



Maxim > Products > [Supervisors, Voltage Monitors, Sequencers] [Military/Aerospace]

## MAX705, MAX706, MAX707, MAX708, MAX813L

Low-Cost,  $\mu$ P Supervisory Circuits

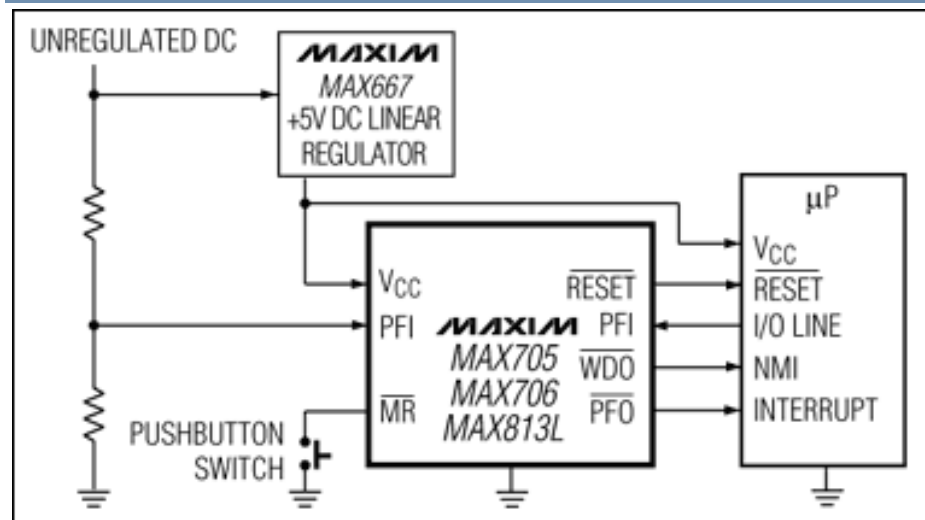
### Low-Cost Reset + Watchdog ICs

Recommended Upgrades for New Designs		
Part Number	Replacement	Explanation
MAX813	<a href="#">MAX6317</a>	SOT package, lower power, lower cost, 26 thresholds, 4 reset timeouts, 4 watchdog timeout options.
MAX813	<a href="#">MAX6706</a>	SOT package, power-fail comparator monitors down to 0.62v, 95% lower power, lower cost.
MAX813	<a href="#">MAX6821</a>	Lower voltage options for monitoring down to 1.8V supplies, SOT package, lower power
MAX813	<a href="#">MAX6822</a>	
MAX813	<a href="#">MAX6823</a>	
MAX813	<a href="#">MAX6824</a>	
MAX813	<a href="#">MAX6825</a>	
MAX813	<a href="#">MAX6825</a>	

Key Specifications: Supervisors (1 Monitored Voltage)										
Part Number	Reset Threshold Range (V)	Active-Low Reset Output	Active-High Reset Output	Min. Reset Timeout Range	Watchdog Feature	Nom. Watchdog Timeout Range	Supervisor Features	Reset Thresh. Acc. (% @+25°C)	Max. I <sub>CC</sub> ( $\mu$ A)	
MAX705	3.3 to 5.5	Push-Pull	-	85ms to 300ms	Input (WDI) Input/Output (WDI/ WDO)	1s to 2s	Adjustable Reset Input Manual Reset Power Fail Comparator	2.5	350	
MAX706			-		Input (WDI) Input/Output (WDI/ WDO)	1s to 2s				
MAX707			Push-Pull		No Watchdog	-				
MAX708			Push-Pull		No Watchdog	-				

**Notes:**

\*\*This pricing is BUDGETARY, for comparing similar parts. Prices are in U.S. dollars and subject to change. Quantity pricing may vary substantially and international prices may differ due to local duties, taxes, fees, and exchange rates. For volume-specific prices and delivery, please see the [price and availability page](#) or contact an authorized distributor.

**Diagram**

Typical Operating Circuit

**Evaluation Kits**

none

**Design Guides**

[Microprocessor Supervisory \(PDF\)](#)

[Low-Power Notebook ICs \(PDF\)](#)

[Wireless \(PDF\)](#)

**Reliability Reports**

Show FIT data for:

Reliability Report: [MAX705xxA.pdf](#) [MAX708xxA.pdf](#) [MAX813LxxA.pdf](#)

pdf

Request Reliability Report for:

**Software/Models**

none

## Ordering Information

Notes:

1. Other options and links for purchasing parts are listed at:
2. [Didn't Find What You Need?](#) Ask our applications engineers. Expert assistance in finding parts, usually within one business day.
3. Part number suffixes: T or T&R = tape and reel; + = RoHS/lead-free; # = RoHS/lead-exempt. More: See [Full Data Sheet](#) or [Part Naming Conventions](#).
4. \* Some packages have variations, listed on the drawing. "PkgCode/Variation" tells which variation the product uses. Note that "+", "#", "-" in the part number suffix describes RoHS status. Package drawings may show a different suffix character.

Filter:

Devices: 1-100 of 113

1 2 --->

MAX705	Free Sample	Buy	Package: TYPE PINS FOOTPRINT DRAWING CODE/VAR *	Temp	RoHS/Lead-Free? Materials Analysis
MAX705CUA-G05				0°C to +70°C	See data sheet
MAX705CSA-G05				0°C to +70°C	See data sheet
MAX705MJA/883B			Ceramic DIP; 8 pin; Dwg: <a href="#">21-0045</a> (PDF) Use pkgcode/variation: J8-2*	-55°C to +125°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705MJA			Ceramic DIP; 8 pin; Dwg: <a href="#">21-0045</a> (PDF) Use pkgcode/variation: J8-2*	-55°C to +125°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705C/D					See data sheet
MAX705CPA+			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8+1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>

MAX705CPA			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705EPA			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8-1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705EPA+			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8+1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705CSA-TG05			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8-2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705CSA-G077			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8-2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705CSA-TG077			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8-2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705CSA-T			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8-2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705CSA			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8-2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705CSA+			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8+2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705CSA+T			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8+2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705ESA+T			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8+2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705ESA+			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8+2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705ESA-T			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8-2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705ESA			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8-2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>

MAX705CUA+T				0°C to +70°C	See data sheet
MAX705CUA+			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8+1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705CUA-TG05			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705CUA-T			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705CUA			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705EUA+T			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8+1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705EUA+			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8+1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX705EUA-T			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8-1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX705EUA			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8-1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
<b>MAX706</b>	<b>Free Sample</b>	<b>Buy</b>	<b>Package: TYPE PINS FOOTPRINT DRAWING CODE/VAR *</b>	<b>Temp</b>	<b>RoHS/Lead-Free? Materials Analysis</b>
MAX706MJA/883B			Ceramic DIP; 8 pin; Dwg: <a href="#">21-0045</a> (PDF) Use pkgcode/variation: J8-2*	-55°C to +125°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706MJA			Ceramic DIP; 8 pin; Dwg: <a href="#">21-0045</a> (PDF) Use pkgcode/variation: J8-2*	-55°C to +125°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706C/D					See data sheet
MAX706CPA			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>

MAX706CPA+			PDIP; 8 pin; Dwg: <a href="#">21-0043 (PDF)</a> Use pkgcode/variation: P8+1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706EPA+			PDIP; 8 pin; Dwg: <a href="#">21-0043 (PDF)</a> Use pkgcode/variation: P8+1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706EPA			PDIP; 8 pin; Dwg: <a href="#">21-0043 (PDF)</a> Use pkgcode/variation: P8-1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706CSA-T			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8-2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706CSA+T			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8+2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706CSA			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8-2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706CSA+			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8+2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706ESA			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8-2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706ESA+			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8+2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706ESA-T			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8-2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706ESA+T			SOIC; 8 pin; Dwg: <a href="#">21-0041 (PDF)</a> Use pkgcode/variation: S8+2*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706CUA			uMAX; 8 pin; Dwg: <a href="#">21-0036 (PDF)</a> Use pkgcode/variation: U8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706CUA+			uMAX; 8 pin; Dwg: <a href="#">21-0036 (PDF)</a> Use pkgcode/variation: U8+1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706CUA-T			uMAX; 8 pin; Dwg: <a href="#">21-0036 (PDF)</a> Use pkgcode/variation: U8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>

MAX706CUA+T			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8+1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX706EUA			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8-1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX706EUA-T				-40°C to +85°C	See data sheet
MAX706EUA+T				-40°C to +85°C	See data sheet
MAX706EUA+			uMAX; 8 pin; Dwg: <a href="#">21-0036</a> (PDF) Use pkgcode/variation: U8+1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
<b>MAX707</b>	<b>Free Sample</b>	<b>Buy</b>	<b>Package:</b> TYPE PINS FOOTPRINT DRAWING CODE/VAR *	<b>Temp</b>	<b>RoHS/Lead-Free? Materials Analysis</b>
MAX707MJA			Ceramic DIP; 8 pin; Dwg: <a href="#">21-0045</a> (PDF) Use pkgcode/variation: J8-2*	-55°C to +125°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX707MJA/883B			Ceramic DIP; 8 pin; Dwg: <a href="#">21-0045</a> (PDF) Use pkgcode/variation: J8-2*	-55°C to +125°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX707C/D					See data sheet
MAX707EPA+			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8+1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX707CPA+			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8+1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>
MAX707CPA			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8-1*	0°C to +70°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX707EPA			PDIP; 8 pin; Dwg: <a href="#">21-0043</a> (PDF) Use pkgcode/variation: P8-1*	-40°C to +85°C	RoHS/Lead-Free: <a href="#">No Materials Analysis</a>
MAX707CSA+T			SOIC; 8 pin; Dwg: <a href="#">21-0041</a> (PDF) Use pkgcode/variation: S8+2*	0°C to +70°C	RoHS/Lead-Free: <a href="#">Lead Free Materials Analysis</a>



# Low-Cost, $\mu$ P Supervisory Circuits

MAX705-MAX708/MAX813L

## General Description

The MAX705-MAX708/MAX813L microprocessor ( $\mu$ P) supervisory circuits reduce the complexity and number of components required to monitor power-supply and battery functions in  $\mu$ P systems. These devices significantly improve system reliability and accuracy compared to separate ICs or discrete components.

The MAX705/MAX706/MAX813L provide four functions:

- 1) A reset output during power-up, power-down, and brownout conditions.
- 2) An independent watchdog output that goes low if the watchdog input has not been toggled within 1.6 seconds.
- 3) A 1.25V threshold detector for power-fail warning, low-battery detection, or for monitoring a power supply other than +5V.
- 4) An active-low manual-reset input.

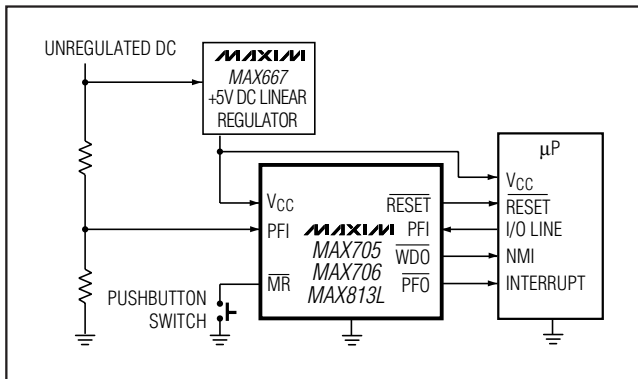
The MAX707/MAX708 are the same as the MAX705/MAX706, except an active-high reset is substituted for the watchdog timer. The MAX813L is the same as the MAX705, except RESET is provided instead of  $\overline{\text{RESET}}$ .

Two supply-voltage monitor levels are available: The MAX705/MAX707/MAX813L generate a reset pulse when the supply voltage drops below 4.65V, while the MAX706/MAX708 generate a reset pulse below 4.40V. All four parts are available in 8-pin DIP, SO and  $\mu$ MAX packages.

## Applications

- Computers
- Controllers
- Intelligent Instruments
- Automotive Systems
- Critical  $\mu$ P Power Monitoring

## Typical Operating Circuit



## Features

- ◆  $\mu$ MAX Package: Smallest 8-Pin SO
- ◆ Guaranteed  $\overline{\text{RESET}}$  Valid at  $V_{CC} = 1V$
- ◆ Precision Supply-Voltage Monitor  
4.65V in MAX705/MAX707/MAX813L  
4.40V in MAX706/MAX708
- ◆ 200ms Reset Pulse Width
- ◆ Debounced TTL/CMOS-Compatible Manual-Reset Input
- ◆ Independent Watchdog Timer—1.6sec Timeout (MAX705/MAX706)
- ◆ Active-High Reset Output (MAX707/MAX708/MAX813L)
- ◆ Voltage Monitor for Power-Fail or Low-Battery Warning

## Ordering Information

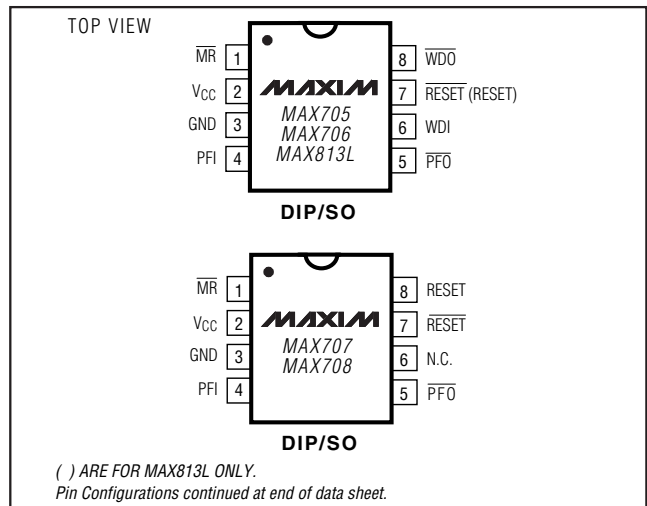
PART	TEMP RANGE	PIN-PACKAGE
MAX705CPA	0°C to +70°C	8 Plastic DIP
MAX705CSA	0°C to +70°C	8 SO
MAX705CUA	0°C to +70°C	8 $\mu$ MAX
MAX705C/D	0°C to +70°C	Dice*

Ordering Information continued at end of data sheet.

\* Dice are specified at  $T_A = +25^\circ\text{C}$ .

\*\* Contact factory for availability and processing to MIL-STD-883. Devices in PDIP, SO and  $\mu$ MAX packages are available in both leaded and lead-free packaging. Specify lead free by adding the + symbol at the end of the part number when ordering. Lead free not available for CERDIP package.

## Pin Configurations





# Low-Cost, $\mu$ P Supervisory Circuits

## ABSOLUTE MAXIMUM RATINGS

Terminal Voltage (with respect to GND)		SO (derate 5.88mW/°C above +70°C) .....	471mW
$V_{CC}$ .....	-0.3V to 6.0V	$\mu$ MAX (derate 4.10mW/°C above +70°C) .....	330mW
All Other Inputs (Note 1) .....	-0.3V to ( $V_{CC} + 0.3V$ )	CERDIP (derate 8.00mW/°C above +70°C) .....	640mW
Input Current		Operating Temperature Ranges	
$V_{CC}$ .....	20mA	MAX70_C_, MAX813LC_ .....	0°C to +70°C
GND .....	20mA	MAX70_E_, MAX813LE_ .....	-40°C to +85°C
Output Current (all outputs) .....	20mA	MAX70_MJA .....	-55°C to +125°C
Continuous Power Dissipation		Storage Temperature Range .....	-65°C to +160°C
Plastic DIP (derate 9.09mW/°C above +70°C) .....	727mW	Lead Temperature (soldering, 10sec) .....	+300°C

**Note 1:** The input voltage limits on PFI and  $\overline{MR}$  can be exceeded if the input current is less than 10mA.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL CHARACTERISTICS

( $V_{CC} = 4.75V$  to  $5.5V$  for MAX705/MAX707/MAX813L,  $V_{CC} = 4.5V$  to  $5.5V$  for MAX706/MAX708,  $T_A = T_{MIN}$  to  $T_{MAX}$ , unless otherwise noted.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS	
Operating Voltage Range	$V_{CC}$	MAX70_C	1.0		5.5	V	
		MAX813LC	1.1		5.5		
		MAX70_E/M, MAX813LE/M	1.2		5.5		
Supply Current	$I_{SUPPLY}$	MAX705C, MAX706C, MAX813LC		150	350	$\mu$ A	
		MAX705E/M, MAX706E/M, MAX813LE/M		150	500		
		MAX707C, MAX708C		50	350		
		MAX707E/M, MAX708E/M		50	500		
Reset Threshold (Note 2)	$V_{RT}$	MAX705, MAX707, MAX813L	4.50	4.65	4.75	V	
		MAX706, MAX708	4.25	4.40	4.50		
Reset Threshold Hysteresis (Note 2)				40		mV	
Reset Pulse Width (Note 2)	$t_{RS}$		140	200	280	ms	
$\overline{RESET}$ Output Voltage		$I_{SOURCE} = 800\mu A$	$V_{CC} - 1.5$			V	
		$I_{SINK} = 3.2mA$	0.4				
		MAX70_C, $V_{CC} = 1V$ , $I_{SINK} = 50\mu A$	0.3				
		MAX70_E/M, $V_{CC} = 1.2V$ , $I_{SINK} = 100\mu A$	0.3				
RESET Output Voltage		MAX707, MAX708, $I_{SOURCE} = 800\mu A$	$V_{CC} - 1.5$			V	
		MAX707, MAX708, $I_{SINK} = 1.2mA$	0.4				
		MAX813LC, $I_{SOURCE} = 4\mu A$ , $V_{CC} = 1.1V$	0.8				
		MAX813LE/M, $I_{SOURCE} = 4\mu A$ , $V_{CC} = 1.2V$	0.9				
		MAX813L	$I_{SOURCE} = 800\mu A$	$V_{CC} - 1.5$			
			$I_{SINK} = 3.2mA$	0.4			
Watchdog Timeout Period	$t_{WD}$	MAX705, MAX706, MAX813L	1.00	1.60	2.25	sec	
WDI Pulse Width	$t_{WP}$	$V_{IL} = 0.4V$ , $V_{IH} = (V_{CC}) (0.8)$	50			ns	
WDI Input Threshold	Low	MAX705, MAX706, MAX813L, $V_{CC} = 5V$	0.8			V	
	High		3.5				
WDI Input Current		MAX705, MAX706, MAX813L, WDI = $V_{CC}$	50		150	$\mu$ A	
		MAX705, MAX706, MAX813L, WDI = 0V	-150	-50			
$\overline{WDO}$ Output Voltage		MAX705, MAX706, MAX813L, $I_{SOURCE} = 800\mu A$	$V_{CC} - 1.5$			V	
		MAX705, MAX706, MAX813L, $I_{SINK} = 1.2mA$	0.4				

# Low-Cost, $\mu$ P Supervisory Circuits

## ELECTRICAL CHARACTERISTICS (continued)

( $V_{CC} = 4.75V$  to  $5.5V$  for MAX705/MAX707/MAX813L,  $V_{CC} = 4.5V$  to  $5.5V$  for MAX706/MAX708,  $T_A = T_{MIN}$  to  $T_{MAX}$ , unless otherwise noted.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
$\overline{MR}$ Pull-Up Current		$\overline{MR} = 0V$	100	250	600	$\mu A$
$\overline{MR}$ Pulse Width	$t_{MR}$		150			ns
$\overline{MR}$ Input Threshold	Low				0.8	V
	High		2.0			
$\overline{MR}$ to Reset Out Delay (Note 2)	$t_{MD}$				250	ns
PFI Input Threshold		$V_{CC} = 5V$	1.20	1.25	1.30	V
PFI Input Current			-25.00	0.01	25.00	nA
$\overline{PFO}$ Output Voltage		$I_{SOURCE} = 800\mu A$	$V_{CC} - 1.5$			V
		$I_{SINK} = 3.2mA$	0.4			

**Note 2:** Applies to both  $\overline{RESET}$  in the MAX705-MAX708 and  $\overline{RESET}$  in the MAX707/MAX708/MAX813L.

MAX705-MAX708/MAX813L

# Low-Cost, $\mu$ P Supervisory Circuits

MAX705-MAX708/MAX813L

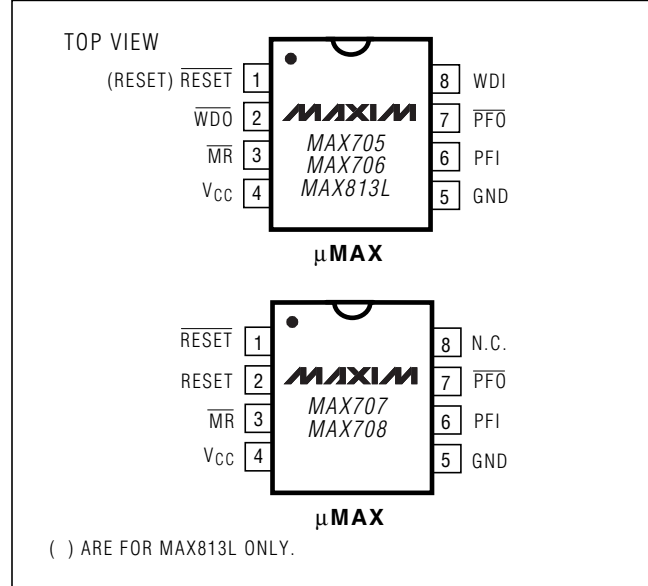
## Ordering Information (continued)

PART	TEMP. RANGE	PIN-PACKAGE
MAX705EPA	-40°C to +85°C	8 Plastic DIP
MAX705ESA	-40°C to +85°C	8 SO
MAX705EUA	-40°C to +85°C	8 $\mu$ MAX
MAX705MJA	-55°C to +125°C	8 CERDIP**
<b>MAX706CPA</b>	0°C to +70°C	8 Plastic DIP
MAX706CSA	0°C to +70°C	8 SO
MAX706CUA	0°C to +70°C	8 $\mu$ MAX
MAX706C/D	0°C to +70°C	Dice*
MAX706EPA	-40°C to +85°C	8 Plastic DIP
MAX706ESA	-40°C to +85°C	8 SO
MAX706EUA	-40°C to +85°C	8 $\mu$ MAX
MAX706MJA	-55°C to +125°C	8 CERDIP**
<b>MAX707CPA</b>	0°C to +70°C	8 Plastic DIP
MAX707CSA	0°C to +70°C	8 SO
MAX707CUA	0°C to +70°C	8 $\mu$ MAX
MAX707C/D	0°C to +70°C	Dice*
MAX707EPA	-40°C to +85°C	8 Plastic DIP
MAX707ESA	-40°C to +85°C	8 SO
MAX707EUA	-40°C to +85°C	8 $\mu$ MAX
MAX707MJA	-55°C to +125°C	8 CERDIP**
<b>MAX708CPA</b>	0°C to +70°C	8 Plastic DIP
MAX708CSA	0°C to +70°C	8 SO
MAX708CUA	0°C to +70°C	8 $\mu$ MAX
MAX708C/D	0°C to +70°C	Dice*
MAX708EPA	-40°C to +85°C	8 Plastic DIP
MAX708ESA	-40°C to +85°C	8 SO
MAX708EUA	-40°C to +85°C	8 $\mu$ MAX
MAX708MJA	-55°C to +125°C	8 CERDIP**
<b>MAX813LCPA</b>	0°C to +70°C	8 Plastic DIP
MAX813LCSA	0°C to +70°C	8 SO
MAX813LCUA	0°C to +70°C	8 $\mu$ MAX
MAX813LC/D	0°C to +70°C	Dice*
MAX813LEPA	-40°C to +85°C	8 Plastic DIP
MAX813LESA	-40°C to +85°C	8 SO
MAX813LEUA	-40°C to +85°C	8 $\mu$ MAX
MAX813LMJA	-55°C to +125°C	8 CERDIP**

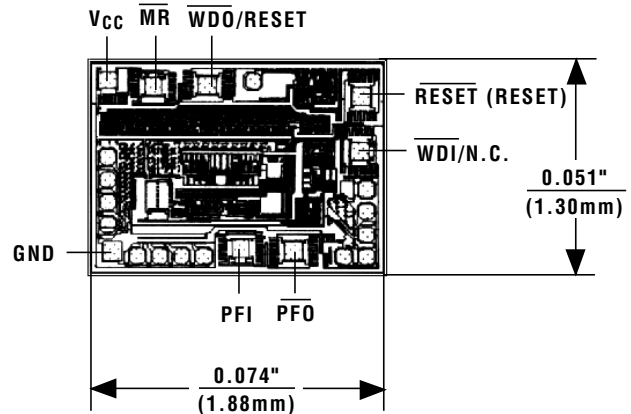
\* Dice are specified at  $T_A = +25^\circ\text{C}$ .

\*\* Contact factory for availability and processing to MIL-STD-883. Devices in PDIP, SO and  $\mu$ MAX packages are available in both leaded and lead-free packaging. Specify lead free by adding the + symbol at the end of the part number when ordering. Lead free not available for CERDIP package.

## Pin Configuration (continued)



## Chip Topography



( ) ARE FOR MAX813L ONLY.

TRANSISTOR COUNT: 572

SUBSTRATE MUST BE LEFT UNCONNECTED.

# Low-Cost, $\mu$ P Supervisory Circuits

## Package Information

(The package drawing(s) in this data sheet may not reflect the most current specifications. For the latest package outline information,

