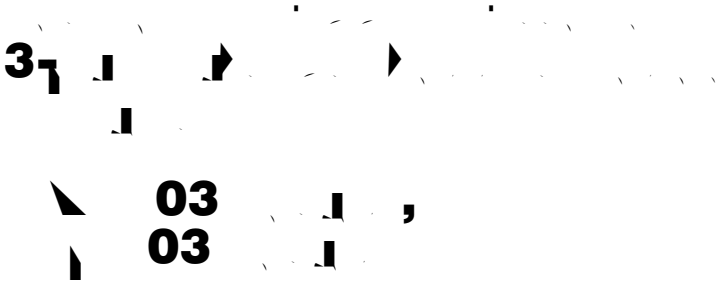
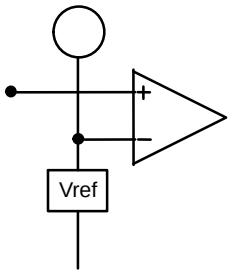


The MAX803/NCP803 is a cost effective system supervisor circuit designed to monitor V_{CC} in digital systems and provide a reset signal to the host processor when necessary. No external components are required.

The reset output is driven active within 10 μsec of V_{CC} falling through the reset voltage threshold. Reset is maintained active for a timeout period which is trimmed by the factory after V_{CC} rises above the reset threshold. The MAX


+
−
Vref

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

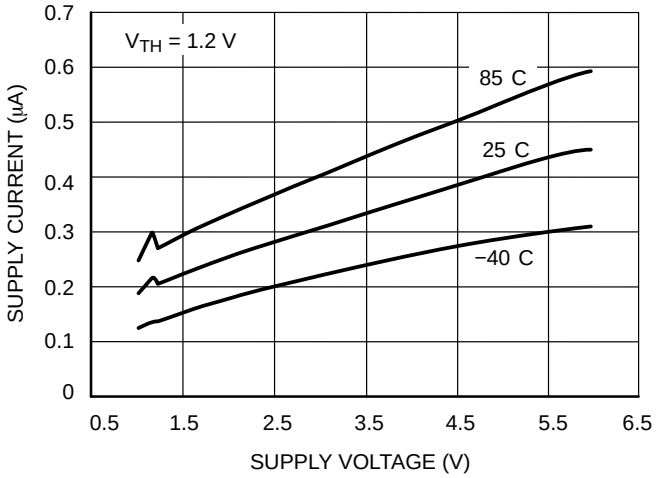
V_{CC} Range T_A = 0 C to +70 C T_A = −40 C to +105 C (Note 4)		 1.0 1.2	 − −	 5.5 5.5	V
Supply Current V_{CC} = 3.3 V T_A = −40 C to +85 C T_A = 85 C to +105 C (Note 5) V_{CC} = 5.5 V T_A = −40 C to +85 C T_A = 85 C to +105 C (Note 5)	I_{CC}	 − − − −	 0.5 − 0.8 −	 1.2 2.0 1.8 2.5	μA
Reset Threshold (V_{in} Decreasing) (Note 6) MAX803SQ463/NCP803SN463 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)	V_{TH}	 4.56 4.51 4.40	 4.63 − −	 4.70 4.75 4.88	V
MAX803SQ438/NCP803SN438 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 4.31 4.27 4.16	 4.38	 4.45 4.49 4.60	
NCP803SN400 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 3.94 3.90 3.80	 4.00	 4.06 4.10 4.20	
MAX803SQ308/NCP803SN308 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 3.04 3.00 2.92	 3.08 − −	 3.11 3.15 3.23	
MAX803SQ293/NCP803SN293 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 2.89 2.85 2.78	 2.93 − −	 2.96 3.00 3.08	
NCP803SN263 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 2.59 2.55 2.50	 2.63 − −	 2.66 2.70 2.76	
NCP803SN232 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 2.29 2.26 2.20	 2.32 − −	 2.35 2.38 2.45	
NCP803SN160 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 1.58 1.56 1.52	 1.60 − −	 1.62 1.64 1.68	
MAX803SN120, MAX803SQ120 T_A = +25 C T_A = −40 C to +85 C T_A = +85 C to +105 C (Note 5)		 1.18 1.17 1.14	 1.20 − −	 1.22 1.23 1.26	
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 6) MAX803SN(Q)293D1 MAX803SN(Q)293D2/MAX803SN(Q)308D2 MAX803SN(Q)293D3 MAX803SN(Q)293	t_{RP}	 1.0 20 100 140	 − − − −	 3.3 66 330 460	msec

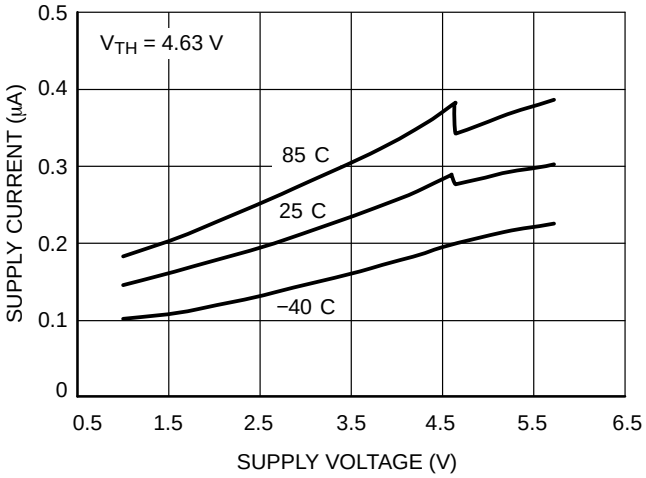
T_A = −40 C to +105 C unless otherwise noted. Typical values are at T_A = +25 C. (Note 3)

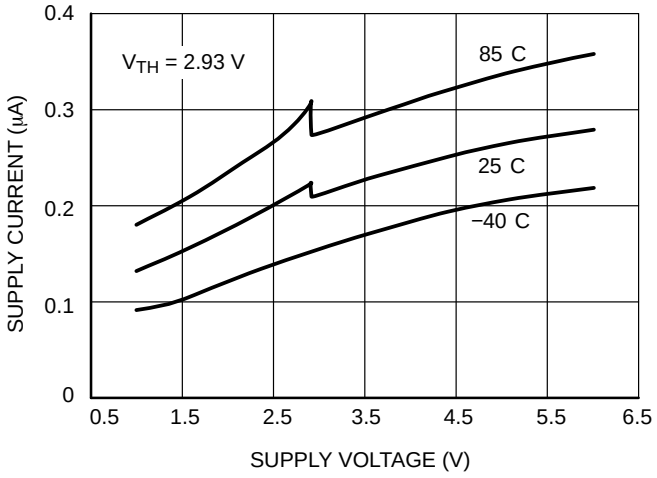
$\overline{\text{RESET}}$ Output Voltage Low $V_{CC} = V_{TH} - 0.2$ V 1.6 V ≤ V_{TH} ≤ 2.0 V, I_{SINK} = 0.5 mA 2.1 V ≤ V_{TH} ≤ 4.0 V, I_{SINK} = 1.2 mA 4.1 V ≤ V_{TH} ≤ 4.9 V, I_{SINK} = 3.2 mA	V_{OL}	−	−	0.3	V
$\overline{\text{RESET}}$ Leakage Current $V_{CC} > V_{TH}$, $\overline{\text{RESET}}$ De−asserted	I_{LEAK}	−	−	1	μA

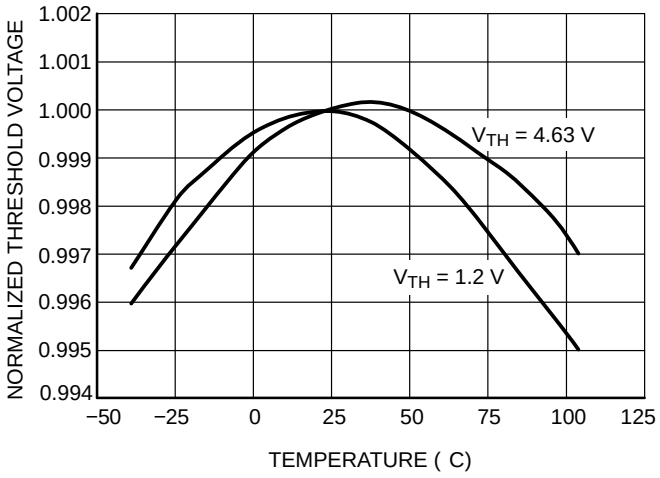
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

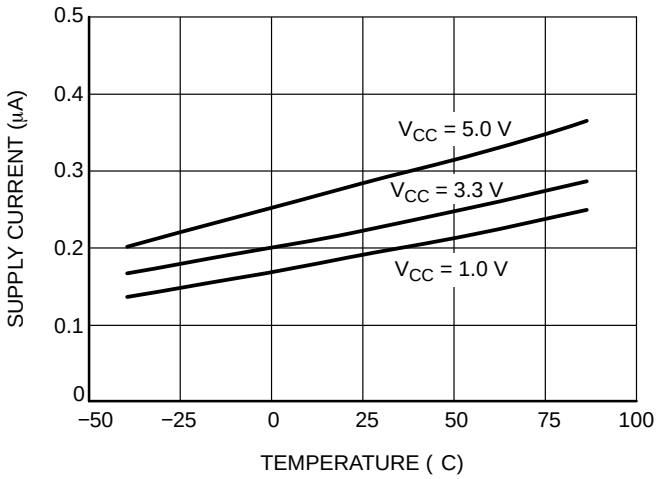
3. Production testing done at T_A = 25 C, over temperature limits guaranteed by design.
4. For NCV automotive devices, this temperature range is T_A = −40 C to +125 C.
5. For NCV automotive devices, this temperature range is T_A = +85 C to +125 C.
6. Contact your sales representative for other threshold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

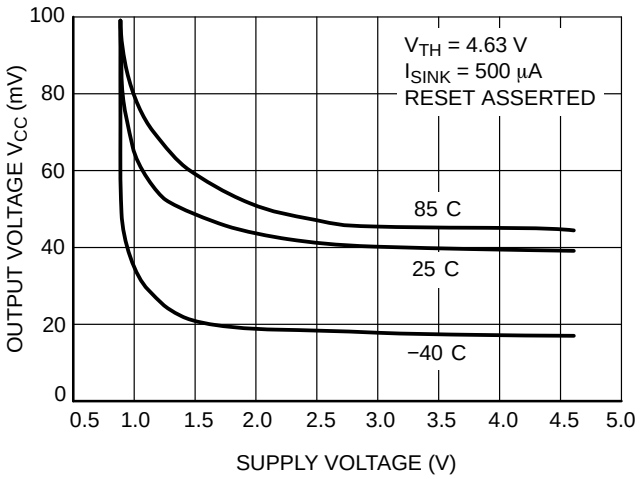

V_{TH} = 1.2 V
85 C
25 C
−40 C
SUPPLY CURRENT (μA)
SUPPLY VOLTAGE (V)

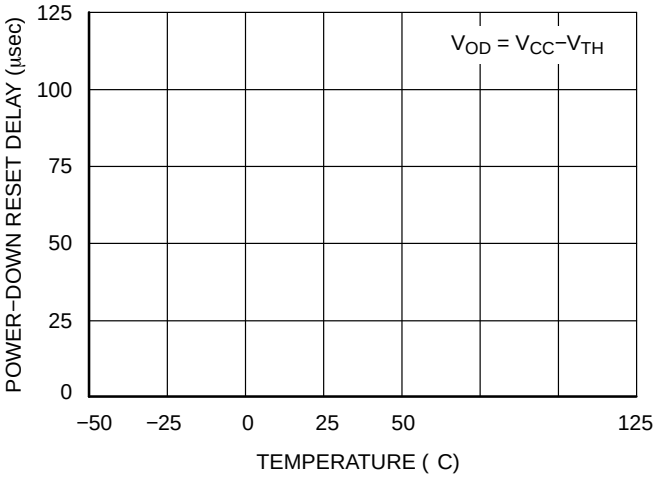

V_{TH} = 4.63 V
85 C
25 C
−40 C
SUPPLY CURRENT (μA)
SUPPLY VOLTAGE (V)


V_{TH} = 2.93 V
85 C
25 C
−40 C
SUPPLY CURRENT (μA)
SUPPLY VOLTAGE (V)

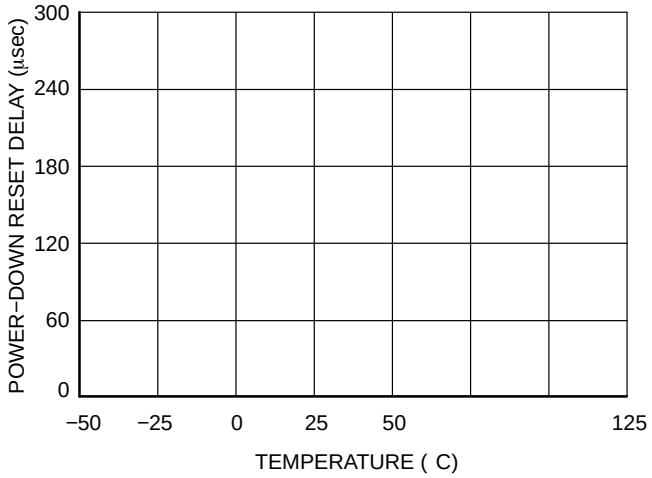

V_{TH} = 4.63 V
V_{TH} = 1.2 V
NORMALIZED THRESHOLD VOLTAGE
TEMPERATURE (C)


V_{CC} = 5.0 V
V_{CC} = 3.3 V
V_{CC} = 1.0 V
SUPPLY CURRENT (μA)
TEMPERATURE (C)

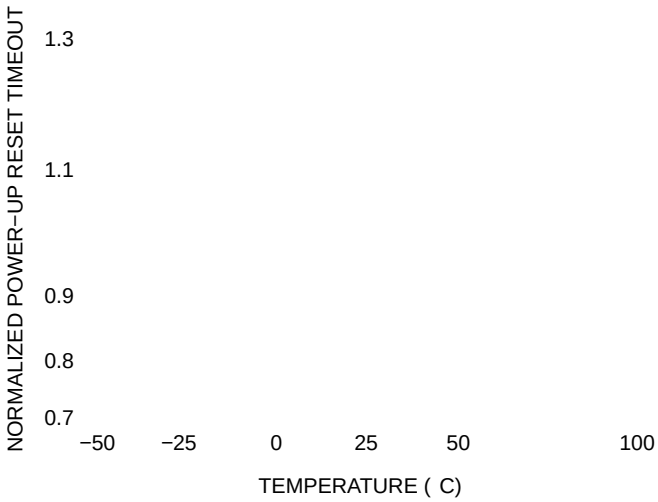

V_{TH} = 4.63 V
I_{SINK} = 500 μA
RESET ASSERTED
85 C
25 C
−40 C
OUTPUT VOLTAGE V_{CC} (mV)
SUPPLY VOLTAGE (V)


POWER−DOWN RESET DELAY (μsec)
125
100
75
50
25
0
$V_{OD} = V_{CC} - V_{TH}$
−50
−25
0
25
50
125
TEMPERATURE (C)

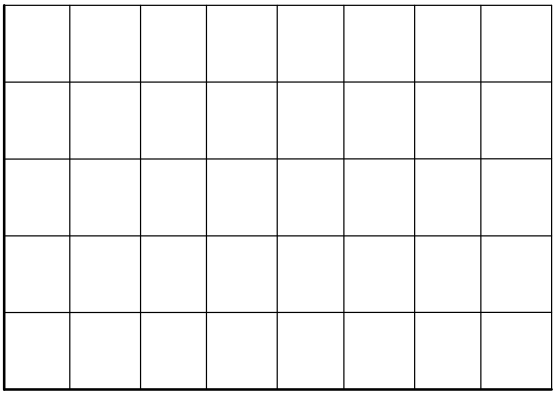
–


POWER−DOWN RESET DELAY (μsec)
300
240
180
120
60
0
−50
−25
0
25
50
125
TEMPERATURE (C)

–


NORMALIZED POWER−UP RESET TIMEOUT
1.3
1.1
0.9
0.8
0.7
−50
−25
0
25
50
100
TEMPERATURE (C)

The MAX803/NCP803 series provides accurate V_{CC} monitoring and reset timing during power up, power down, and brownout/sag conditions, and rejects negative going transients (glitches) on the power supply line. Figure 13 shows the maximum transient duration vs. maximum negative excursion (overdrive) for glitch rejection. Any combination of duration and overdrive which lies under the curve will not generate a reset signal. Combinations above the curve are detected as a brownout or power down. Typically, transient that goes 100 mV below the reset threshold and lasts 5.0 μs or less will not cause a reset pulse. Transient immunity can be improved by adding a capacitor in close proximity to the V_{CC} pin of the MAX803.



						†
NCV803SQ308D2T1G*	3.08	20−66	Open Drain $\overline{\text{RESET}}$	CY	SC70−3 (Pb−Free)	3000 / Tape & Reel

(Note 7)

MAX803SQ120T1G	1.20	140−460	Open Drain $\overline{\text{RESET}}$	ZV	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ263T1G	2.63	140−460	Open Drain $\overline{\text{RESET}}$	SX	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ293D1T1G	2.93	1−3.3	Open Drain $\overline{\text{RESET}}$	YA	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ293D2T1G	2.93	20−66	Open Drain $\overline{\text{RESET}}$	YB	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ293D3T1G	2.93	100−330	Open Drain $\overline{\text{RESET}}$	YC	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ293T1G	2.93	140−460	Open Drain $\overline{\text{RESET}}$	ZW	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ308D2T1G	3.08	20−66	Open Drain $\overline{\text{RESET}}$	SY	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ308T1G	3.08	140−460	Open Drain $\overline{\text{RESET}}$	ZX	SC70−3 (Pb−Free)	3000 / Tape & Reel
MAX803SQ438T1G	4.38	140−460	Open Drain $\overline{\text{RESET}}$	ZY	SC70−3 (Pb−Free)	3000 / Tape & Reel
NCV803SQ308T1G*	3.08	140−460	Open Drain $\overline{\text{RESET}}$	ZA	SC70−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN120T1G	1.20	140−460	Open Drain $\overline{\text{RESET}}$	SSW	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN160T1G	1.60	140−460	Open Drain $\overline{\text{RESET}}$	SCQ	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN232T1G	2.32	140−460	Open Drain $\overline{\text{RESET}}$	SQR	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN263T1G	2.63	140−460	Open Drain $\overline{\text{RESET}}$	SQC	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN293D1T1G	2.93	1−3.3	Open Drain $\overline{\text{RESET}}$	SSX	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN293D2T1G	2.93	20−66	Open Drain $\overline{\text{RESET}}$	SSY	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN293D3T1G	2.93	100−330	Open Drain $\overline{\text{RESET}}$	SSZ	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN293T1G	2.93	140−460	Open Drain $\overline{\text{RESET}}$	SQD	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN293T3G	2.93	140−460	Open Drain $\overline{\text{RESET}}$	SQD	SOT23−3 (Pb−Free)	10000 / Tape & Reel
NCP803SN308T1G	3.08	140−460	Open Drain $\overline{\text{RESET}}$	SQE	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN463T1G	4.63	140−460	Open Drain $\overline{\text{RESET}}$	SQG	SOT23−3 (Pb−Free)	3000 / Tape & Reel
NCP803SN400T1G	4.00	140−460	Open Drain $\overline{\text{RESET}}$	RAD	SOT23−3 (Pb−Free)	3000 / Tape & Reel

CASE 318
ISSUE AT

DATE 01 MAR 2023

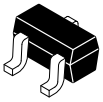
STYLE 6:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

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

STYLE 8:
PIN 1. ANODE
2. NO CONNECTION
3. CATHODE

STYLE 9:
PIN 1. ANODE
2. ANODE

STYLE 22:
PIN 1. RETURN
2. OUTPUT
3. INPUT

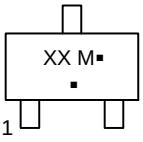


SCALE 4:1

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