ADVANCE INFORMATION

All information in this data sheet is preliminary and subject to change.

8/97

MAXIM

5-Pin µP Supervisory Circuits with Watchdog and Manual Reset

General Description

The MAX6316–MAX6322 family of microprocessor (µP) supervisory circuits offers several combinations of push/pull, bidirectional, and open-drain outputs, along with watchdog and manual-reset features. All of these devices can be factory trimmed to any of 26 reset thresholds (from 2.5V to 5V in 0.1V increments), any of four reset timeout periods (from 1ms to 1.12sec minimum), and any of four watchdog timeout periods (from 6.3ms to 25sec). The MAX6316–MAX6322 are offered in a 5-pin SOT23 package.

Applications

Portable Computers

Computers

Controllers

Intelligent Instruments

Portable/Battery-Powered Equipment

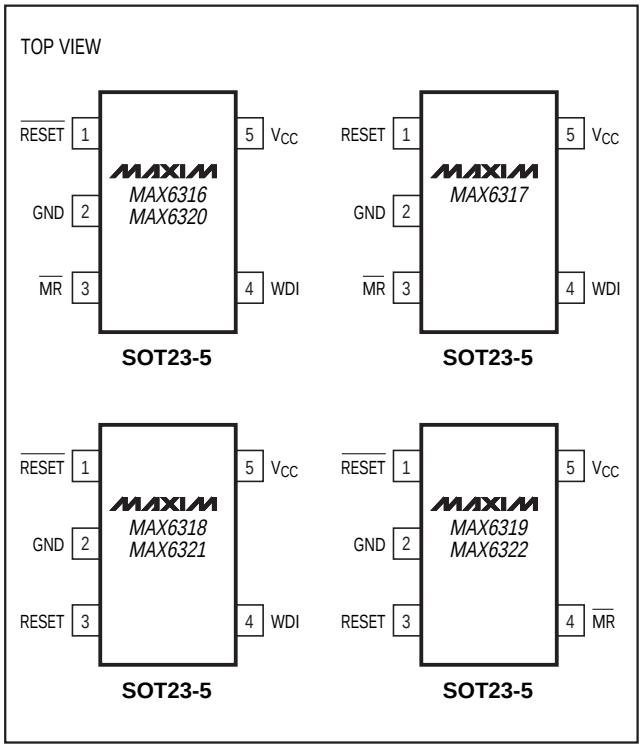
Embedded Control Systems

Features

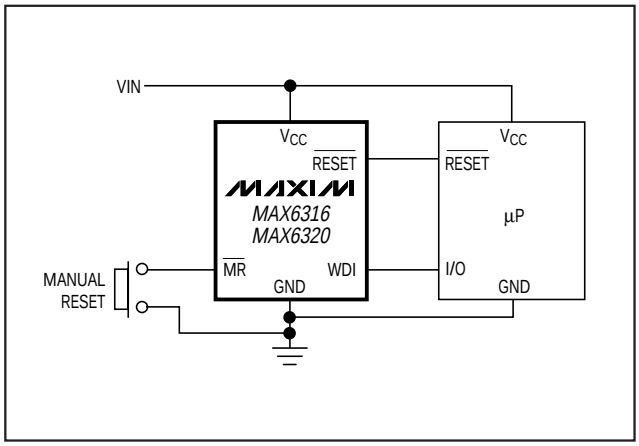
- ♦ **26 Factory-Trimmed Reset Voltages from 2.5V to 5V**
- ♦ **4 Factory-Trimmed Reset Timeouts from 1ms to 1.12sec (min)**
- ♦ **4 Factory-Trimmed Watchdog Timeouts from 6.3ms to 25sec**
- ♦ **No External Components**
- ♦ **Low Cost**
- ♦ **Highly Accurate Reset Threshold**
- ♦ **Immunity to Negative-Going V_{CC} Transients**
- ♦ **4 Reset Output Stages:**
  - **Active-Low Push/Pull**
  - **Active-High Push/Pull**
  - **Active-Low Open-Drain**
  - **Bidirectional***
- ♦ **5-Pin SOT23 Package**

**A bidirectional reset output stage is designed to interface to µPs that have bidirectional reset pins, such as the Motorola 68HC11. These µPs can often determine if a reset was asserted by an external device (i.e., the supervisor IC) or by the µP itself (due to a watchdog fault, clock error, or other source).*

Pin Configurations



Typical Operating Circuit



5-Pin µP Supervisory Circuits with Watchdog and Manual Reset

Table 1. Factory-Trimmed Reset Thresholds*

SUFFIX	T_A = +25°C			T_A = 0°C to +70°C	
	MIN	TYP	MAX	MIN	MAX
MAX63__UK50D_W_-T	4.925	5.000	5.075	4.875	5.125
MAX63__UK49D_W_-T	4.827	4.900	4.974	4.778	5.023
MAX63__UK48D_W_-T	4.728	4.800	4.872	4.680	4.920
MAX63__UK47D_W_-T	4.630	4.700	4.771	4.583	4.818
MAX63__UK46D_W_-T	4.561	4.630	4.699	4.514	4.746
MAX63__UK45D_W_-T	4.433	4.500	4.568	4.388	4.613
MAX63__UK44D_W_-T	4.314	4.380	4.446	4.270	4.490
MAX63__UK43D_W_-T	4.236	4.300	4.365	4.193	4.408
MAX63__UK42D_W_-T	4.137	4.200	4.263	4.095	4.305
MAX63__UK41D_W_-T	4.039	4.100	4.162	3.998	4.203
MAX63__UK40D_W_-T	3.940	4.000	4.060	3.900	4.100
MAX63__UK39D_W_-T	3.842	3.900	3.959	3.803	3.998
MAX63__UK38D_W_-T	3.743	3.800	3.857	3.705	3.895
MAX63__UK37D_W_-T	3.645	3.700	3.756	3.608	3.793
MAX63__UK36D_W_-T	3.546	3.600	3.654	3.510	3.690
MAX63__UK35D_W_-T	3.448	3.500	3.553	3.413	3.588
MAX63__UK34D_W_-T	3.349	3.400	3.451	3.315	3.485
MAX63__UK33D_W_-T	3.251	3.300	3.350	3.218	3.383
MAX63__UK32D_W_-T	3.152	3.200	3.248	3.128	3.280
MAX63__UK31D_W_-T	3.034	3.080	3.126	3.003	3.157
MAX63__UK30D_W_-T	2.955	3.000	3.045	2.925	3.075
MAX63__UK29D_W_-T	2.886	2.930	2.974	2.857	3.000
MAX63__UK28D_W_-T	2.758	2.800	2.842	2.730	2.870
MAX63__UK27D_W_-T	2.660	2.700	2.741	2.633	2.768
MAX63__UK26D_W_-T	2.591	2.630	2.669	2.564	2.696
MAX63__UK25D_W_-T	2.463	2.500	2.538	2.438	2.563

**Factory-trimmed reset thresholds are available in approximately 100mV increments with a ±1.5% room-temperature variance.*

Selector Guide

PART	WATCHDOG	MANUAL $\overline{\text{RESET}}$	RESET OUTPUT		
			PUSH/PULL	BIDIRECTIONAL	OPEN-DRAIN
MAX6316L	✔	✔	Active low	—	—
MAX6316M	✔	✔	—	Active low	—
MAX6317H	✔	✔	Active high	—	—
MAX6318L/H	✔	—	Active high/low	—	—
MAX6318M/H	✔	—	Active high	Active low	—
MAX6319L/H	—	✔	Active high/low	—	—
MAX6319M/H	—	✔	Active high	Active low	—
MAX6320P	✔	✔	—	—	Active low
MAX6321H/P	✔	—	Active high	—	Active low
MAX6322H/P	—	✔	Active high	—	Active low