PIN DESCRIPTION

Pin No.	Symbol	Description
1	GND	Ground
2	$\overline{\text{RESET}}$ (MAX809)	$\overline{\text{RESET}}$ output remains low while V_{CC} is below the reset voltage threshold, and for a reset timeout period after V_{CC} rises above reset threshold
2	RESET (MAX810)	RESET output remains high while V_{CC} is below the reset voltage threshold, and for a reset timeout period after V_{CC} rises above reset threshold
3	V_{CC}	Supply Voltage (Typ)

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Power Supply Voltage (V_{CC} to GND)	V_{CC}	−0.3 to 6.0	V
RESET Output Voltage (CMOS)		−0.3 to (V_{CC} + 0.3)	V
Input Current, V_{CC}		20	mA

ELECTRICAL CHARACTERISTICS T_A = −40 C to +105 C unless otherwise noted. Typical values are at T_A = +25 C. (Note 3)

Characteristic	Symbol	Min	Typ	Max	Unit
V_{CC} Range					V
T_A = 0 C to +70 C		1.0	–	5.5	
T_A = −40 C to +105 C (Note 4)		1.2	–	5.5	
Supply Current	I_{CC}				μA
V_{CC} = 3.3 V					
T_A = −40 C to +85 C		–	0.5	1.2	
T_A = 85 C to +105 C (Note 5)		–	–	2.0	
V_{CC} = 5.5 V					
T_A = −40 C to +85 C		–	0.8	1.8	
T_A = 85 C to +105 C (Note 5)		–	–	2.5	
Reset Threshold (V_{in} Decreasing) (Note 6)	V_{TH}				V
MAX809SN490					
T_A = +25 C		4.83	4.9	4.97	
T_A = −40 C to +85 C		4.78	–	5.02	
T_A = +85 C to +105 C (Note 5)		4.66	–	5.14	
MAX8xxLTR, MAX8xxSQ463					
T_A = +25 C		4.56	4.63	4.70	
T_A = −40 C to +85 C		4.50	–	4.75	
T_A = +85 C to +105 C (Note 5)		4.40	–	4.86	
MAX809HTR					
T_A = +25 C		4.48	4.55	4.62	
T_A = −40 C to +85 C		4.43		4.67	
T_A = +85 C to +105 C (Note 5)		4.32		4.78	
MAX8xxMTR, MAX8xxSQ438					
T_A = +25 C		4.31	4.38	4.45	
T_A = −40 C to +85 C		4.27		4.49	
T_A = +85 C to +105 C (Note 5)		4.16		4.60	
MAX809JTR, MAX8xxSQ400					
T_A = +25 C		3.94	4.00	4.06	
T_A = −40 C to +85 C		3.90	–	4.10	
T_A = +85 C to +105 C (Note 5)		3.80	–	4.20	
MAX8xxTTR, MAX809SQ308					
T_A = +25 C		3.04	3.08	3.11	
T_A = −40 C to +85 C		3.00	–	3.16	
T_A = +85 C to +105 C (Note 5)		2.92	–	3.24	
MAX8xxSTR, MAX8xxSQ293					
T_A = +25 C		2.89	2.93	2.96	
T_A = −40 C to +85 C		2.85	–	3.00	
T_A = +85 C to +105 C (Note 5)		2.78	–	3.08	
MAX8xxRTR, MAX8xxSQ263					
T_A = +25 C		2.59	2.63	2.66	
T_A = −40 C to +85 C		2.56	–	2.70	
T_A = +85 C to +105 C (Note 5)		2.49	–	2.77	
MAX809SN232, MAX809SQ232					
T_A = +25 C		2.28	2.32	2.35	
T_A = −40 C to +85 C		2.25	–	2.38	
T_A = +85 C to +105 C (Note 5)		2.21	–	2.45	
MAX809SN160					
T_A = +25 C		1.58	1.60	1.62	
T_A = −40 C to +85 C		1.56	–	1.64	
T_A = +85 C to +105 C (Note 5)		1.52	–	1.68	
MAX809SN120, MAX8xxSQ120					
T_A = +25 C		1.18	1.20	1.22	
T_A = −40 C to +85 C		1.17	–	1.23	
T_A = +85 C to +105 C (Note 5)		1.14	–	1.26	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

3. Production testing done at T_A = 25 C, over temperature limits guaranteed by design.
4. For NCV automotive devices, this temperature range is T_A = −40 C to +125 C.
5. For NCV automotive devices, this temperature range is T_A = +85 C to +125 C.
6. Contact your **onsemi** sales representative for other threshold voltage options.

ELECTRICAL CHARACTERISTICS (continued) T_A = −40 C to +105 C unless otherwise noted. Typical values are at T_A = +25 C. (Note 7)

Characteristic	Symbol	Min	Typ	Max	Unit
Detector Voltage Threshold Temperature Coefficient		−	30	−	ppm/ C
V_{CC} to Reset Delay V_{CC} = V_{TH} to (V_{TH} − 100 mV)		−	10	−	μsec
Reset Active TimeOut Period (Note 8) MAX8xxSN(Q)293D1 MAX8xxSN(Q)293D2 MAX8xxSN(Q)293D3 MAX8xxSN(Q)293	t_{RP}	 1.0 20 100 140	 − − − −	 3.3 66 330 460	msec
$\overline{\text{RESET}}$ Output Voltage Low (No Load) (MAX809) V_{CC} = V_{TH} − 0.2 V 1.6 V ≤ V_{TH} ≤ 2.0 V, I_{SINK} = 0.5 mA 2.1 V ≤ V_{TH} ≤ 4.0 V, I_{SINK} = 1.2 mA 4.1 V ≤ V_{TH} ≤ 4.9 V, I_{SINK} = 3.2 mA	V_{OL}	−	−	0.3	V
$\overline{\text{RESET}}$ Output Voltage High (No Load) (MAX809) V_{CC} = V_{TH} + 0.2 V 1.6 V ≤ V_{TH} ≤ 2.4 V, I_{SOURCE} = 200 μA 2.5 V ≤ V_{TH} ≤ 4.9 V, I_{SOURCE} = 500 μA	V_{OH}	0.8 V_{CC}	−	−	V
RESET Output Voltage High (No Load) (MAX810) V_{CC} = V_{TH} − 0.2 V 1.6 V ≤ V_{TH} ≤ 2.4 V, I_{SOURCE} = 200 μA 2.5 V ≤ V_{TH} ≤ 4.9 V, I_{SOURCE} = 500 μA	V_{OH}	0.8 V_{CC}	−	−	V
RESET Output Voltage Low (No Load) (MAX810) V_{CC} = V_{TH} + 0.2 V 1.6 V ≤ V_{TH} ≤ 2.0 V, I_{SINK} = 0.5 mA 2.1 V ≤ V_{TH} ≤ 4.0 V, I_{SINK} = 1.2 mA 4.1 V ≤ V_{TH} ≤ 4.9 V, I_{SINK} = 3.2 mA	V_{OL}	−	−	0.3	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

7. Production testing done at T_A = 25 C, over temperature limits guaranteed by design.
8. Contact your **onsemi** sales representative for timeout options availability for other threshold voltage options.

Detail Operation Description

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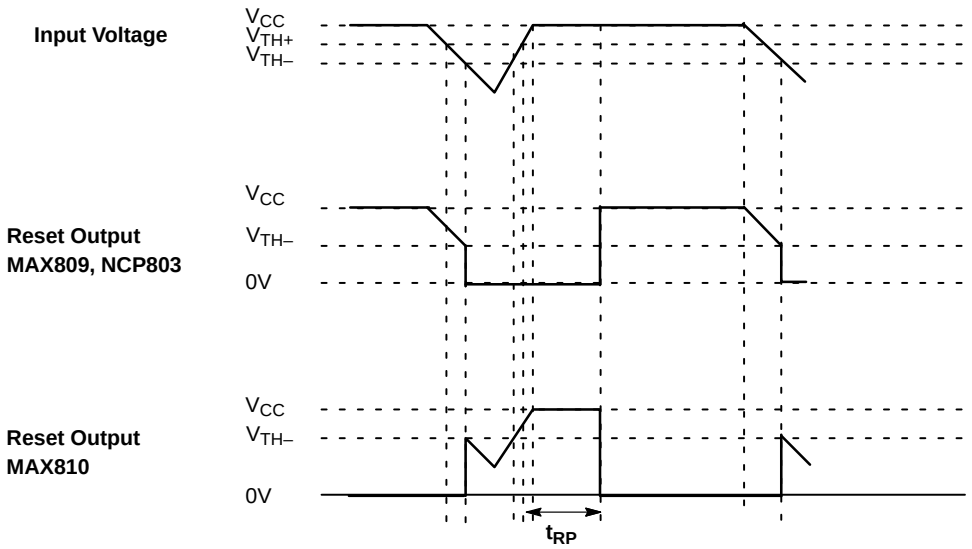

Figure 15. Timing Waveforms

APPLICATIONS INFORMATION

V_{CC} Transient Rejection

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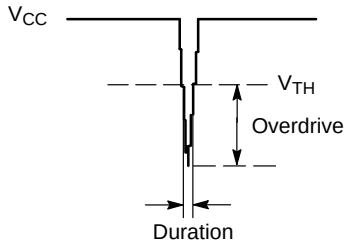


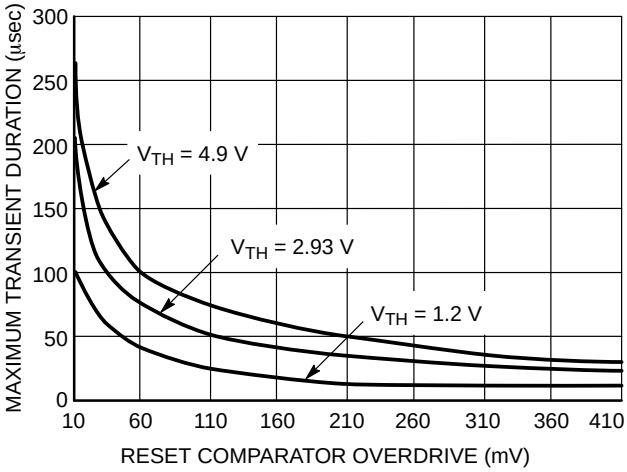


Figure 16. Maximum Transient Duration vs. Overdrive for Glitch Rejection at 25 C

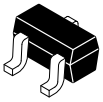
$\overline{\text{RESET}}$ Signal Integrity During Power−Down

ORDERING, MARKING AND THRESHOLD INFORMATION

Part Number	V_{TH}* (V)	Timeout (ms)	Marking	Package	Shipping†
MAX809STRG	2.93	140−460	SPT ACE	SOT23−3 (Pb−Free)	3000 / Tape & Reel

ORDERING, MARKING AND THRESHOLD INFORMATION

Part Number	V_{TH}* (V)	Timeout* (ms)	Description	Marking	Package	Shipping†
DISCONTINUED (Note 9)						
MAX809TTRG	3.08	140−460	Push−Pull $\overline{\text{RESET}}$	SPU	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCV809SN293D1T1G*	2.93					

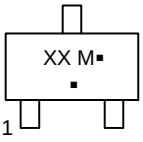


SCALE 4:1

SC−70 (SOT−323)
CASE 419
ISSUE R

DATE 11 OCT 2022

GENERIC
MARKING DIAGRAM



XX = Specific Device Code
M = Date Code
▪ = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−

STYLE 1:
CANCELLED

STYLE 2:
PIN 1. ANODE
2. N.C.
3. CATHODE

STYLE 3:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 5:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 6:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

STYLE 7:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 8:
PIN 1. GATE
2. SOURCE
3. DRAIN

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. CATHODE-ANODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. ANODE-CATHODE

STYLE 11:
PIN 1. CATHODE
2. CATHODE
3. CATHODE