSM922CUA+	TABC	Tube	50	TSM922CSA+	TS922	Tube	97
				TSM922CSA+T		Tape & Reel	2500
TSM922CUA+T		Tape & Reel	2500	TSM922ESA+	TS922E	Tube	97
				TSM922ESA+T		Tape & Reel	2500

PACKAGE/ORDERING INFORMATION

 <p>MSOP-8 UA Package</p>				 <p>SO-8 SA Package</p>			
ORDER NUMBER	PART MARKING	CARRIER	QUANTITY	ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TSM923CUA+	TABA	Tube	50	TSM923CSA+	TS922	Tube	97
				TSM923CSA+T		Tape & Reel	2500
TSM923CUA+T	TABA	Tape & Reel	2500	TSM923ESA+	TS922E	Tube	97
				TSM923ESA+T		Tape & Reel	2500
 <p>SO-16 SE Package</p>							
ORDER NUMBER	PART MARKING	CARRIER	QUANTITY	ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TSM924CSE+	TS924	Tube	48	TSM924ESE+	TS924E	Tube	48
TSM924CSE+T		Tape & Reel	2500	TSM924ESE+T		Tape & Reel	2500

Lead-free Program: Touchstone Semiconductor supplies only lead-free packaging.

Consult Touchstone Semiconductor for products specified with wider operating temperature ranges.

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