

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

Product data sheet

## 产品简介

MAX811 系列是一款具有电压检测功能的微处理器复位芯片,它带有使能控制端,用于监控微控制器或其他逻辑系统的电源电压。

它可以在上电掉电和节电情况下,或在电源电压低于预设的检测电压  $V_{th}$  时,向系统提供复位信号。

同时,在上电或电源电压恢复到高于预设的检测电压  $V_{th}$  时,或使能  $\overline{MR}$  电压由低电平变为高电平时,  $\overline{RESET}$  输出将延时  $T_{rp}$  时间后输出变为高电平。

MAX811 系列芯片当输入电压低于检测电压  $V_{th}$  时,  $\overline{RESET}$  输出为低电平;当使能控制端  $\overline{MR}$  电压为低电平时,  $\overline{RESET}$  输出也为低电平。应用简单,无需外部器件。

## 产品特点

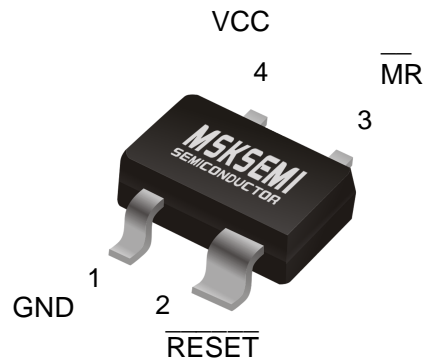
- 低功耗: 2uA (典型值) @  $V_{MR}=V_{CC}$
- 宽工作电压范围: 1V~6.0V
- 具有  $V_{CC}$  瞬态抗干扰
- 应用简单,无需外部元件
- 内置复位延时时间 500ms (典型值)
- 高精度复位电压值:  $\pm 2.5\%$
- 具有使能控制端  $\overline{MR}$ , 低电平有效
- 小体积封装: SOT143

## 产品用途

- 电池供电设备
- 掉电检测器
- 电脑、微机处理器
- 非易失性 RAM 信号存储保护器
- 临界 MP 电源监控
- 嵌入式系统

## 封装形式和管脚定义功能

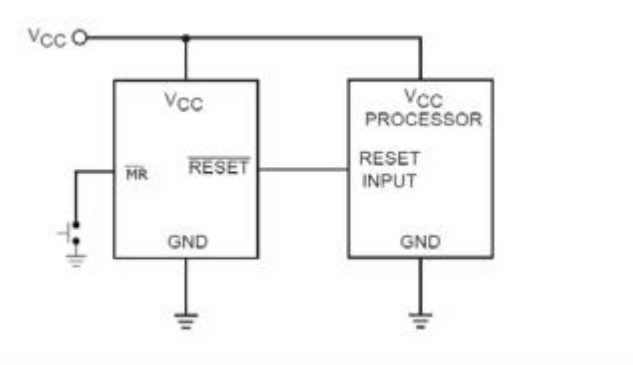
管脚序号	管脚定义	功能说明
SOT143		
1	GND	电源负极端
2	$\overline{RESET}$	复位输出端
3	$\overline{MR}$	使能控制端
4		电源正极端



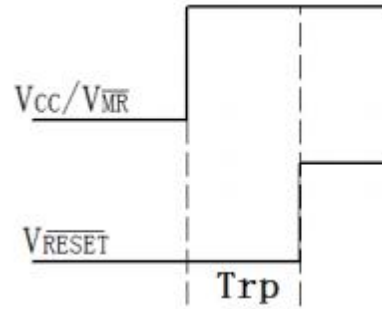
## 型号选择

名称	P/N	最高输入电压 $V_{CC}$ (V)	复位电压 $V_{th}$ (V)	$V_{th}$ 容差	封装形式
MAX811* (*= $V_{TH}$ )	MAX 811L	6.0	4.63	$\pm 2.5\%$	SOT143
	MAX 811M	6.0	4.38	$\pm 2.5\%$	
	MAX 811J	6.0	4.00	$\pm 2.5\%$	
	MAX 811T	6.0	3.08	$\pm 2.5\%$	
	MAX 811S	6.0	2.93	$\pm 2.5\%$	
	MAX 811R	6.0	2.63	$\pm 2.5\%$	

### 应用电路



### 上电复位时间



### 极限参数

项目	符号	说明	极限值	单位
电压	$V_{CC}$	输入电压	6.5	V
	$V_{RESET}$	复位输出电压	$-0.3 \sim V_{CC}+0.3$	V
功耗	PD	SOT143	200	mW
温度	$T_A$	工作温度范围	-20—70	°C
	$T_S$	存储温度范围	-50—125	
	$T_W$	焊接温度	260	°C,10s

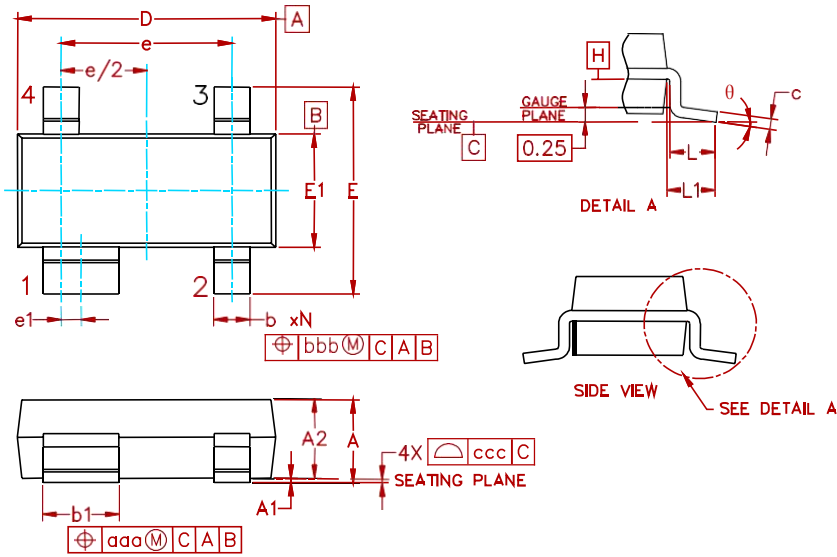
### 电学特性

MAX811\*

( $T_a=25^\circ\text{C}$ , 除非特别指定)

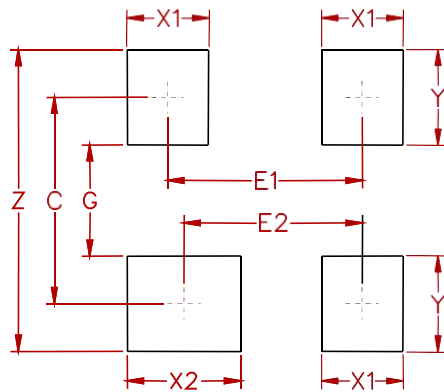
符号	参数	测试条件	最小	典型	最大	单位
$V_{CC}$	工作电压		1.0	-	6.0	V
$V_{th}$	输入检测电压	$V_{CC}=V_{th}$ for $V_{RESET}=H \rightarrow L$ , No Load	$0.975 \cdot V_{th}$	$V_{th}$	$1.025 \cdot V_{th}$	V
$I_{CCH}$	静态电流	$V_{CC}=6V, V_{MR}=V_{CC}$ , No Load	1	-	5	$\mu\text{A}$
$I_{CCL}$	待机电流	$V_{CC}=6V, V_{MR}=GND$ , No Load	1	-	32	$\mu\text{A}$
$I_{MR}$	使能拉电流	$V_{CC}=6V, V_{MR}=GND$ , No Load	1	-	25	$\mu\text{A}$
$T_{rd}$	复位下降沿时间	$V_{CC}=V_{th}$ to $V_{th}-100\text{mV}$	-	150	-	ns
$T_{rp}$	输出复位时间	MAX811Z/R/S/T: $V_{CC}=V_{MR}=0$ to 3.5V or $V_{MR}=0$ to 3.5V, $V_{CC}=3.5V$ MAX811M/L: $V_{CC}=V_{MR}=0$ to 5V or $V_{MR}=0$ to 5V, $V_{CC}=5V$ No Load	85	500	900	ms
$V_{OL}$	输出低电压	$V_{CC}=V_{thmin}, I_{SINK}=3.2\text{mA}$	-	-	0.5	V
$V_{OH}$	输出高电压	$V_{CC} > V_{thmax}, I_{SOURCE}=500\mu\text{A}$	$0.8V_{CC}$	-	-	V
$V_{MRH}$	输入高电平	$V_{CC}=6V, V_{RESET}=V_{CC}$ , No Load	$0.7 \cdot V_{CC}$	-	$V_{CC}$	V
$V_{MRL}$	输入低电平	$V_{CC}=6V, V_{RESET}=GND$ , No Load	0	-	$0.2 \cdot V_{CC}$	V
$t_{MR}$	使能电平最小脉宽		10	-	-	$\mu\text{s}$
$\frac{\Delta V_{th}}{V_{th} \cdot \Delta T_a}$	温度系数	$-20^\circ\text{C} \leq T_a \leq 60^\circ\text{C}$	-	$\pm 200$	-	ppm/ °C

**PACKAGE MECHANICAL DATA**



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	-	0.048	0.80	-	1.22
A1	0.000	-	0.008	0.013	-	0.15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	-	0.020	0.30	-	0.51
b1	0.029	-	0.037	0.76	-	0.94
c	0.003	-	0.008	0.08	-	0.20
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.92 BSC		
e1	0.008			0.20 BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)			(0.54)		
N	4			4		
θ	0°	-	8°	0°	-	8°
aaa	0.006			0.15		
bbb	0.008			0.20		
ccc	0.004			0.10		

**Suggested Pad Layout**



**REEL SPECIFICATION**

P/N	PKG	QTY
MAX811	SOT-143	3000

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