

Features

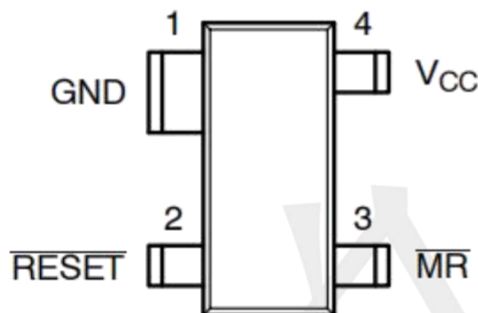
- High Accurate $\pm 5\%$
- Precision VCC Monitoring of +2.5V, +3V, +3.3V and +5V Supplies
- Power Supply Transient Immunity
- Guaranteed Reset Valid to $V_{CC} = +1V$
- Fully Specified Over Temperature
- 6 μA Supply Current
- Available in One Output Configuration: Active LOW Reset

Applications

- Battery-operated systems and controllers
- Embedded Control Systems
- Critical μP and μC power monitoring
- Portable / Battery powered equipment
- Automotive

Pin Definition

SOT-143



Ordering Information

TPAX811MS4

PACKAGE TYPE
S4: SOT-143

RESET VOLTAGE:

L=4.63V

M=4.38V

J=4.00V

T=3.08V

S=2.93V

R=2.63V

Z=2.32V

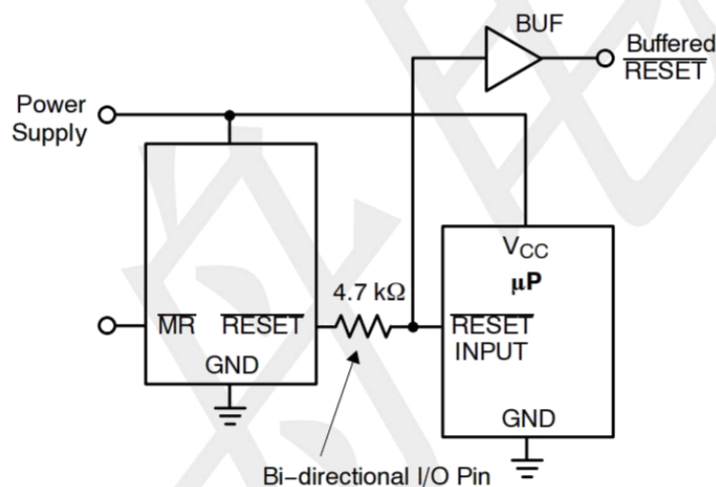
PIN CONFIGURATION

PIN	NAME	FUNCTION
1	GND	Ground
2	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$ Output remains low while VCC is below the reset threshold, and for at least 140ms after VCC rises above the reset threshold.
3	$\overline{\text{MR}}$	Manual Reset Input. A logic LOW on $\overline{\text{MR}}$ asserts $\overline{\text{RESET}}$. $\overline{\text{RESET}}$ remains active as long as $\overline{\text{MR}}$ is LOW and for 140 ms after $\overline{\text{MR}}$ returns HIGH. The active low input has an internal 20 k Ω pull-up resistor. The input should be left open if not used.
4	VCC	+5V, +3.3V, +3V or +2.5V Supply Voltage .

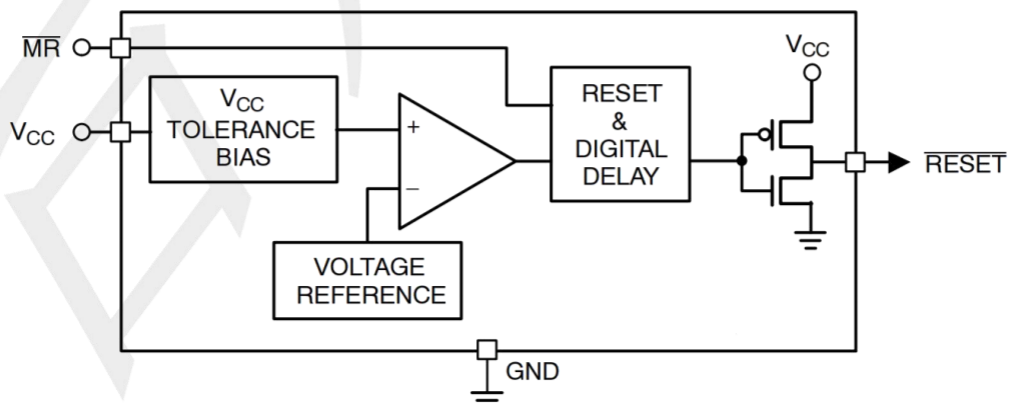
Absolute Maximum Ratings

Symbol	Parameter	Value	UNIT
VCC	Any pin with respect to ground	-0.3 to +6.0	V
ICC	Input Current, VCC	20	mA
IO	Output Current, RESET	20	mA
	Rate of Rise, VCC	100	V/ μ s
PD	Continuous Power Dissipation Derate 4mW/°C above 70°C	320	mW
TA	Operating Temperature Range	-40 to +85	°C
TSTG	Storage Temperature Range	-65 to +105	°C
R _{θJC}	Thermal Resistance from Junction to Case	110	°C/W
R _{θJA}	Thermal Resistance from Junction to Ambient	250	°C/W

TYPICAL APPLICATION CIRCUIT



FUNCTIONAL BLOCK DIAGRAM



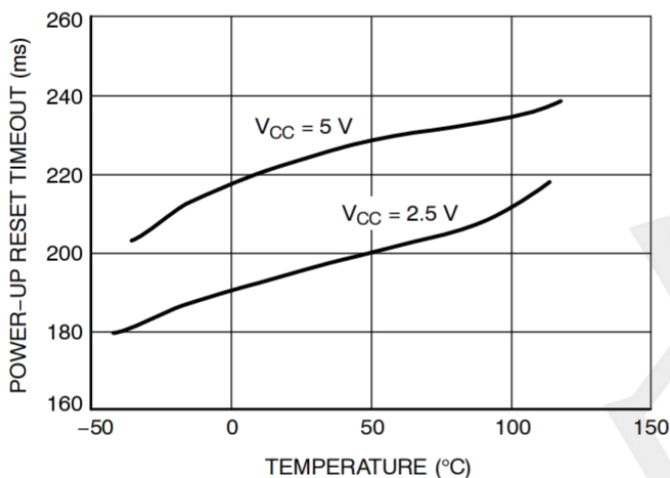
Electrical Characteristics

(VCC=5V for L/M/J versions, VCC=3.3V for T/S versions, VCC=3V for R version, and VCC=2.5V for Z version, TA=-40°C to +85°C, unless otherwise noted. Typical values are at TA=+25°C.)

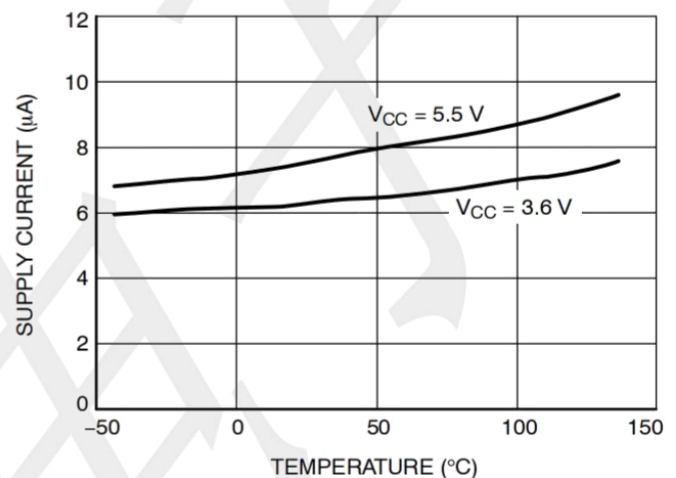
Symbol	Parameter	Conditions	MIN	Typ	MAX	UNIT
VCC	Supply Voltage Range	TA=0°C to +70°C	1.0	--	5.5	V
		TA=-40°C to +85°C	1.2	--	5.5	
ICC	Supply Current		--	6.0	--	μA
VTH	Reset Threshold	L Version TA=+25°C	4.56	4.63	4.70	V
		L Version TA=-40°C to +85°C	4.50	--	4.75	
		M Version TA=+25°C	4.31	4.38	4.45	
		M Version TA=-40°C to +85°C	4.25	--	4.50	
		J Version TA=+25°C	3.93	4.00	4.06	
		J Version TA=-40°C to +85°C	3.89	--	4.10	
		T Version TA=+25°C	3.04	3.08	3.11	
		T Version TA=-40°C to +85°C	3.00	--	3.15	
		S Version TA=+25°C	2.89	2.93	2.96	
		S Version TA=-40°C to +85°C	2.85	--	3.00	
		R Version TA=+25°C	2.59	2.63	2.66	
		R Version TA=-40°C to +85°C	2.55	--	2.70	
		Z Version TA=+25°C	2.28	2.32	2.35	
		Z Version TA=-40°C to +85°C	2.25	--	2.38	
	Reset Threshold Tempco		--	150	--	ppm/°C
	VCC to Reset Delay	VCC=VTH to (VTH-100mV)	--	20	--	μS
TRP	Reset Active Timeout Period	TA=-40°C to +85°C	140	240	450	mS
VOL	RESET Output Voltage Low	VCC=VTH min, ISINK=1.2mA, T_/S_/R_/Z_	--	--	0.3	V
		VCC=VTH min, ISINK=3.2mA, T_/S_/R_/Z_	--	--	0.4	
		VCC>1.0V, ISINK=50μA	--	--	0.3	
tMR	MR Minimum Pulse Width		--	10	1	μS
VIH	MR Input Threshold	VCC > VTH (MAX), L/M/J	2.3	--	--	V
VIL			--	--	0.8	
VIH		VCC > VTH (MAX), T/S/R/Z	0.7V _{CC}	--	--	
VIL			--	--	0.25V _{CC}	
	MR Pull-up Resistance		10	20	75	KΩ

Typical Operating Characteristics

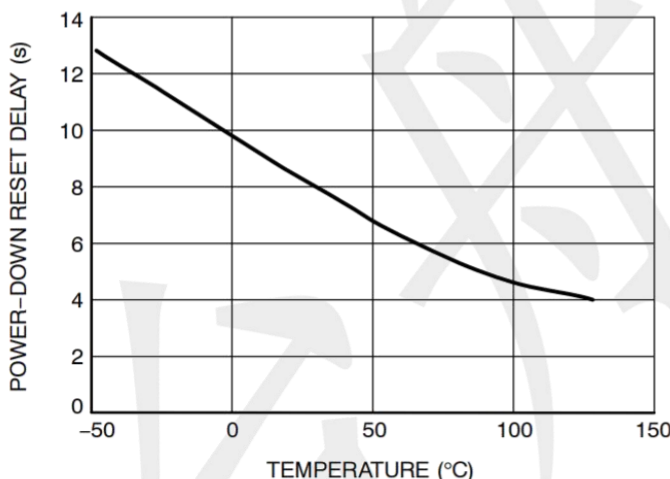
(VCC = Full range, TA = -40°C to +85°C unless otherwise noted. Typical values at TA = +25°C and VCC = 5 V for the L/M/J versions, VCC = 3.3 V for the T/S versions, VCC = 3 V for the R version and VCC = 2.5 V for the Z version.)



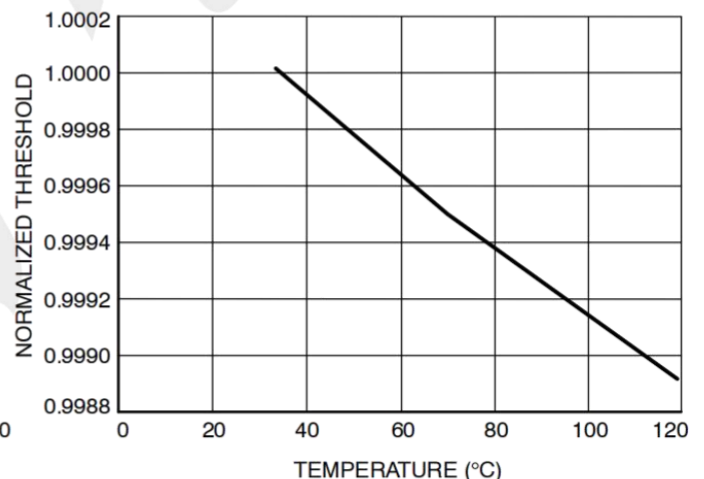
Power-Up Reset Timeout vs. Temperature



Supply Current vs. Temperature (No Load, R/S/T/Z)



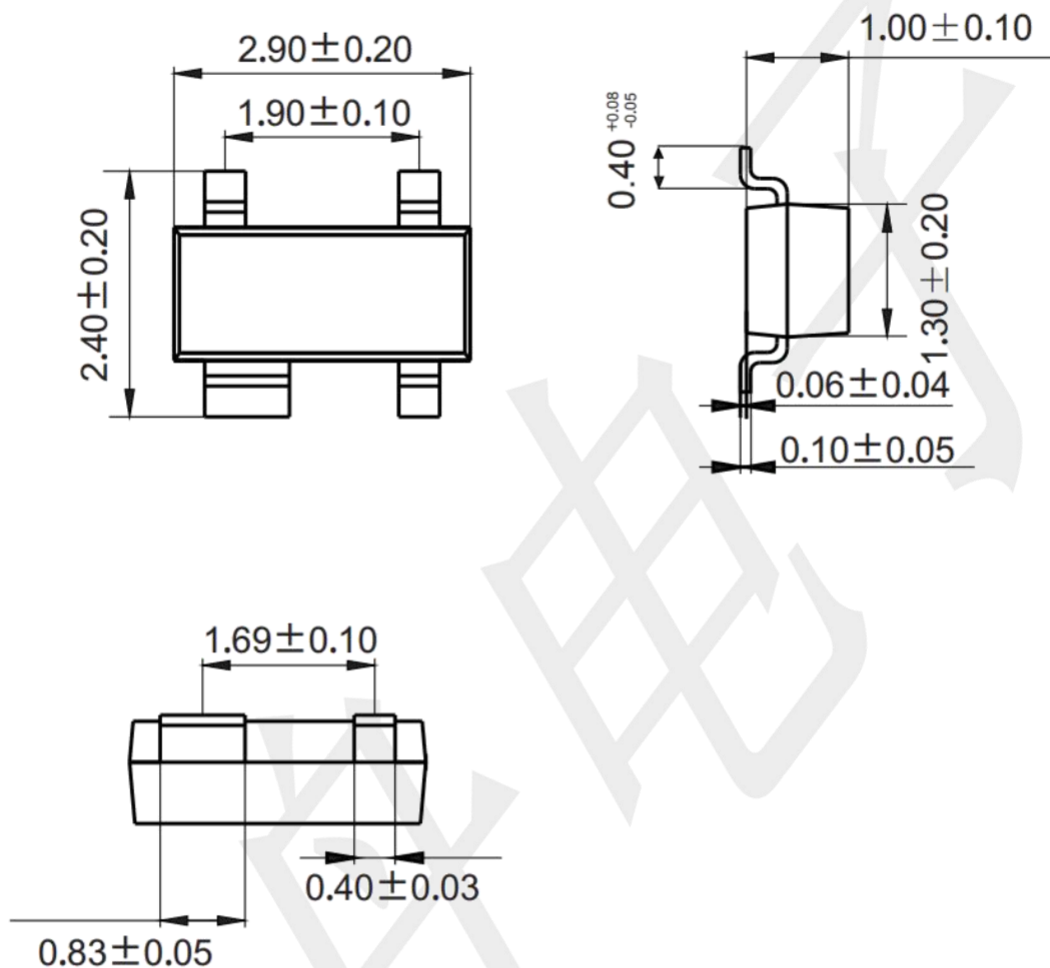
Power-Down Reset Delay vs. Temperature S/T/Z



Normalized Reset Threshold vs. Temperature

Package Outline Dimensions (unit: mm)

SOT-143



Mounting Pad Layout (unit: mm)

