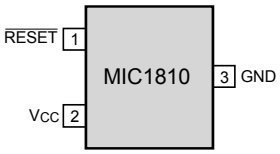
Pin Configuration



3-Lead SOT-23

Pin Description

Pin Number	Pin Name	Pin Function
1	/RESET	/RESET goes low if V_{CC} falls below the reset threshold and remains asserted for one reset timeout period (100ms min) after V_{CC} exceeds the reset threshold.
2	VCC	Power supply input.
3	GND	IC ground pin

Absolute Maximum Ratings(Note 1)

Terminal Voltage (V_{CC}) ..... –0.3V to +6V
Input Current (V_{CC}) 20mA
Output Current, /RESET 20mA
Rate of Rise (V_{CC}) 100V/µs
Lead Temperature (soldering, 10 sec.) ..... 300°C
Storage Temperature (T_S) ..... –65°C to 150°C
ESD Rating, **Note 3** 3kV

Operating Ratings(Note 2)

Operating Temperature Range
MIC1810-5U ..... –40°C to +85°C
MIC1810-10U ..... –40°C to +85°C
MIC1810-15U ..... –40°C to +85°C
Power Dissipation (T_A = +70°C) 320mW

Electrical Characteristics

For typical values V_{CC} = 5V, T_A = 25°C; **bold** values indicate –40°C ≤ T_A ≤ +85°C; unless noted

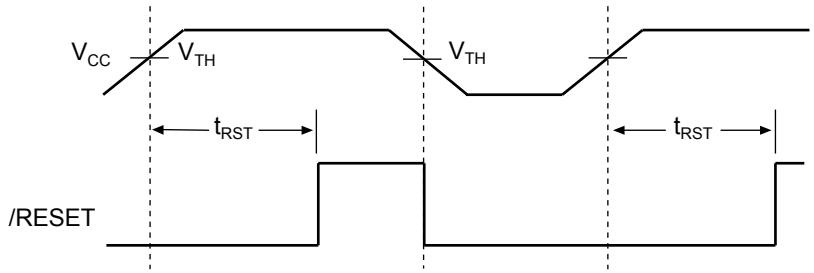
Symbol	Parameter	Condition	Min	Typ	Max	Units
	Operating Voltage Range	T_A = –40°C to +85°C	**1**		**5.5**	V
I_{CC}	Supply Current			5	**20**	**µA**
V_{TH}	Reset Voltage Threshold	MIC1810-5	**4.50**	4.62	**4.75**	V
		MIC1810-10	**4.25**	4.37	**4.50**	**V**
		MIC1810-15	**4.00**	4.12	**4.24**	V
t_{RST}	Reset Timeout Period		**100**	150	**250**	ms
V_{OH}	/RESET Output Voltage, High	I_{SOURCE} = 800µA	**V_{CC}–1.5**			**V**
V_{OL}	/RESET Output Voltage, Low	V_{CC} = V_{TH} min., I_{SINK} = 10mA			**0.4**	**V**
		V_{CC} ≥ 1V, I_{SINK} = 50µA			**0.3**	V

Note 1. Exceeding the absolute maximum rating may damage the device.

Note 2. The device is not guaranteed to function outside its operating rating.

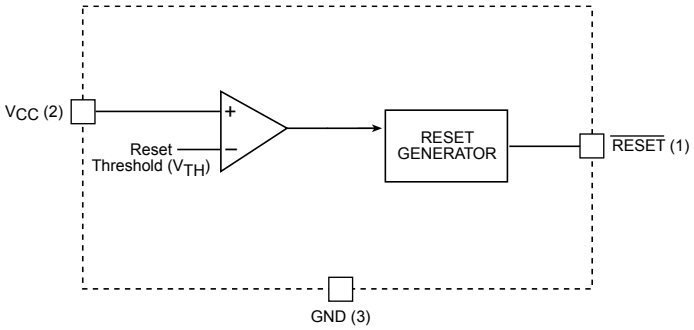
Note 3. Devices are ESD sensitive. Handling precautions recommended. Human body model, 1.5k in series with 100pF.

Timing Diagram



Reset Timing Diagram

Functional Diagram



Applications Information

Microprocessor Reset

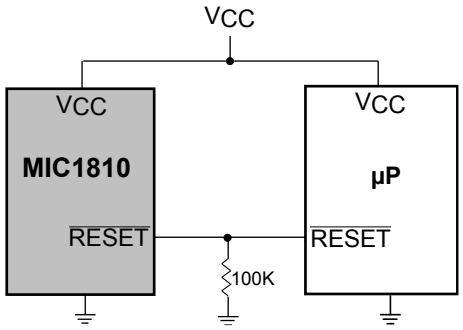
The /RESET pin is asserted whenever V_{CC} falls below the reset threshold voltage. The reset pin remains asserted for a period of t_{RST} after V_{CC} has risen above the reset threshold voltage. The reset function ensures the microprocessor is properly reset and powers up into a known condition after a power failure. /RESET will remain valid with V_{CC} as low as 1V.

V_{CC} Transients

The MIC1810 is relatively immune to negative-going V_{CC} glitches below the reset threshold. Typically, a negative-going transient 125mV below the reset threshold with a duration of 20µs or less will not cause an unwanted reset.

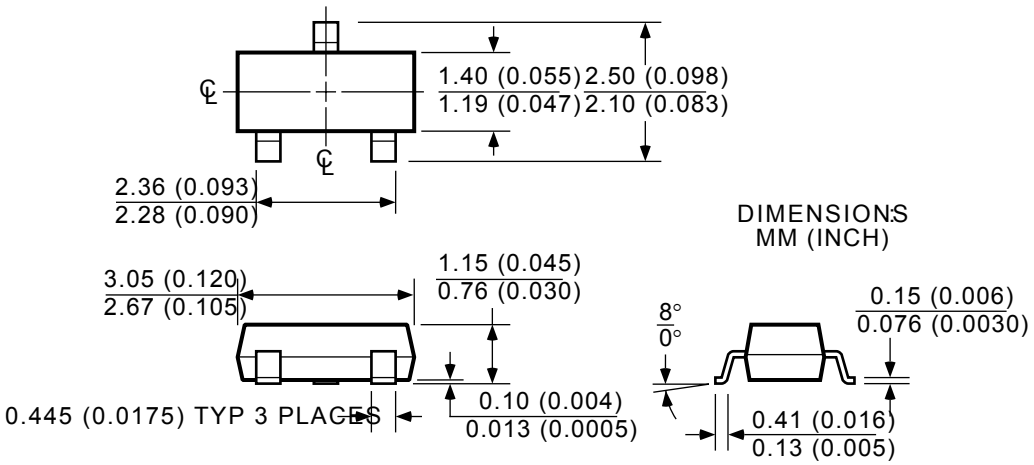
/RESET Valid at Low Voltage

A resistor can be added from the /RESET pin-to-ground to ensure the /RESET output remains low with V_{CC} down to 0V. A 100kΩ resistor connected from /RESET-to-ground is recommended. The resistor should be large enough not to load the /RESET output and small enough to pull-down any stray leakage currents. See Figure below.



/RESET Valid to V_{CC} = 0V

Package Information



3-Pin SOT-23 Small Outline Transistor

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