

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

MMAX811X

产品手册

产品简介

MMAX811X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。

MMAX811X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。

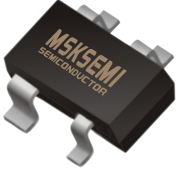
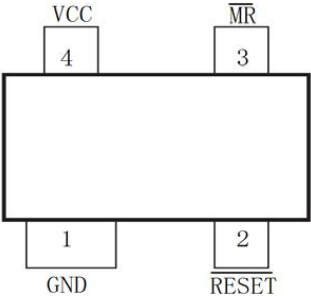
产品特点

- 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: SOT-143

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

封装形式	管脚定义
	
SOT-143	

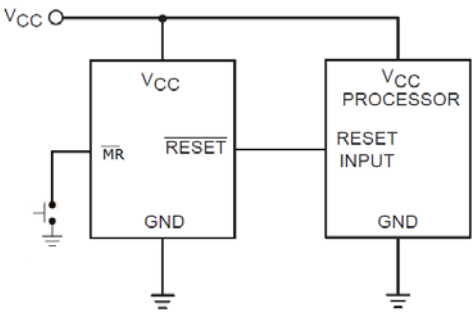
管脚序号	管脚定义	功能说明
SOT-143		
1	GND	电源负极端
2	\overline{RESET}	复位输出端
3	\overline{MR}	使能控制端
4	VCC	电源正极端

型号和丝印详情

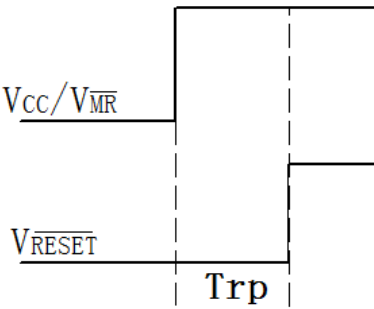
名称	型号	最高输入电压 VCC (V)	复位电压 Vth (V)	Vth 容差	封装形式
MMAX811	MMAX811L	6.0	4.63	±2.5%	SOT-143
	MMAX811M	6.0	4.38	±2.5%	
	MMAX811J	6.0	4.00	±2.5%	
	MMAX811T	6.0	3.08	±2.5%	
	MMAX811S	6.0	2.93	±2.5%	
	MMAX811R	6.0	2.63	+2.5%	

MMAX811L	MMAX811M	MMAX811J
		
MMAX811T	MMAX811S	MMAX811R
		

应用电路



上电复位时间



极限参数

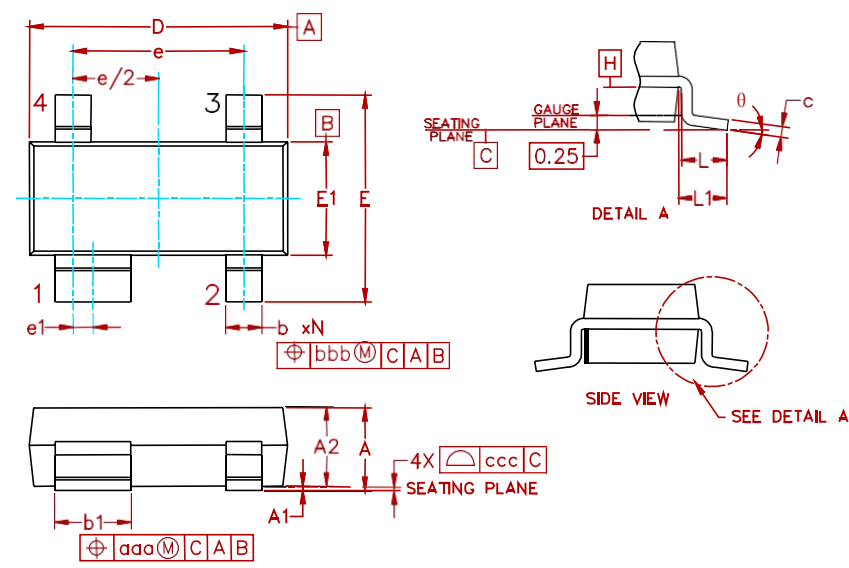
项目	符号	说明	极限值	单位
电压	V_{CC}	输入电压	6.5	V
	V_{RESET}	复位输出电压	$-0.3 \sim V_{CC}+0.3$	V
功耗	PD	SOT143	200	mW
温度	T_A	工作温度范围	$-20-70$	$^{\circ}\text{C}$
	T_S	存储温度范围	$-50-125$	
	T_W	焊接温度	260	$^{\circ}\text{C}, 10\text{s}$

电学特性

MMAX811X (Ta=25℃, 除非特别指定)

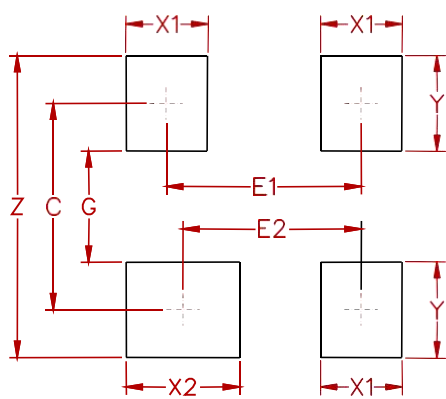
符号	参数	测试条件	最小	典型	最大	单位
V_{CC}	工作电压		1.0	—	6.0	V
V_{th}	输入检测电压	$V_{CC}=V_{th}$ for $V_{RESET}=H \rightarrow L$, No Load	$0.975 \cdot V_{th}$	V_{th}	$1.025 \cdot V_{th}$	V
I_{CCH}	静态电流	$V_{CC}=6V, V_{MR}=V_{CC}$, No Load	1	—	5	μA
I_{CCL}	待机电流	$V_{CC}=6V, V_{MR}=GND$, No Load	1	—	32	μA
I_{MR}	使能拉电流	$V_{CC}=6V, V_{MR}=GND$, No Load	1	—	25	μA
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	—	—	μs
$\frac{\Delta V_{th}}{V_{th} \cdot \Delta T_a}$	温度系数	$-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$	—	± 200	—	ppm/ $^{\circ}\text{C}$

封装信息



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		

焊盘布局



订购信息

P/N	PKG	QTY
MMAX811	SOT-143	3000

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