



## 5-Pin, Multiple-Input, Programmable Reset ICs

MAX6305–MAX6313

### General Description

The MAX6305–MAX6313 CMOS microprocessor ( $\mu$ P) supervisory circuits are designed to monitor more than one power supply. Ideal for monitoring both 5V and 3.3V in personal computer systems, these devices assert a system reset if any of the monitored supplies falls outside the programmed threshold. Low supply current (15 $\mu$ A) and a small package suit them for portable applications. The MAX6305–MAX6313 are specifically designed to ignore fast transients on any monitored supply.

These devices are available in a SOT23-5 package, have factory-programmed reset thresholds from 2.5V to 5.0V (in 100mV increments), and feature four power-on reset timeout periods.

### Applications

Portable Computers  
Computers  
Controllers  
Intelligent Instruments  
Portable/Battery-Powered Equipment  
Multivoltage Systems: 3V/5V, 5V/12V, 5V/24V  
Embedded Control Systems

**Pin Configurations and Typical Operating Circuit appear at end of data sheet.**

### Features

- ♦ **Small 5-Pin SOT23 Package**
- ♦ **Precision Factory-Set  $V_{CC}$  Reset Thresholds; Available in 0.1V Increments from 2.5V to 5V**
- ♦ **Immune to Short  $V_{CC}$  Transients**
- ♦ **Guaranteed RESET Valid to  $V_{CC} = 1V$**
- ♦ **Guaranteed Over Temperature**
- ♦ **8 $\mu$ A Supply Current**
- ♦ **Factory-Set Reset Timeout Delay from 1ms (min) to 1120ms (min)**
- ♦ **No External Components**
- ♦ **Manual Reset Input**
- ♦ **Under/Overvoltage Supply Monitoring**

### Ordering Information

| PART <sup>†</sup> | TEMP. RANGE  | PIN-PACKAGE |
|-------------------|--------------|-------------|
| MAX6305UK00D_-T   | 0°C to +70°C | 5 SOT23-5   |
| MAX6306UK__D_-T   | 0°C to +70°C | 5 SOT23-5   |
| MAX6307UK__D_-T   | 0°C to +70°C | 5 SOT23-5   |

<sup>†</sup> The MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313 are available with factory-set  $V_{CC}$  reset thresholds from 2.5V to 5V, in 0.1V increments. Insert the desired nominal reset threshold (from Table 1) into the blanks following the letters UK. All parts also offer factory-programmed reset timeout periods. Insert the number corresponding to the desired nominal timeout period index following the "D" in the part number (D1 = 1ms min, D2 = 20ms min, D3 = 140ms min, and D4 = 1120ms min). Contact factory for availability and minimum order sizes.

**Ordering Information continued at end of data sheet.**

### Selector Table

| PART    | OPEN-DRAIN<br>RESET<br>OUTPUT | PUSH/PULL<br>RESET<br>OUTPUT | PUSH/PULL<br>RESET<br>OUTPUT | FACTORY-<br>SET RESET<br>THRESHOLD<br>ON $V_{CC}$ | ADDITIONAL<br>UNDERVOLTAGE<br>RESET INPUTS | NEGATIVE/<br>OVERVOLTAGE<br>RESET INPUT | MANUAL-<br>RESET<br>INPUT |
|---------|-------------------------------|------------------------------|------------------------------|---------------------------------------------------|--------------------------------------------|-----------------------------------------|---------------------------|
| MAX6305 | ✓                             | —                            | —                            | —                                                 | 2                                          | —                                       | —                         |
| MAX6306 | ✓                             | —                            | —                            | ✓                                                 | 1                                          | —                                       | ✓                         |
| MAX6307 | ✓                             | —                            | —                            | ✓                                                 | 1                                          | ✓                                       | —                         |
| MAX6308 | —                             | ✓                            | —                            | —                                                 | 2                                          | —                                       | —                         |
| MAX6309 | —                             | ✓                            | —                            | ✓                                                 | 1                                          | —                                       | ✓                         |
| MAX6310 | —                             | ✓                            | —                            | ✓                                                 | 1                                          | ✓                                       | —                         |
| MAX6311 | —                             | —                            | ✓                            | —                                                 | 2                                          | —                                       | —                         |
| MAX6312 | —                             | —                            | ✓                            | ✓                                                 | 1                                          | —                                       | ✓                         |
| MAX6313 | —                             | —                            | ✓                            | ✓                                                 | 1                                          | ✓                                       | —                         |



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# 5-Pin, Multiple-Input, Programmable Reset ICs

## ABSOLUTE MAXIMUM RATINGS

V<sub>CC</sub> .....-0.3V to +6V  
 All Other Pins .....-0.3V to (V<sub>CC</sub> + 0.3V)  
 Input/Output Current, All Pins .....20mA  
 Rate of Rise, V<sub>CC</sub> .....100V/μs

Continuous Power Dissipation (T<sub>A</sub> = +70°C)  
 SOT23-5 (derate 7.1mW/°C above +70°C).....571mW  
 Operating Temperature Range.....0°C to +70°C  
 Storage Temperature Range .....-65°C to +160°C  
 Lead Temperature (soldering, 10sec) .....+300°C

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<sub>CC</sub> = +2.5V to +5.5V for the MAX6305/MAX6308/MAX6311, V<sub>CC</sub> = (V<sub>TH</sub> + 2.5%) to +5.5V for the MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313; T<sub>A</sub> = 0°C to +70°C; unless otherwise noted. Typical values are at T<sub>A</sub> = +25°C.)

| PARAMETER                                   | SYMBOL               | CONDITIONS                                              |                                                                                      | MIN                    | TYP                 | MAX                    | UNITS  |
|---------------------------------------------|----------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------|---------------------|------------------------|--------|
| V <sub>CC</sub> Range                       |                      | T <sub>A</sub> = 0°C to +70°C (Note 1)                  |                                                                                      | 1.0                    |                     | 5.5                    | V      |
| Supply Current                              | I <sub>CC</sub>      | V <sub>CC</sub> = 5.5V                                  |                                                                                      |                        | 8                   | 16                     | μA     |
| Reset Threshold<br>(Note 2)                 | V <sub>TH</sub>      | MAX6306/MAX6307/<br>MAX6309/MAX6310/<br>MAX6312/MAX6313 | T <sub>A</sub> = +25°C                                                               | V <sub>TH</sub> - 1.5% | V <sub>TH</sub>     | V <sub>TH</sub> + 1.5% | V      |
|                                             |                      |                                                         | T <sub>A</sub> = 0°C to +70°C                                                        | V <sub>TH</sub> - 2.5% |                     | V <sub>TH</sub> + 2.5% |        |
| Reset Threshold<br>Tempco                   | ΔV <sub>TH</sub> /°C |                                                         |                                                                                      |                        | 40                  |                        | ppm/°C |
| Reset Threshold<br>Hysteresis               | V <sub>TH</sub> HYST |                                                         |                                                                                      |                        | 2 x V <sub>TH</sub> |                        | mV     |
| Reset Timeout Period                        | t <sub>RP</sub>      | D1                                                      |                                                                                      | 1                      | 1.4                 | 2                      | ms     |
|                                             |                      | D2                                                      |                                                                                      | 20                     | 28                  | 40                     |        |
|                                             |                      | D3                                                      |                                                                                      | 140                    | 200                 | 280                    |        |
|                                             |                      | D4                                                      |                                                                                      | 1120                   | 1570                | 2240                   |        |
| $\overline{\text{RESET}}$ Output<br>Voltage | V <sub>OL</sub>      | MAX6305–MAX6310                                         | V <sub>CC</sub> > 4.25V, I <sub>SINK</sub> = 3.2mA                                   |                        |                     | 0.4                    | V      |
|                                             |                      |                                                         | V <sub>CC</sub> > 2.5V, I <sub>SINK</sub> = 1.2mA                                    |                        |                     | 0.3                    |        |
|                                             |                      |                                                         | T <sub>A</sub> = 0°C to +70°C,<br>V <sub>CC</sub> > 1.2V, I <sub>SINK</sub> = 500μA  |                        |                     | 0.3                    |        |
|                                             |                      |                                                         | T <sub>A</sub> = 0°C to +70°C,<br>V <sub>CC</sub> > 1.0V, I <sub>SINK</sub> = 50μA   |                        |                     | 0.3                    |        |
|                                             | V <sub>OH</sub>      | MAX6308/MAX6309/<br>MAX6310                             | V <sub>CC</sub> > 4.25V,<br>I <sub>SOURCE</sub> = 800μA                              | V <sub>CC</sub> - 1.5  |                     |                        |        |
|                                             |                      |                                                         | V <sub>CC</sub> > 2.5V,<br>I <sub>SOURCE</sub> = 500μA                               | 0.8 x V <sub>CC</sub>  |                     |                        |        |
| RESET Output<br>Voltage                     | V <sub>OL</sub>      | MAX6311/MAX6312/<br>MAX6313                             | V <sub>CC</sub> > 4.25V, I <sub>SINK</sub> = 3.2mA                                   |                        |                     | 0.4                    | V      |
|                                             |                      |                                                         | V <sub>CC</sub> > 2.5V, I <sub>SINK</sub> = 1.2mA                                    |                        |                     | 0.3                    |        |
|                                             | V <sub>OH</sub>      |                                                         | V <sub>CC</sub> > 1.8V,<br>I <sub>SOURCE</sub> = 150μA                               | 0.8 x V <sub>CC</sub>  |                     |                        |        |
|                                             |                      |                                                         | T <sub>A</sub> = 0°C to +70°C,<br>V <sub>CC</sub> > 1.0V, I <sub>SOURCE</sub> = 10μA | 0.8 x V <sub>CC</sub>  |                     |                        |        |

# 5-Pin, Multiple-Input, Programmable Reset ICs

MAX6305-MAX6313

## ELECTRICAL CHARACTERISTICS (continued)

( $V_{CC} = +2.5V$  to  $+5.5V$  for the MAX6305/MAX6308/MAX6311,  $V_{CC} = (V_{TH} + 2.5\%)$  to  $+5.5V$  for the MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313;  $T_A = 0^\circ C$  to  $+70^\circ C$ ; unless otherwise noted. Typical values are at  $T_A = +25^\circ C$ .)

| PARAMETER                                    | SYMBOL          | CONDITIONS                           | MIN            | TYP  | MAX     | UNITS      |
|----------------------------------------------|-----------------|--------------------------------------|----------------|------|---------|------------|
| MANUAL-RESET INPUT (MAX6306/MAX6309/MAX6312) |                 |                                      |                |      |         |            |
| $\overline{MR}$ Input                        | $V_{IL}$        | $V_{TH} > 4.0V$                      | 0.8            |      | V       |            |
|                                              | $V_{IH}$        |                                      | 2.4            |      |         |            |
|                                              | $V_{IL}$        | $V_{TH} < 4.0V$                      | 0.3 x $V_{CC}$ |      |         |            |
|                                              | $V_{IH}$        |                                      | 0.7 x $V_{CC}$ |      |         |            |
| $\overline{MR}$ Minimum Input Pulse          |                 |                                      | 1              |      | $\mu s$ |            |
| $\overline{MR}$ Glitch Rejection             |                 |                                      | 0.1            |      | $\mu s$ |            |
| $\overline{MR}$ to Reset Delay               |                 |                                      | 500            |      | nsV     |            |
| $\overline{MR}$ Pull-Up Resistance           |                 |                                      | 32             | 63.5 | 100     | k $\Omega$ |
| ADJUSTABLE RESET COMPARATOR INPUTS           |                 |                                      |                |      |         |            |
| RST IN Input Threshold                       | $V_{RSTH}$      | $T_A = +25^{\circ}C$                 | 1.21           | 1.23 | 1.25    | V          |
|                                              |                 | $T_A = 0^{\circ}C$ to $+70^{\circ}C$ | 1.20           |      | 1.26    |            |
| RST IN Input Current                         | $I_{RST\ IN\_}$ | $0V < V_{RST\ IN\_} < V_{CC} - 0.3V$ | -25            |      | 25      | nA         |
| RST IN Hysteresis                            |                 |                                      | 2.5            |      |         | mV         |

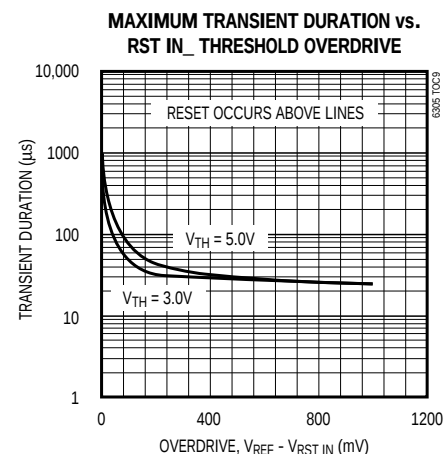
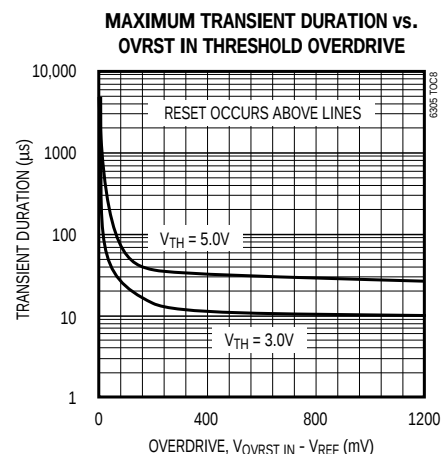
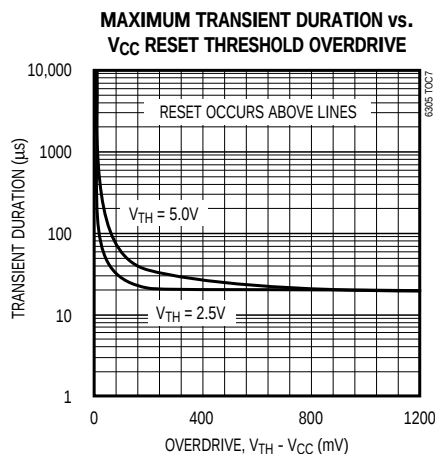
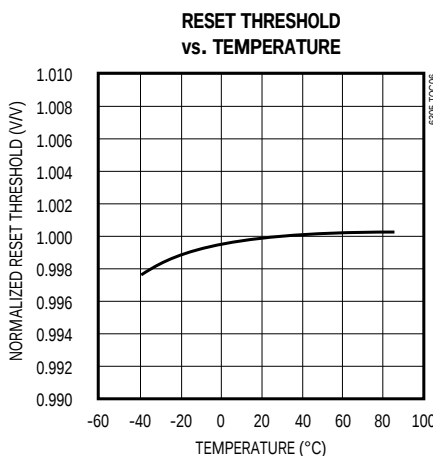
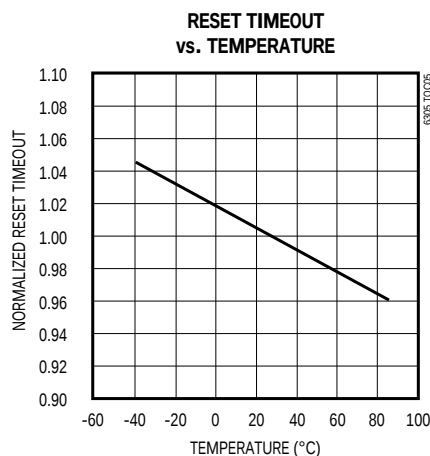
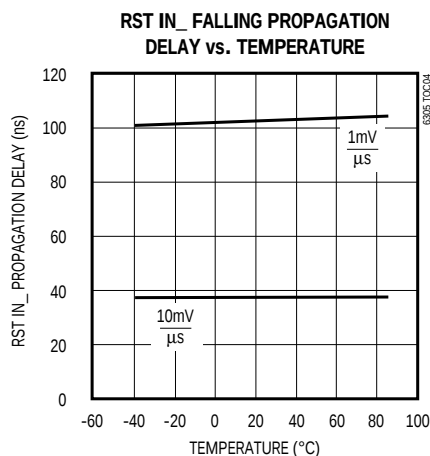
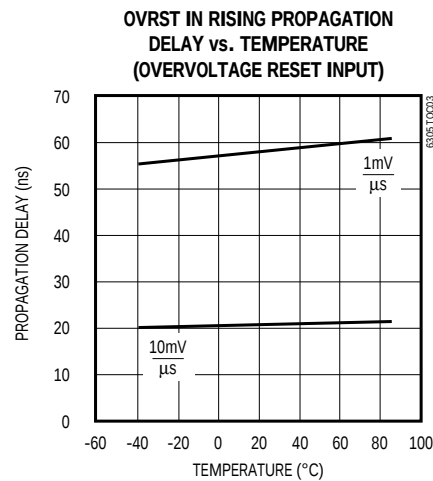
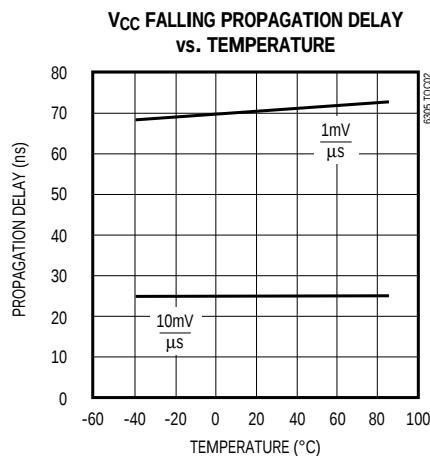
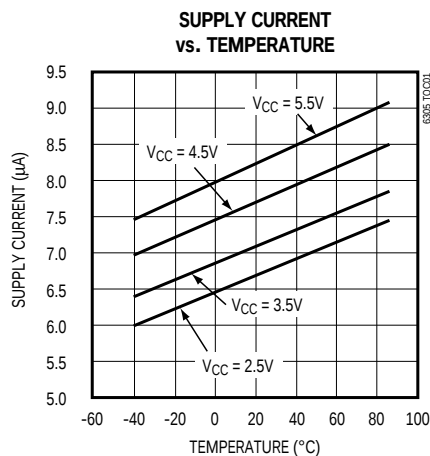
**Note 1:** The MAX6305/MAX6308/MAX6311 switch from undervoltage reset to normal operation between  $1.5V < V_{CC} < 2.5V$ .

**Note 2:** The MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313 monitor  $V_{CC}$  through an internal factory-trimmed voltage divider, which programs the nominal reset threshold. Factory-trimmed reset thresholds are available in approximately 100mV increments from 2.5V to 5V (Table 1).

# 5-Pin, Multiple-Input, Programmable Reset ICs

## Typical Operating Characteristics

( $V_{CC} = +5V$ ,  $T_A = +25^\circ C$ , unless otherwise noted.)



# 5-Pin, Multiple-Input, Programmable Reset ICs

## Pin Description

MAX6305–MAX6313

| PIN                           |                               |                               | NAME                      | FUNCTION                                                                                                                                                                                                                                                              |
|-------------------------------|-------------------------------|-------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MAX6305<br>MAX6308<br>MAX6311 | MAX6306<br>MAX6309<br>MAX6312 | MAX6307<br>MAX6310<br>MAX6313 |                           |                                                                                                                                                                                                                                                                       |
| 1                             | 1                             | 1                             | $\overline{\text{RESET}}$ | Active-Low, Open-Drain Reset Output for the MAX6305/MAX6306/MAX6307. Active-Low, Push/Pull Reset Output (sources and sinks current) for the MAX6308/MAX6309/MAX6310.                                                                                                  |
|                               |                               |                               | RESET                     | Active-High, Push/Pull Reset Output for the MAX6311/MAX6312/MAX6313                                                                                                                                                                                                   |
| 2                             | 2                             | 2                             | GND                       | System Ground                                                                                                                                                                                                                                                         |
| —                             | 3                             | —                             | $\overline{\text{MR}}$    | Manual-Reset Input. Pull low to force a reset. $\overline{\text{RESET}}$ /RESET remains active as long as $\overline{\text{MR}}$ is low and for the timeout period after $\overline{\text{MR}}$ goes high. Leave unconnected or connect to $V_{\text{CC}}$ if unused. |
| 3, 4                          | —                             | —                             | RST IN1,<br>RST IN2       | Undervoltage Reset Comparator Input. Asserts reset when the monitored voltage falls below the programmed threshold. Set the reset threshold with an external resistor divider. Connect to $V_{\text{CC}}$ if unused.                                                  |
| —                             | 4                             | 3                             | RST IN                    |                                                                                                                                                                                                                                                                       |
| —                             | —                             | 4                             | OVRST IN                  | Overvoltage Reset Comparator Input. Asserts reset when the monitored voltage exceeds the programmed threshold. Set the reset threshold with an external resistor divider. Connect to GND if unused.                                                                   |
| 5                             | 5                             | 5                             | $V_{\text{CC}}$           | System Supply. The MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313 also monitor $V_{\text{CC}}$ through an internal factory-trimmed resistor divider to the reset comparator.                                                                                         |

## Detailed Description

The MAX6305–MAX6313 CMOS microprocessor ( $\mu\text{P}$ ) supervisory circuits are designed to monitor more than one power supply and issue a system reset when any monitored supply falls out of regulation. The MAX6305/MAX6308/MAX6311 have two adjustable undervoltage reset inputs (RST IN1 and RST IN2). The MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313 monitor  $V_{\text{CC}}$  through an internal, factory-trimmed voltage divider. The MAX6306/MAX6309/MAX6312 have, in addition, an adjustable undervoltage reset input and a manual-reset input. The internal voltage divider sets the reset threshold as specified in the device part number (Table 1). The MAX6307/MAX6310/MAX6313 feature an adjustable undervoltage reset input (RST IN) and an adjustable overvoltage reset input (OVRST IN) in addition to the factory-trimmed reset threshold on the  $V_{\text{CC}}$  monitor. Program the adjustable reset inputs with an external resistor divider (see *Adjustable Reset Inputs* section).

## Reset Outputs

A  $\mu\text{P}$ 's reset input starts the  $\mu\text{P}$  in a known state. These  $\mu\text{P}$  supervisory circuits assert reset to prevent code-execution errors during power-up, power-down, or brownout conditions.

$\overline{\text{RESET}}$  (MAX6305–MAX6310) and RESET (MAX6311/MAX6312/MAX6313) are guaranteed to be asserted at a valid logic level for  $V_{\text{CC}} > 1\text{V}$  (see *Electrical Characteristics*). Once all monitored voltages exceed their programmed reset thresholds, an internal timer keeps reset asserted for the reset timeout period ( $t_{\text{RP}}$ ); after this interval, reset deasserts.

If a brownout condition occurs (any or all monitored voltages dip outside their programmed reset threshold), reset asserts (RESET goes high;  $\overline{\text{RESET}}$  goes low). Any time any of the monitored voltages dip below their reset threshold, the internal timer resets to zero and reset asserts. The internal timer starts when all of the monitored voltages return above their reset thresholds, and reset remains asserted for a reset timeout period. The MAX6305/MAX6306/MAX6307 feature an active-low,

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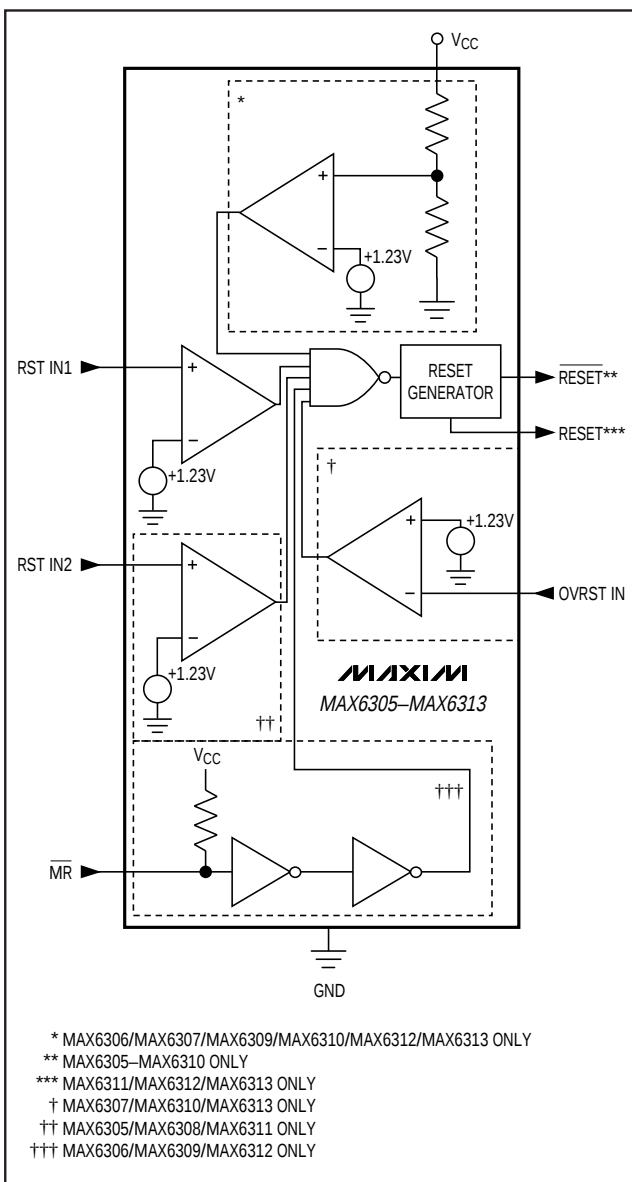


Figure 1. Functional Diagram

open-drain, N-channel output. The MAX6308/MAX6309/MAX6310 feature an active-low, complementary output structure that both sinks and sources current, and the MAX6311/MAX6312/MAX6313 have an active-high complementary reset output.

The MAX6305/MAX6308/MAX6311 switch from undervoltage lockout operation to normal operation between  $1.5V < V_{CC} < 2.5V$ . Below 1.5V,  $V_{CC}$  undervoltage-lockout mode asserts  $\overline{RESET}$ . Above 2.5V,  $V_{CC}$  normal-operation mode asserts reset if  $RST\ IN_{-}$  falls below the  $RST\ IN_{-}$  threshold.

### Manual-Reset Input (MAX6306/MAX6309/MAX6312)

Many  $\mu P$ -based products require manual-reset capability, allowing an operator or external logic circuitry to initiate a reset. A logic low on  $\overline{MR}$  asserts reset. Reset remains asserted while  $\overline{MR}$  is low, and for a reset active timeout period ( $t_{RP}$ ) after  $\overline{MR}$  returns high. This input has an internal 63.5k $\Omega$  pull-up resistor, so it can be left open if it is not used.  $\overline{MR}$  can be driven with TTL-logic levels in 5V systems, with CMOS-logic levels in 3V systems, or with open-drain/collector output devices. Connect a normally open momentary switch from  $\overline{MR}$  to GND to create a manual-reset function; external debounce circuitry is not required. If  $\overline{MR}$  is driven from long cables or if the device is used in a noisy environment, connecting a 0.1 $\mu F$  capacitor from  $\overline{MR}$  to ground provides additional noise immunity.

The  $\overline{MR}$  pin has internal ESD-protection circuitry that may be forward biased under certain conditions, drawing excessive current. For example, assume the circuitry driving  $\overline{MR}$  uses a +5V supply other than  $V_{CC}$ . If  $V_{CC}$  drops or browns out lower than +4.7V,  $\overline{MR}$ 's absolute maximum rating is violated ( $-0.3V$  to  $(V_{CC} + 0.3V)$ ), and undesirable current flows through the ESD structure from  $\overline{MR}$  to  $V_{CC}$ . To avoid this, it is recommended that the supply for the  $\overline{MR}$  pin be the same as the supply monitored by  $V_{CC}$ . In this way, the voltage at  $\overline{MR}$  will not exceed  $V_{CC}$ .

### Adjustable Reset Inputs

The MAX6305–MAX6313 each have one or more reset inputs ( $RST\ IN_{-}$  /  $OVRST\ IN$ ). These inputs are compared to the internal reference voltage (Figure 1). Connect a resistor voltage divider to  $RST\ IN_{-}$  such that  $V_{RST\ IN_{-}}$  falls below  $V_{RSTH}$  (1.23V) when the monitored voltage ( $V_{IN}$ ) falls below the desired reset threshold ( $V_{TH}$ ) (Figure 2). Calculate the desired reset voltage with the following formula:

$$V_{TH} = \frac{R1 + R2}{R2} \times V_{RSTH}$$

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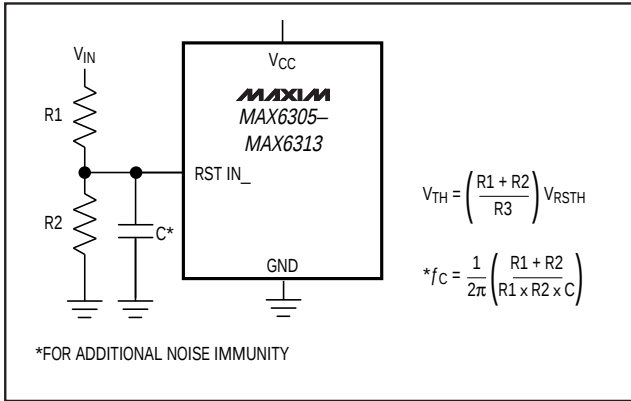


Figure 2. Increasing Noise Immunity

The  $\pm 25\text{nA}$  max input leakage current allows resistors on the order of megohms. Choose the pull-up resistor in the divider to minimize the error due to the input leakage current. The error term in the calculated threshold is simply:

$$\pm 25\text{nA} \times R1$$

If you choose R1 to be  $1\text{M}\Omega$ , the resulting error is  $\pm 25 \times 10^{-9} \times 1 \times 10^6 = \pm 25\text{mV}$ .

Like the  $V_{CC}$  voltage monitors on the MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313, the RST IN inputs (when used with a voltage divider) are designed to ignore fast voltage transients. Increase the noise immunity by connecting a capacitor on the order of  $0.1\mu\text{F}$  between RST IN and GND (Figure 2). This creates a single-pole lowpass filter with a corner frequency given by:

$$f = (1/2\pi) / (R1 + R2)(R1 \times R2 \times C)$$

For example, if  $R1 = 1\text{M}\Omega$  and  $R2 = 1.6\text{M}\Omega$ , adding a  $0.1\mu\text{F}$  capacitor from RST IN to ground results in a lowpass corner frequency of  $f = 2.59\text{Hz}$ . Note that adding capacitance to RST IN slows the circuit's overall response time.

### Applications Information

#### Interfacing to $\mu\text{Ps}$ with Bidirectional Reset Pins

Since the  $\overline{\text{RESET}}$  output on the MAX6305/MAX6306/MAX6307 is open drain, these devices interface easily with  $\mu\text{Ps}$  that have bidirectional reset pins, such as the Motorola 68HC11. Connecting the  $\mu\text{P}$  supervisor's  $\overline{\text{RESET}}$  output directly to the microcontroller's  $\overline{\text{RESET}}$  pin with a single pull-up resistor allows either device to assert reset (Figure 3).

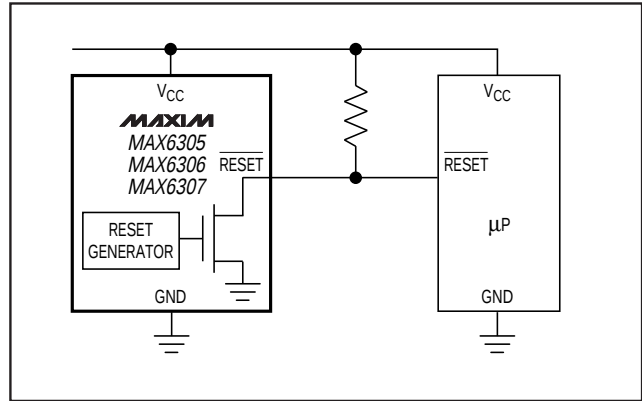


Figure 3. Interfacing to  $\mu\text{Ps}$  with Bidirectional Reset I/O

#### Negative-Going $V_{CC}$ Transients

In addition to issuing a reset to the  $\mu\text{P}$  during power-up, power-down, and brownout conditions, these devices are relatively immune to short-duration, negative-going  $V_{CC}$  transients (glitches).

The *Typical Operating Characteristics* show the Maximum Transient Duration vs.  $V_{CC}$  Reset Threshold Overdrive, for which reset pulses are not generated. The graph was produced using negative-going pulses, starting at  $V_{TH}$  max, and ending below the programmed reset threshold by the magnitude indicated (reset threshold overdrive). The graph shows the maximum pulse width that a negative-going  $V_{CC}$  transient may typically have without causing a reset pulse to be issued. As the amplitude of the transient increases (i.e., goes farther below the reset threshold), the maximum allowable pulse width decreases.

RST IN / OVRST IN are also immune to negative/positive-going transients (see *Typical Operating Characteristics*). A  $0.1\mu\text{F}$  bypass capacitor mounted close to the RST IN, OVRST IN, and/or the  $V_{CC}$  pin provides additional transient immunity.

#### Ensuring a Valid $\overline{\text{RESET}}$ /RESET Output Down to $V_{CC} = 0\text{V}$

When  $V_{CC}$  falls below  $1\text{V}$ , push/pull structured  $\overline{\text{RESET}}$ /RESET current sinking (or sourcing) capabilities decrease drastically. High-impedance CMOS-logic inputs connected to  $\overline{\text{RESET}}$  can drift to undetermined voltages. This presents no problem in most applications, since most  $\mu\text{Ps}$  and other circuitry do not operate with  $V_{CC}$  below  $1\text{V}$ . In those applications where  $\overline{\text{RESET}}$  must be valid down to  $0\text{V}$ , adding a pull-down resistor between  $\overline{\text{RESET}}$  and ground sinks any stray leakage

## 5-Pin, Multiple-Input, Programmable Reset ICs

currents, holding  $\overline{\text{RESET}}$  low (Figure 4). The pull-down resistor's value is not critical; 100k $\Omega$  is large enough not to load  $\overline{\text{RESET}}$  and small enough to pull  $\overline{\text{RESET}}$  to ground. For applications where  $\overline{\text{RESET}}$  must be valid to  $V_{CC}$ , a 100k $\Omega$  pull-up resistor between  $\overline{\text{RESET}}$  and  $V_{CC}$  will hold  $\overline{\text{RESET}}$  high when  $V_{CC}$  falls below 1V (Figure 5).

Since the MAX6305/MAX6306/MAX6307 have open-drain, active-low outputs, they typically use a pull-up resistor. With these devices and under these conditions ( $V_{CC} < 1V$ ),  $\overline{\text{RESET}}$  will most likely not maintain an active condition, but will drift toward a nonactive level due to the pull-up resistor and the  $\overline{\text{RESET}}$  output's reduction in sinking capability. These devices are not recommended for applications that require a valid  $\overline{\text{RESET}}$  output below 1V.

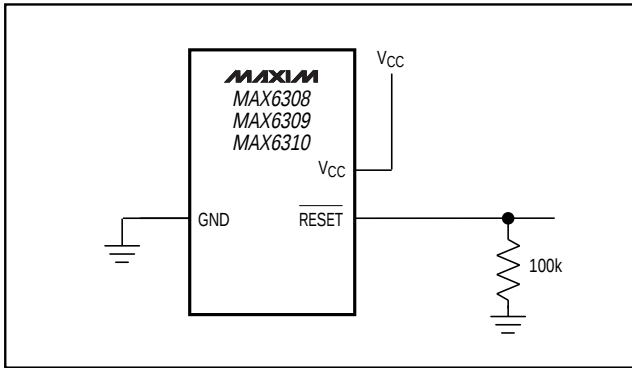


Figure 4. Ensuring  $\overline{\text{RESET}}$  Valid to  $V_{CC} = 0V$

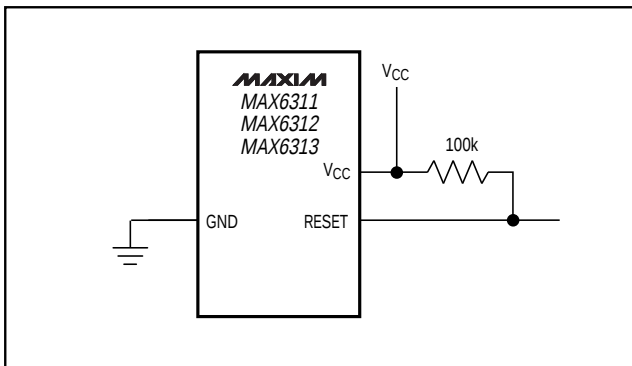


Figure 5. Ensuring  $\overline{\text{RESET}}$  Valid to  $V_{CC} = 0V$

**Table 1. Factory-Trimmed Reset Thresholds\***

| SUFFIX | $T_A = +25^\circ\text{C}$             |       |       | $T_A = 0^\circ\text{C to } +70^\circ\text{C}$ |       |
|--------|---------------------------------------|-------|-------|-----------------------------------------------|-------|
|        | MIN                                   | TYP   | MAX   | MIN                                           | MAX   |
| UK00   | Preprogrammed Threshold Not Available |       |       | Preprogrammed Threshold Not Available         |       |
| UK50   | 4.925                                 | 5.000 | 5.075 | 4.875                                         | 5.125 |
| UK49   | 4.827                                 | 4.900 | 4.974 | 4.778                                         | 5.023 |
| UK48   | 4.728                                 | 4.800 | 4.872 | 4.680                                         | 4.920 |
| UK47   | 4.630                                 | 4.700 | 4.771 | 4.583                                         | 4.818 |
| UK46   | 4.561                                 | 4.630 | 4.699 | 4.514                                         | 4.746 |
| UK45   | 4.433                                 | 4.500 | 4.568 | 4.388                                         | 4.613 |
| UK44   | 4.314                                 | 4.380 | 4.446 | 4.270                                         | 4.490 |
| UK43   | 4.236                                 | 4.300 | 4.365 | 4.193                                         | 4.408 |
| UK42   | 4.137                                 | 4.200 | 4.263 | 4.095                                         | 4.305 |
| UK41   | 4.039                                 | 4.100 | 4.162 | 3.998                                         | 4.203 |
| UK40   | 3.940                                 | 4.000 | 4.060 | 3.900                                         | 4.100 |
| UK39   | 3.842                                 | 3.900 | 3.959 | 3.803                                         | 3.998 |
| UK38   | 3.743                                 | 3.800 | 3.857 | 3.705                                         | 3.895 |
| UK37   | 3.645                                 | 3.700 | 3.756 | 3.608                                         | 3.793 |
| UK36   | 3.546                                 | 3.600 | 3.654 | 3.510                                         | 3.690 |
| UK35   | 3.448                                 | 3.500 | 3.553 | 3.413                                         | 3.588 |
| UK34   | 3.349                                 | 3.400 | 3.451 | 3.315                                         | 3.485 |
| UK33   | 3.251                                 | 3.300 | 3.350 | 3.218                                         | 3.383 |
| UK32   | 3.152                                 | 3.200 | 3.248 | 3.120                                         | 3.280 |
| UK31   | 3.034                                 | 3.080 | 3.126 | 3.003                                         | 3.157 |
| UK30   | 2.955                                 | 3.000 | 3.045 | 2.925                                         | 3.075 |
| UK29   | 2.886                                 | 2.930 | 2.974 | 2.857                                         | 3.000 |
| UK28   | 2.758                                 | 2.800 | 2.842 | 2.730                                         | 2.870 |
| UK27   | 2.660                                 | 2.700 | 2.741 | 2.633                                         | 2.768 |
| UK26   | 2.591                                 | 2.630 | 2.669 | 2.564                                         | 2.696 |
| UK25   | 2.463                                 | 2.500 | 2.538 | 2.438                                         | 2.563 |

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

# 5-Pin, Multiple-Input, Programmable Reset ICs

**Table 2. Device Marking Codes**

| DEVICE          | CODE | DEVICE          | CODE  | DEVICE          | CODE | DEVICE          | CODE |
|-----------------|------|-----------------|-------|-----------------|------|-----------------|------|
| MAX6305UK00D1-T | ABAK | MAX6306UK41D3-T | ABCA  | MAX6306UK30D1-T | ABDQ | MAX6307UK46D3-T | ABFG |
| MAX6305UK00D2-T | ABAL | MAX6306UK41D4-T | ABCB  | MAX6306UK30D2-T | ABDR | MAX6307UK46D4-T | ABFH |
| MAX6305UK00D3-T | ABAM | MAX6306UK40D1-T | ABCC  | MAX6306UK30D3-T | ABDS | MAX6307UK45D1-T | ABFI |
| MAX6305UK00D4-T | ABAN | MAX6306UK40D2-T | ABCD  | MAX6306UK30D4-T | ABDT | MAX6307UK45D2-T | ABFJ |
| MAX6306UK50D1-T | ABAO | MAX6306UK40D3-T | ABCE  | MAX6306UK29D1-T | ABDU | MAX6307UK45D3-T | ABFK |
| MAX6306UK50D2-T | ABAP | MAX6306UK40D4-T | ABCF  | MAX6306UK29D2-T | ABDV | MAX6307UK45D4-T | ABFL |
| MAX6306UK50D3-T | ABAQ | MAX6306UK39D1-T | ABCG  | MAX6306UK29D3-T | ABDW | MAX6307UK44D1-T | ABFM |
| MAX6306UK50D4-T | ABAR | MAX6306UK39D2-T | ABCH  | MAX6306UK29D4-T | ABDX | MAX6307UK44D2-T | ABFN |
| MAX6306UK49D1-T | ABAS | MAX6306UK39D3-T | ABCI  | MAX6306UK28D1-T | ABDY | MAX6307UK44D3-T | ABFO |
| MAX6306UK49D2-T | ABAT | MAX6306UK39D4-T | ABCJ  | MAX6306UK28D2-T | ABDZ | MAX6307UK44D4-T | ABFP |
| MAX6306UK49D3-T | ABAU | MAX6306UK38D1-T | ABCK  | MAX6306UK28D3-T | ABEA | MAX6307UK43D1-T | ABFQ |
| MAX6306UK49D4-T | ABAV | MAX6306UK38D2-T | ABCL  | MAX6306UK28D4-T | ABEB | MAX6307UK43D2-T | ABFR |
| MAX6306UK48D1-T | ABAW | MAX6306UK38D3-T | ABCM  | MAX6306UK27D1-T | ABEC | MAX6307UK43D3-T | ABFS |
| MAX6306UK48D2-T | ABAX | MAX6306UK38D4-T | ABCN  | MAX6306UK27D2-T | ABED | MAX6307UK43D4-T | ABFT |
| MAX6306UK48D3-T | ABAY | MAX6306UK37D1-T | ABCO  | MAX6306UK27D3-T | ABEE | MAX6307UK42D1-T | ABFU |
| MAX6306UK48D4-T | ABAZ | MAX6306UK37D2-T | ABCP  | MAX6306UK27D4-T | ABEF | MAX6307UK42D2-T | ABFV |
| MAX6306UK47D1-T | ABBA | MAX6306UK37D3-T | ABCQ  | MAX6306UK26D1-T | ABEG | MAX6307UK42D3-T | ABFW |
| MAX6306UK47D2-T | ABBB | MAX6306UK37D4-T | ABCR  | MAX6306UK26D2-T | ABEH | MAX6307UK42D4-T | ABFX |
| MAX6306UK47D3-T | ABBC | MAX6306UK36D1-T | ABCS  | MAX6306UK26D3-T | ABEI | MAX6307UK41D1-T | ABFY |
| MAX6306UK47D4-T | ABBD | MAX6306UK36D2-T | ABCT  | MAX6306UK26D4-T | ABEJ | MAX6307UK41D2-T | ABFZ |
| MAX6306UK46D1-T | ABBE | MAX6306UK36D3-T | ABCU  | MAX6306UK25D1-T | ABEK | MAX6307UK41D3-T | ABGA |
| MAX6306UK46D2-T | ABBF | MAX6306UK36D4-T | ABCV  | MAX6306UK25D2-T | ABEL | MAX6307UK41D4-T | ABGB |
| MAX6306UK46D3-T | ABBG | MAX6306UK35D1-T | ABCW  | MAX6306UK25D3-T | ABEM | MAX6307UK40D1-T | ABGC |
| MAX6306UK46D4-T | ABBH | MAX6306UK35D2-T | ABCX  | MAX6306UK25D4-T | ABEN | MAX6307UK40D2-T | ABGD |
| MAX6306UK45D1-T | ABBI | MAX6306UK35D3-T | ABCY  | MAX6307UK50D1-T | ABEO | MAX6307UK40D3-T | ABGE |
| MAX6306UK45D2-T | ABBJ | MAX6306UK35D4-T | AB CZ | MAX6307UK50D2-T | ABEP | MAX6307UK40D4-T | ABGF |
| MAX6306UK45D3-T | ABBK | MAX6306UK34D1-T | ABDA  | MAX6307UK50D3-T | ABEQ | MAX6307UK39D1-T | ABGG |
| MAX6306UK45D4-T | ABBL | MAX6306UK34D2-T | ABDB  | MAX6307UK50D4-T | ABER | MAX6307UK39D2-T | ABGH |
| MAX6306UK44D1-T | ABBM | MAX6306UK34D3-T | ABDC  | MAX6307UK49D1-T | ABES | MAX6307UK39D3-T | ABGI |
| MAX6306UK44D2-T | ABBN | MAX6306UK34D4-T | ABDD  | MAX6307UK49D2-T | ABET | MAX6307UK39D4-T | ABGJ |
| MAX6306UK44D3-T | ABBO | MAX6306UK33D1-T | ABDE  | MAX6307UK49D3-T | ABEU | MAX6307UK38D1-T | ABGK |
| MAX6306UK44D4-T | ABBP | MAX6306UK33D2-T | ABDF  | MAX6307UK49D4-T | ABEV | MAX6307UK38D2-T | ABGL |
| MAX6306UK43D1-T | ABBQ | MAX6306UK33D3-T | ABDG  | MAX6307UK48D1-T | ABEW | MAX6307UK38D3-T | ABGM |
| MAX6306UK43D2-T | ABBR | MAX6306UK33D4-T | ABDH  | MAX6307UK48D2-T | ABEX | MAX6307UK38D4-T | ABGN |
| MAX6306UK43D3-T | ABBS | MAX6306UK32D1-T | ABDI  | MAX6307UK48D3-T | ABEY | MAX6307UK37D1-T | ABGO |
| MAX6306UK43D4-T | ABBT | MAX6306UK32D2-T | ABDJ  | MAX6307UK48D4-T | ABEZ | MAX6307UK37D2-T | ABGP |
| MAX6306UK42D1-T | ABBU | MAX6306UK32D3-T | ABDK  | MAX6307UK47D1-T | ABFA | MAX6307UK37D3-T | ABGQ |
| MAX6306UK42D2-T | ABBV | MAX6306UK32D4-T | ABDL  | MAX6307UK47D2-T | ABFB | MAX6307UK37D4-T | ABGR |
| MAX6306UK42D3-T | ABBW | MAX6306UK31D1-T | ABDM  | MAX6307UK47D3-T | ABFC | MAX6307UK36D1-T | ABGS |
| MAX6306UK42D4-T | ABBX | MAX6306UK31D2-T | ABDN  | MAX6307UK47D4-T | ABFD | MAX6307UK36D2-T | ABGT |
| MAX6306UK41D1-T | ABBY | MAX6306UK31D3-T | ABDO  | MAX6307UK46D1-T | ABFE | MAX6307UK36D3-T | ABGU |
| MAX6306UK41D2-T | ABBZ | MAX6306UK31D4-T | ABDP  | MAX6307UK46D2-T | ABFF | MAX6307UK36D4-T | ABGV |

MAX6305-MAX6313

# 5-Pin, Multiple-Input, Programmable Reset ICs

MAX6305-MAX6313

**Table 2. Device Marking Codes (continued)**

| DEVICE          | CODE | DEVICE          | CODE | DEVICE          | CODE | DEVICE          | CODE |
|-----------------|------|-----------------|------|-----------------|------|-----------------|------|
| MAX6307UK35D1-T | ABGW | MAX6307UK25D3-T | ABIM | MAX6309UK41D1-T | ABKC | MAX6309UK31D3-T | ABLS |
| MAX6307UK35D2-T | ABGX | MAX6307UK25D4-T | ABIN | MAX6309UK41D2-T | ABKD | MAX6309UK31D4-T | ABLT |
| MAX6307UK35D3-T | ABGY | MAX6308UK00D1-T | ABIO | MAX6309UK41D3-T | ABKE | MAX6309UK30D1-T | ABLU |
| MAX6307UK35D4-T | ABGZ | MAX6308UK00D2-T | ABIP | MAX6309UK41D4-T | ABKF | MAX6309UK30D2-T | ABLV |
| MAX6307UK34D1-T | ABHA | MAX6308UK00D3-T | ABIQ | MAX6309UK40D1-T | ABKG | MAX6309UK30D3-T | ABLW |
| MAX6307UK34D2-T | ABHB | MAX6308UK00D4-T | ABIR | MAX6309UK40D2-T | ABKH | MAX6309UK30D4-T | ABLX |
| MAX6307UK34D3-T | ABHC | MAX6309UK50D1-T | ABIS | MAX6309UK40D3-T | ABKI | MAX6309UK29D1-T | ABLY |
| MAX6307UK34D4-T | ABHD | MAX6309UK50D2-T | ABIT | MAX6309UK40D4-T | ABKJ | MAX6309UK29D2-T | ABLZ |
| MAX6307UK33D1-T | ABHE | MAX6309UK50D3-T | ABIU | MAX6309UK39D1-T | ABKK | MAX6309UK29D3-T | ABMA |
| MAX6307UK33D2-T | ABHF | MAX6309UK50D4-T | ABIV | MAX6309UK39D2-T | ABKL | MAX6309UK29D4-T | ABMB |
| MAX6307UK33D3-T | ABHG | MAX6309UK49D1-T | ABIW | MAX6309UK39D3-T | ABKM | MAX6309UK28D1-T | ABMC |
| MAX6307UK33D4-T | ABHH | MAX6309UK49D2-T | ABIX | MAX6309UK39D4-T | ABKN | MAX6309UK28D2-T | ABMD |
| MAX6307UK32D1-T | ABHI | MAX6309UK49D3-T | ABIY | MAX6309UK38D1-T | ABKO | MAX6309UK28D3-T | ABME |
| MAX6307UK32D2-T | ABHJ | MAX6309UK49D4-T | ABIZ | MAX6309UK38D2-T | ABKP | MAX6309UK28D4-T | ABMF |
| MAX6307UK32D3-T | ABHK | MAX6309UK48D1-T | ABJA | MAX6309UK38D3-T | ABKQ | MAX6309UK27D1-T | ABMG |
| MAX6307UK32D4-T | ABHL | MAX6309UK48D2-T | ABJB | MAX6309UK38D4-T | ABKR | MAX6309UK27D2-T | ABMH |
| MAX6307UK31D1-T | ABHM | MAX6309UK48D3-T | ABJC | MAX6309UK37D1-T | ABKS | MAX6309UK27D3-T | ABMI |
| MAX6307UK31D2-T | ABHN | MAX6309UK48D4-T | ABJD | MAX6309UK37D2-T | ABKT | MAX6309UK27D4-T | ABMJ |
| MAX6307UK31D3-T | ABHO | MAX6309UK47D1-T | ABJE | MAX6309UK37D3-T | ABKU | MAX6309UK26D1-T | ABMK |
| MAX6307UK31D4-T | ABHP | MAX6309UK47D2-T | ABJF | MAX6309UK37D4-T | ABKV | MAX6309UK26D2-T | ABML |
| MAX6307UK30D1-T | ABHQ | MAX6309UK47D3-T | ABJG | MAX6309UK36D1-T | ABKW | MAX6309UK26D3-T | ABMM |
| MAX6307UK30D2-T | ABHR | MAX6309UK47D4-T | ABJH | MAX6309UK36D2-T | ABKX | MAX6309UK26D4-T | ABMN |
| MAX6307UK30D3-T | ABHS | MAX6309UK46D1-T | ABJI | MAX6309UK36D3-T | ABKY | MAX6309UK25D1-T | ABMO |
| MAX6307UK30D4-T | ABHT | MAX6309UK46D2-T | ABJJ | MAX6309UK36D4-T | ABKZ | MAX6309UK25D2-T | ABMP |
| MAX6307UK29D1-T | ABHU | MAX6309UK46D3-T | ABJK | MAX6309UK35D1-T | ABLA | MAX6309UK25D3-T | ABMQ |
| MAX6307UK29D2-T | ABHV | MAX6309UK46D4-T | ABJL | MAX6309UK35D2-T | ABLB | MAX6309UK25D4-T | ABMR |
| MAX6307UK29D3-T | ABHW | MAX6309UK45D1-T | ABJM | MAX6309UK35D3-T | ABLC | MAX6310UK50D1-T | ABMS |
| MAX6307UK29D4-T | ABHX | MAX6309UK45D2-T | ABJN | MAX6309UK35D4-T | ABLD | MAX6310UK50D2-T | ABMT |
| MAX6307UK28D1-T | ABHY | MAX6309UK45D3-T | ABJO | MAX6309UK34D1-T | ABLE | MAX6310UK50D3-T | ABMU |
| MAX6307UK28D2-T | ABHZ | MAX6309UK45D4-T | ABJP | MAX6309UK34D2-T | ABLF | MAX6310UK50D4-T | ABMV |
| MAX6307UK28D3-T | ABIA | MAX6309UK44D1-T | ABJQ | MAX6309UK34D3-T | ABLG | MAX6310UK49D1-T | ABMW |
| MAX6307UK28D4-T | ABIB | MAX6309UK44D2-T | ABJR | MAX6309UK34D4-T | ABLH | MAX6310UK49D2-T | ABMX |
| MAX6307UK27D1-T | ABIC | MAX6309UK44D3-T | ABJS | MAX6309UK33D1-T | ABLI | MAX6310UK49D3-T | ABMY |
| MAX6307UK27D2-T | ABID | MAX6309UK44D4-T | ABJT | MAX6309UK33D2-T | ABLJ | MAX6310UK49D4-T | ABMZ |
| MAX6307UK27D3-T | ABIE | MAX6309UK43D1-T | ABJU | MAX6309UK33D3-T | ABLK | MAX6310UK48D1-T | ABNA |
| MAX6307UK27D4-T | ABIF | MAX6309UK43D2-T | ABJV | MAX6309UK33D4-T | ABLL | MAX6310UK48D2-T | ABNB |
| MAX6307UK26D1-T | ABIG | MAX6309UK43D3-T | ABJW | MAX6309UK32D1-T | ABLM | MAX6310UK48D3-T | ABNC |
| MAX6307UK26D2-T | ABIH | MAX6309UK43D4-T | ABJX | MAX6309UK32D2-T | ABLN | MAX6310UK48D4-T | ABND |
| MAX6307UK26D3-T | ABII | MAX6309UK42D1-T | ABJY | MAX6309UK32D3-T | ABLO | MAX6310UK47D1-T | ABNE |
| MAX6307UK26D4-T | ABIJ | MAX6309UK42D2-T | ABJZ | MAX6309UK32D4-T | ABLP | MAX6310UK47D2-T | ABNF |
| MAX6307UK25D1-T | ABIK | MAX6309UK42D3-T | ABKA | MAX6309UK31D1-T | ABLQ | MAX6310UK47D3-T | ABNG |
| MAX6307UK25D2-T | ABIL | MAX6309UK42D4-T | ABKB | MAX6309UK31D2-T | ABLR | MAX6310UK47D4-T | ABNH |

# 5-Pin, Multiple-Input, Programmable Reset ICs

**Table 2. Device Marking Codes (continued)**

| DEVICE          | CODE | DEVICE          | CODE | DEVICE          | CODE | DEVICE          | CODE |
|-----------------|------|-----------------|------|-----------------|------|-----------------|------|
| MAX6310UK46D1-T | ABNI | MAX6310UK36D3-T | ABOY | MAX6310UK25D1-T | ABQO | MAX6312UK42D3-T | ABSE |
| MAX6310UK46D2-T | ABNJ | MAX6310UK36D4-T | ABOZ | MAX6310UK25D2-T | ABQP | MAX6312UK42D4-T | ABSF |
| MAX6310UK46D3-T | ABNK | MAX6310UK35D1-T | ABPA | MAX6310UK25D3-T | ABQQ | MAX6312UK41D1-T | ABSG |
| MAX6310UK46D4-T | ABNL | MAX6310UK35D2-T | ABPB | MAX6310UK25D4-T | ABQR | MAX6312UK41D2-T | ABSH |
| MAX6310UK45D1-T | ABNM | MAX6310UK35D3-T | ABPC | MAX6311UK00D1-T | ABQS | MAX6312UK41D3-T | ABSI |
| MAX6310UK45D2-T | ABNN | MAX6310UK35D4-T | ABPD | MAX6311UK00D2-T | ABQT | MAX6312UK41D4-T | ABSJ |
| MAX6310UK45D3-T | ABNO | MAX6310UK34D1-T | ABPE | MAX6311UK00D3-T | ABQU | MAX6312UK40D1-T | ABSK |
| MAX6310UK45D4-T | ABNP | MAX6310UK34D2-T | ABPF | MAX6311UK00D4-T | ABQV | MAX6312UK40D2-T | ABSL |
| MAX6310UK44D1-T | ABNQ | MAX6310UK34D3-T | ABPG | MAX6311UK50D1-T | ABQW | MAX6312UK40D3-T | ABSM |
| MAX6310UK44D2-T | ABNR | MAX6310UK34D4-T | ABPH | MAX6312UK50D2-T | ABQX | MAX6312UK40D4-T | ABSN |
| MAX6310UK44D3-T | ABNS | MAX6310UK33D1-T | ABPI | MAX6312UK50D3-T | ABQY | MAX6312UK39D1-T | ABSO |
| MAX6310UK44D4-T | ABNT | MAX6310UK33D2-T | ABPJ | MAX6312UK50D4-T | ABQZ | MAX6312UK39D2-T | ABSP |
| MAX6310UK43D1-T | ABNU | MAX6310UK33D3-T | ABPK | MAX6312UK49D1-T | ABRA | MAX6312UK39D3-T | ABSQ |
| MAX6310UK43D2-T | ABNV | MAX6310UK33D4-T | ABPL | MAX6312UK49D2-T | ABRB | MAX6312UK39D4-T | ABSR |
| MAX6310UK43D3-T | ABNW | MAX6310UK32D1-T | ABPM | MAX6312UK49D3-T | ABRC | MAX6312UK38D1-T | ABSS |
| MAX6310UK43D4-T | ABNX | MAX6310UK32D2-T | ABPN | MAX6312UK49D4-T | ABRD | MAX6312UK38D2-T | ABST |
| MAX6310UK42D1-T | ABNY | MAX6310UK32D3-T | ABPO | MAX6312UK48D1-T | ABRE | MAX6312UK38D3-T | ABSU |
| MAX6310UK42D2-T | ABNZ | MAX6310UK32D4-T | ABPP | MAX6312UK48D2-T | ABRF | MAX6312UK38D4-T | ABSV |
| MAX6310UK42D3-T | ABOA | MAX6310UK31D1-T | ABPQ | MAX6312UK48D3-T | ABRG | MAX6312UK37D1-T | ABSW |
| MAX6310UK42D4-T | ABOB | MAX6310UK31D2-T | ABPR | MAX6312UK48D4-T | ABRH | MAX6312UK37D2-T | ABSX |
| MAX6310UK41D1-T | ABOC | MAX6310UK31D3-T | ABPS | MAX6312UK47D1-T | ABRI | MAX6312UK37D3-T | ABSY |
| MAX6310UK41D2-T | ABOD | MAX6310UK31D4-T | ABPT | MAX6312UK47D2-T | ABRJ | MAX6312UK37D4-T | ABSZ |
| MAX6310UK41D3-T | ABOE | MAX6310UK30D1-T | ABPU | MAX6312UK47D3-T | ABRK | MAX6312UK36D1-T | ABTA |
| MAX6310UK41D4-T | ABOF | MAX6310UK30D2-T | ABPV | MAX6312UK47D4-T | ABRL | MAX6312UK36D2-T | ABTB |
| MAX6310UK40D1-T | ABOG | MAX6310UK30D3-T | ABPW | MAX6312UK46D1-T | ABRM | MAX6312UK36D3-T | ABTC |
| MAX6310UK40D2-T | ABOH | MAX6310UK30D4-T | ABPX | MAX6312UK46D2-T | ABRN | MAX6312UK36D4-T | ABTD |
| MAX6310UK40D3-T | ABOI | MAX6310UK29D1-T | ABPY | MAX6312UK46D3-T | ABRO | MAX6312UK35D1-T | ABTE |
| MAX6310UK40D4-T | ABOJ | MAX6310UK29D2-T | ABPZ | MAX6312UK46D4-T | ABRP | MAX6312UK35D2-T | ABTF |
| MAX6310UK39D1-T | ABOK | MAX6310UK29D3-T | ABQA | MAX6312UK45D1-T | ABRQ | MAX6312UK35D3-T | ABTG |
| MAX6310UK39D2-T | ABOL | MAX6310UK29D4-T | ABQB | MAX6312UK45D2-T | ABRR | MAX6312UK35D4-T | ABTH |
| MAX6310UK39D3-T | ABOM | MAX6310UK28D1-T | ABQC | MAX6312UK45D3-T | ABRS | MAX6312UK34D1-T | ABTI |
| MAX6310UK39D4-T | ABON | MAX6310UK28D2-T | ABQD | MAX6312UK45D4-T | ABRT | MAX6312UK34D2-T | ABTJ |
| MAX6310UK38D1-T | ABOO | MAX6310UK28D3-T | ABQE | MAX6312UK44D1-T | ABRU | MAX6312UK34D3-T | ABTK |
| MAX6310UK38D2-T | ABOP | MAX6310UK28D4-T | ABQF | MAX6312UK44D2-T | ABRV | MAX6312UK34D4-T | ABTL |
| MAX6310UK38D3-T | ABOQ | MAX6310UK27D1-T | ABQG | MAX6312UK44D3-T | ABRW | MAX6312UK33D1-T | ABTM |
| MAX6310UK38D4-T | ABOR | MAX6310UK27D2-T | ABQH | MAX6312UK44D4-T | ABRX | MAX6312UK33D2-T | ABTN |
| MAX6310UK37D1-T | ABOS | MAX6310UK27D3-T | ABQI | MAX6312UK43D1-T | ABRY | MAX6312UK33D3-T | ABTO |
| MAX6310UK37D2-T | ABOT | MAX6310UK27D4-T | ABQJ | MAX6312UK43D2-T | ABRZ | MAX6312UK33D4-T | ABTP |
| MAX6310UK37D3-T | ABOU | MAX6310UK26D1-T | ABQK | MAX6312UK43D3-T | ABSA | MAX6312UK32D1-T | ABTQ |
| MAX6310UK37D4-T | ABOV | MAX6310UK26D2-T | ABQL | MAX6312UK43D4-T | ABSB | MAX6312UK32D2-T | ABTR |
| MAX6310UK36D1-T | ABOW | MAX6310UK26D3-T | ABQM | MAX6312UK42D1-T | ABSC | MAX6312UK32D3-T | ABTS |
| MAX6310UK36D2-T | ABOX | MAX6310UK26D4-T | ABQN | MAX6312UK42D2-T | ABSD | MAX6312UK32D4-T | ABTT |

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# 5-Pin, Multiple-Input, Programmable Reset ICs

MAX6305–MAX6313

**Table 2. Device Marking Codes (continued)**

| DEVICE          | CODE | DEVICE          | CODE | DEVICE          | CODE | DEVICE          | CODE |
|-----------------|------|-----------------|------|-----------------|------|-----------------|------|
| MAX6312UK31D1-T | ABTU | MAX6313UK49D2-T | ABVB | MAX6313UK41D3-T | ABWI | MAX6313UK33D4-T | ABXP |
| MAX6312UK31D2-T | ABTV | MAX6313UK49D3-T | ABVC | MAX6313UK41D4-T | ABWJ | MAX6313UK32D1-T | ABXQ |
| MAX6312UK31D3-T | ABTW | MAX6313UK49D4-T | ABVD | MAX6313UK40D1-T | ABWK | MAX6313UK32D2-T | ABXR |
| MAX6312UK31D4-T | ABTX | MAX6313UK48D1-T | ABVE | MAX6313UK40D2-T | ABWL | MAX6313UK32D3-T | ABXS |
| MAX6312UK30D1-T | ABTY | MAX6313UK48D2-T | ABVF | MAX6313UK40D3-T | ABWM | MAX6313UK32D4-T | ABXT |
| MAX6312UK30D2-T | ABTZ | MAX6313UK48D3-T | ABVG | MAX6313UK40D4-T | ABWN | MAX6313UK31D1-T | ABXU |
| MAX6312UK30D3-T | ABUA | MAX6313UK48D4-T | ABVH | MAX6313UK39D1-T | ABWO | MAX6313UK31D2-T | ABXV |
| MAX6312UK30D4-T | ABUB | MAX6313UK47D1-T | ABVI | MAX6313UK39D2-T | ABWP | MAX6313UK31D3-T | ABXW |
| MAX6312UK29D1-T | ABUC | MAX6313UK47D2-T | ABVJ | MAX6313UK39D3-T | ABWQ | MAX6313UK31D4-T | ABXX |
| MAX6312UK29D2-T | ABUD | MAX6313UK47D3-T | ABVK | MAX6313UK39D4-T | ABWR | MAX6313UK30D1-T | ABXY |
| MAX6312UK29D3-T | ABUE | MAX6313UK47D4-T | ABVL | MAX6313UK38D1-T | ABWS | MAX6313UK30D2-T | ABXZ |
| MAX6312UK29D4-T | ABUF | MAX6313UK46D1-T | ABVM | MAX6313UK38D2-T | ABWT | MAX6313UK30D3-T | ABYA |
| MAX6312UK28D1-T | ABUG | MAX6313UK46D2-T | ABVN | MAX6313UK38D3-T | ABWU | MAX6313UK30D4-T | ABYB |
| MAX6312UK28D2-T | ABUH | MAX6313UK46D3-T | ABVO | MAX6313UK38D4-T | ABWV | MAX6313UK29D1-T | ABYC |
| MAX6312UK28D3-T | ABUI | MAX6313UK46D4-T | ABVP | MAX6313UK37D1-T | ABWW | MAX6313UK29D2-T | ABYD |
| MAX6312UK28D4-T | ABUJ | MAX6313UK45D1-T | ABVQ | MAX6313UK37D2-T | ABWX | MAX6313UK29D3-T | ABYE |
| MAX6312UK27D1-T | ABUK | MAX6313UK45D2-T | ABVR | MAX6313UK37D3-T | ABWY | MAX6313UK29D4-T | ABYF |
| MAX6312UK27D2-T | ABUL | MAX6313UK45D3-T | ABVS | MAX6313UK37D4-T | ABWZ | MAX6313UK28D1-T | ABYG |
| MAX6312UK27D3-T | ABUM | MAX6313UK45D4-T | ABVT | MAX6313UK36D1-T | ABXA | MAX6313UK28D2-T | ABYH |
| MAX6312UK27D4-T | ABUN | MAX6313UK44D1-T | ABVU | MAX6313UK36D2-T | ABXB | MAX6313UK28D3-T | ABYI |
| MAX6312UK26D1-T | ABUO | MAX6313UK44D2-T | ABVV | MAX6313UK36D3-T | ABXC | MAX6313UK28D4-T | ABYJ |
| MAX6312UK26D2-T | ABUP | MAX6313UK44D3-T | ABVW | MAX6313UK36D4-T | ABXD | MAX6313UK27D1-T | ABYK |
| MAX6312UK26D3-T | ABUQ | MAX6313UK44D4-T | ABVX | MAX6313UK35D1-T | ABXE | MAX6313UK27D2-T | ABYL |
| MAX6312UK26D4-T | ABUR | MAX6313UK43D1-T | ABVY | MAX6313UK35D2-T | ABXF | MAX6313UK27D3-T | ABYM |
| MAX6312UK25D1-T | ABUS | MAX6313UK43D2-T | ABVZ | MAX6313UK35D3-T | ABXG | MAX6313UK27D4-T | ABYN |
| MAX6312UK25D2-T | ABUT | MAX6313UK43D3-T | ABWA | MAX6313UK35D4-T | ABXH | MAX6313UK26D1-T | ABYO |
| MAX6312UK25D3-T | ABUU | MAX6313UK43D4-T | ABWB | MAX6313UK34D1-T | ABXI | MAX6313UK26D2-T | ABYP |
| MAX6312UK25D4-T | ABUV | MAX6313UK42D1-T | ABWC | MAX6313UK34D2-T | ABXJ | MAX6313UK26D3-T | ABYQ |
| MAX6313UK50D1-T | ABUW | MAX6313UK42D2-T | ABWD | MAX6313UK34D3-T | ABXK | MAX6313UK26D4-T | ABYR |
| MAX6313UK50D2-T | ABUX | MAX6313UK42D3-T | ABWE | MAX6313UK34D4-T | ABXL | MAX6313UK25D1-T | ABYS |
| MAX6313UK50D3-T | ABUY | MAX6313UK42D4-T | ABWF | MAX6313UK33D1-T | ABXM | MAX6313UK25D2-T | ABYT |
| MAX6313UK50D4-T | ABUZ | MAX6313UK41D1-T | ABWG | MAX6313UK33D2-T | ABXN | MAX6313UK25D3-T | ABYU |
| MAX6313UK49D1-T | ABVA | MAX6313UK41D2-T | ABWH | MAX6313UK33D3-T | ABXO | MAX6313UK25D4-T | ABYV |

# 5-Pin, Multiple-Input, Programmable Reset ICs

MAX6305–MAX6313

## Ordering Information (continued)

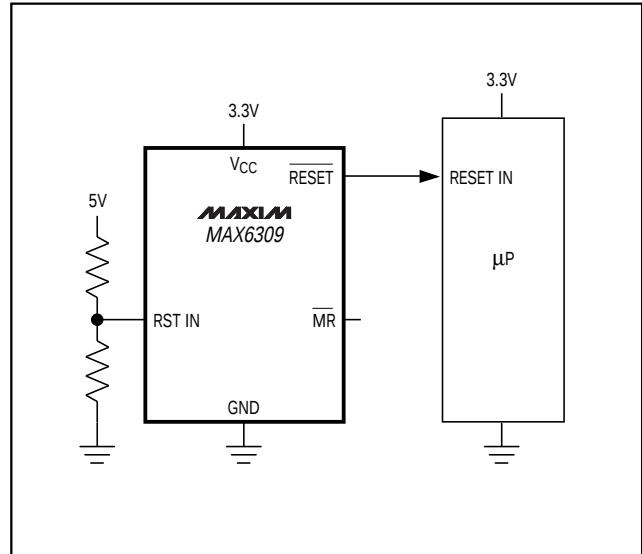
| PART†           | TEMP. RANGE  | PIN-PACKAGE |
|-----------------|--------------|-------------|
| MAX6308UK00D_-T | 0°C to +70°C | 5 SOT23-5   |
| MAX6309UK__D_-T | 0°C to +70°C | 5 SOT23-5   |
| MAX6310UK__D_-T | 0°C to +70°C | 5 SOT23-5   |
| MAX6311UK00D_-T | 0°C to +70°C | 5 SOT23-5   |
| MAX6312UK__D_-T | 0°C to +70°C | 5 SOT23-5   |
| MAX6313UK__D_-T | 0°C to +70°C | 5 SOT23-5   |

† The MAX6306/MAX6307/MAX6309/MAX6310/MAX6312/MAX6313 are available with factory-set  $V_{CC}$  reset thresholds from 2.5V to 5V, in 0.1V increments. Insert the desired nominal reset threshold (from Table 1) into the blanks following the letters UK. All parts also offer factory-programmed reset timeout periods. Insert the number corresponding to the desired nominal timeout period index following the "D" in the part number (D1 = 1ms min, D2 = 20ms min, D3 = 140ms min, and D4 = 1120ms min). Contact factory for availability and minimum order sizes.

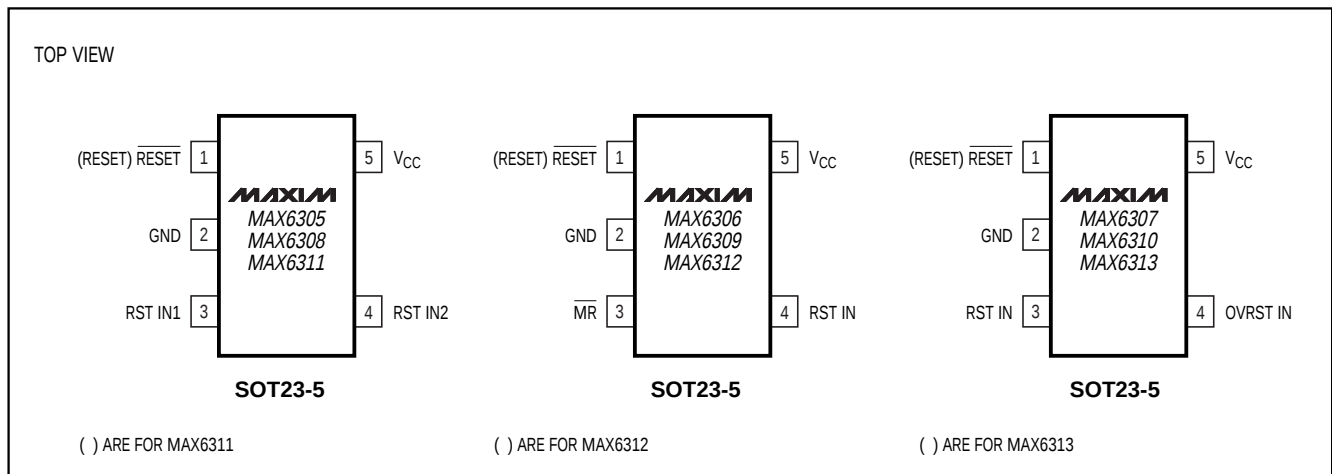
## Chip Information

TRANSISTOR COUNT: 800

## Typical Operating Circuit



## Pin Configurations



## MAX6305-MAX6313

## SOT51 EPS



# *5-Pin, Multiple-Input, Programmable Reset ICs*

## NOTES

MAX6305-MAX6313

# 5-Pin, Multiple-Input, Programmable Reset ICs

## NOTES

*Maxim cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Maxim product. No circuit patent licenses are implied. Maxim reserves the right to change the circuitry and specifications without notice at any time.*

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