

MSKSEMI 美森科

SEMICONDUCTOR



ESD



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PLED

78LXX-MS

产品手册

产品简介

78LXX-MS 系列是一款采用双极性工艺制造的高压输入稳压器，最高输入电压可达 30V，输出电压范围为 5V~15V。具有内部过热、过载、短路保护功能等特点，广泛应用于各类消费电子电器行业。

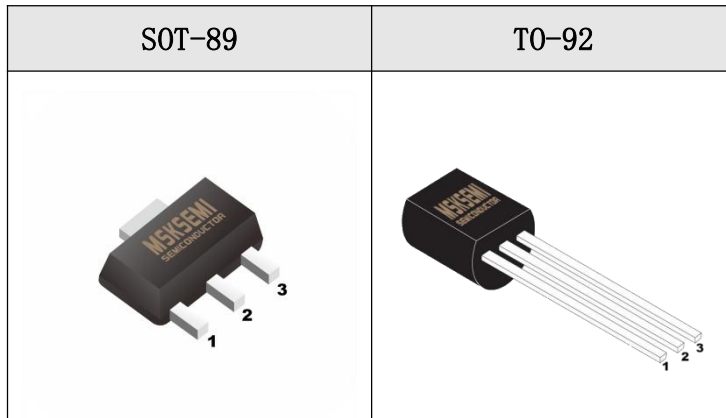
产品特点

- 高的输入电压:最高可达 30V
- 内部短路电流限制
- 输出电流可达: 100mA
- 内部热过载保护
- 无外部组件
- 封装形式: TO-92、SOT-89

产品用途

- 电池充电器设备
- 各种通信设备
- 电子控制领域
- 音频视频设备
- 安防监控设备
- LED 照明

封装形式和管脚功能定义



| 管脚序号 | | 管脚定义 | 功能说明 |
|-------|--------|------|------|
| TO-92 | SOT-89 | | |
| 1 | 1 | VOUT | 输出端 |
| 2 | 2 | GND | 接地端 |
| 3 | 3 | VIN | 输入端 |

型号选择

| 名称 | 型号 | 最高输入电压 (V) | 输出电压 (V) | 容差 | 封装形式 |
|----------|----------|------------|----------|-----|-----------------|
| 78LXX-MS | 78L05-MS | 30 | 5.0 | ±4% | TO-92 SOT-89 |
| | 78L06-MS | 30 | 6.0 | ±4% | |
| | 78L08-MS | 30 | 8.0 | ±4% | |
| | 78L09-MS | 30 | 9.0 | ±4% | |

极限参数

| 项目 | 符号 | 参数 | 极限值 | 单位 | |
|----|-----------------|--------|---------|-----|----|
| 电压 | V _{IN} | 最大输入电压 | 32 | V | |
| 功耗 | PD | 功耗 | SOT-89 | 700 | mW |
| | | | TO-92 | 300 | |
| 温度 | T _w | 工作温度 | 0~80 | °C | |
| | T _J | 工作结温 | 0~125 | °C | |
| | T _c | 存储温度 | -65~150 | °C | |

注：极限参数是指无论在任何条件下都不能超过的极限值。如果超过此极限值，将有可能造成产品劣化等物理性损伤；同时在接近极限参数下，不能保证芯片可以正常工作。

电学特性

78L05-MS (C_{IN}=0.33 μF, C_{OUT}=0.1 μF, V_{IN}=10V, I_{OUT}=40mA, T=25°C, 特殊规定除外)

| 符号 | 参数 | 测试条件 | 最小值 | 典型值 | 最大值 | 单位 |
|-------------------------|--------|--|-----|------|-----|-------|
| V _{OUT} | 输出电压 | V _{IN} =10V, I _{OUT} =40mA | 4.8 | 5 | 5.2 | V |
| I _{PK} | 输出电流 | V _{IN} =10V | - | 150 | - | mA |
| ΔV _{OUT} | 负载稳定度 | V _{IN} =10V, 1mA ≤ I _{OUT} ≤ 40mA | - | 10 | 50 | mV |
| | | V _{IN} =10V, 1mA ≤ I _{OUT} ≤ 100mA | - | 15 | 75 | mV |
| ΔV _{OUT} | 输入稳定度 | 8.5V ≤ V _{IN} ≤ 20V, I _{OUT} =40mA | - | 20 | 80 | mV |
| I _q | 静态电流 | V _{IN} =10V, I _{OUT} =40mA | - | 3 | 5 | mA |
| ΔI _q | 静态电流变化 | 8.5V ≤ V _{IN} ≤ 36V, I _{OUT} =0mA | - | 0.2 | 1 | mA |
| | | V _{IN} =10V, 1mA ≤ I _{OUT} ≤ 40mA | - | 0.02 | 0.1 | mA |
| PSRR | 纹波抑制率 | f=120Hz, V _{IN} =8.5V to 16V | - | 49 | - | dB |
| V _{IN(MIN)} | 最小输入电压 | | - | 8 | 8.5 | V |
| ΔV _{OUT} / ΔTa | 温度系数 | V _{IN} =10V, I _{OUT} =5mA, 0°C ≤ Ta ≤ 70°C | - | ±0.5 | - | mV/°C |

电学特性

78L06-MS ($C_{IN}=0.33\mu F$, $C_{OUT}=0.1\mu F$, $V_{IN}=10V$, $I_{OUT}=40mA$, $T=25^{\circ}C$, 特殊规定除外)

| 符号 | 参数 | 测试条件 | 最小值 | 典型值 | 最大值 | 单位 |
|-------------------------------|--------|---|------|-----------|------|-----------------|
| V_{OUT} | 输出电压 | $V_{IN}=10V$, $I_{OUT}=40mA$ | 5.76 | 6 | 6.24 | V |
| I_{PK} | 输出电流 | $V_{IN}=10V$ | - | 150 | - | mA |
| ΔV_{OUT} | 负载稳定度 | $V_{IN}=10V$, $1mA \leq I_{OUT} \leq 40mA$ | - | 10 | 50 | mV |
| | | $V_{IN}=10V$, $1mA \leq I_{OUT} \leq 100mA$ | - | 15 | 75 | mV |
| ΔV_{OUT} | 输入稳定度 | $8.5V \leq V_{IN} \leq 20V$, $I_{OUT}=40mA$ | - | 20 | 80 | mV |
| I_Q | 静态电流 | $V_{IN}=10V$, $I_{OUT}=40mA$ | - | 3 | 5 | mA |
| ΔI_Q | 静态电流变化 | $8.5V \leq V_{IN} \leq 36V$, $I_{OUT}=0mA$ | - | 0.2 | 1 | mA |
| | | $V_{IN}=10V$, $1mA \leq I_{OUT} \leq 40mA$ | - | 0.02 | 0.1 | mA |
| PSRR | 纹波抑制率 | $f=120Hz$, $V_{in}=8.5V$ to $16V$ | - | 49 | - | dB |
| $V_{IN(MIN)}$ | 最小输入电压 | | - | 8 | 8.5 | V |
| $\Delta V_{OUT} / \Delta T_a$ | 温度系数 | $V_{IN}=10V$, $I_{OUT}=5mA$, $0^{\circ}C \leq T_a \leq 70^{\circ}C$ | - | ± 0.5 | - | mV/ $^{\circ}C$ |

电学特性

78L08-MS ($C_{IN}=0.33\mu F$, $C_{OUT}=0.1\mu F$, $V_{IN}=10V$, $I_{OUT}=40mA$, $T=25^{\circ}C$, 特殊规定除外)

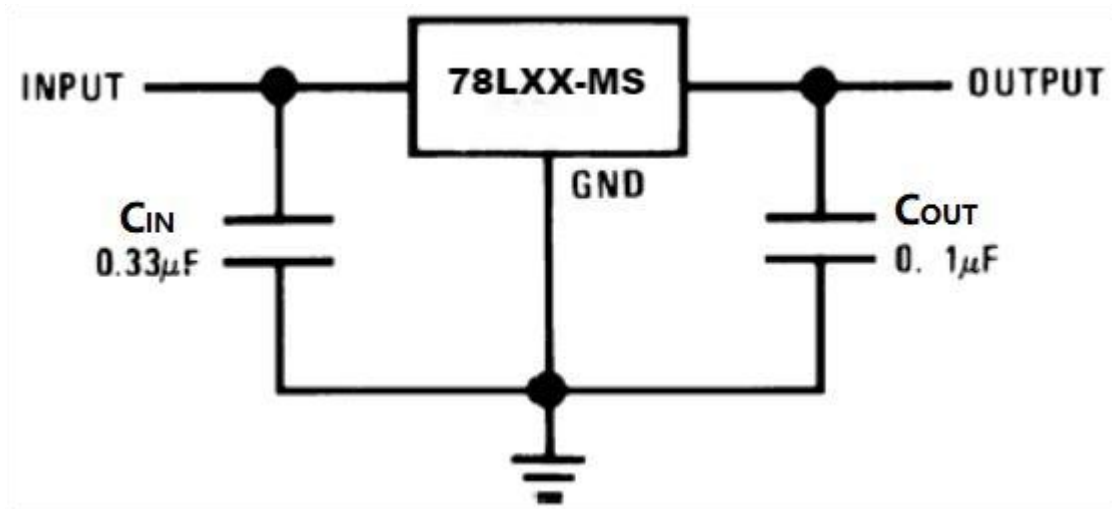
| 符号 | 参数 | 测试条件 | 最小值 | 典型值 | 最大值 | 单位 |
|-------------------------------|--------|---|------|-----------|------|-----------------|
| V_{OUT} | 输出电压 | $V_{IN}=10V$, $I_{OUT}=40mA$ | 7.68 | 8 | 8.32 | V |
| I_{PK} | 输出电流 | $V_{IN}=10V$ | - | 150 | - | mA |
| ΔV_{OUT} | 负载稳定度 | $V_{IN}=10V$, $1mA \leq I_{OUT} \leq 40mA$ | - | 10 | 50 | mV |
| | | $V_{IN}=10V$, $1mA \leq I_{OUT} \leq 100mA$ | - | 15 | 75 | mV |
| ΔV_{OUT} | 输入稳定度 | $8.5V \leq V_{IN} \leq 20V$, $I_{OUT}=40mA$ | - | 20 | 80 | mV |
| I_Q | 静态电流 | $V_{IN}=10V$, $I_{OUT}=40mA$ | - | 3 | 5 | mA |
| ΔI_Q | 静态电流变化 | $8.5V \leq V_{IN} \leq 36V$, $I_{OUT}=0mA$ | - | 0.2 | 1 | mA |
| | | $V_{IN}=10V$, $1mA \leq I_{OUT} \leq 40mA$ | - | 0.02 | 0.1 | mA |
| PSRR | 纹波抑制率 | $f=120Hz$, $V_{in}=8.5V$ to $16V$ | - | 49 | - | dB |
| $V_{IN(MIN)}$ | 最小输入电压 | | - | 8 | 8.5 | V |
| $\Delta V_{OUT} / \Delta T_a$ | 温度系数 | $V_{IN}=10V$, $I_{OUT}=5mA$, $0^{\circ}C \leq T_a \leq 70^{\circ}C$ | - | ± 0.5 | - | mV/ $^{\circ}C$ |

电学特性

78L09-MS ($C_{IN}=0.33\ \mu\text{F}$, $C_{OUT}=0.1\ \mu\text{F}$, $V_{IN}=10\text{V}$, $I_{OUT}=40\text{mA}$, $T=25^\circ\text{C}$, 特殊规定除外)

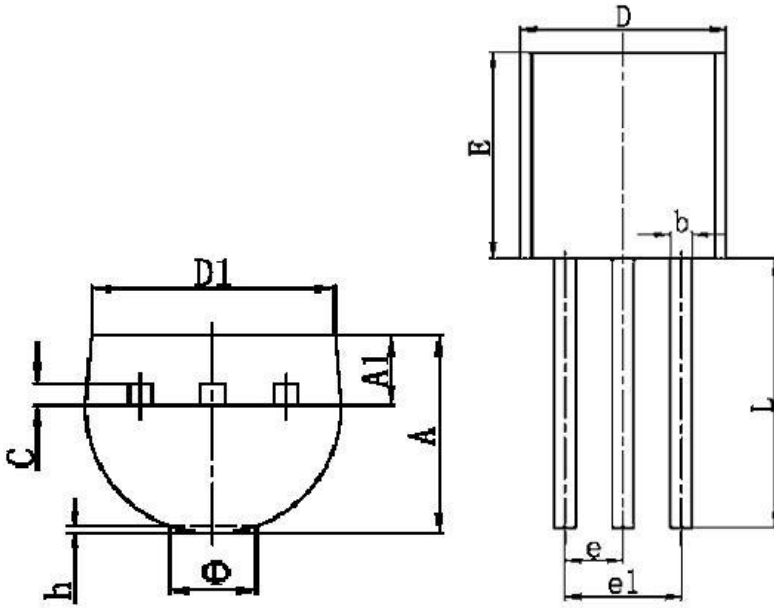
| 符号 | 参数 | 测试条件 | 最小值 | 典型值 | 最大值 | 单位 |
|-------------------------------|--------|---|------|-----------|------|----------------------|
| V_{OUT} | 输出电压 | $V_{IN}=10\text{V}$, $I_{OUT}=40\text{mA}$ | 8.64 | 9 | 9.36 | V |
| I_{PK} | 输出电流 | $V_{IN}=10\text{V}$ | - | 150 | - | mA |
| ΔV_{OUT} | 负载稳定度 | $V_{IN}=10\text{V}$, $1\text{mA} \leq I_{OUT} \leq 40\text{mA}$ | - | 10 | 50 | mV |
| | | $V_{IN}=10\text{V}$, $1\text{mA} \leq I_{OUT} \leq 100\text{mA}$ | - | 15 | 75 | mV |
| ΔV_{OUT} | 输入稳定度 | $8.5\text{V} \leq V_{IN} \leq 20\text{V}$, $I_{OUT}=40\text{mA}$ | - | 20 | 80 | mV |
| I_Q | 静态电流 | $V_{IN}=10\text{V}$, $I_{OUT}=40\text{mA}$ | - | 3 | 5 | mA |
| ΔI_Q | 静态电流变化 | $8.5\text{V} \leq V_{IN} \leq 36\text{V}$, $I_{OUT}=0\text{mA}$ | - | 0.2 | 1 | mA |
| | | $V_{IN}=10\text{V}$, $1\text{mA} \leq I_{OUT} \leq 40\text{mA}$ | - | 0.02 | 0.1 | mA |
| PSRR | 纹波抑制率 | $f=120\text{Hz}$, $V_{in}=8.5\text{V to }16\text{V}$ | - | 49 | - | dB |
| $V_{IN(MIN)}$ | 最小输入电压 | | - | 8 | 8.5 | V |
| $\Delta V_{OUT} / \Delta T_a$ | 温度系数 | $V_{IN}=10\text{V}$, $I_{OUT}=5\text{mA}$, $0^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$ | - | ± 0.5 | - | mV/ $^\circ\text{C}$ |

应用电路



封装信息

T0-92

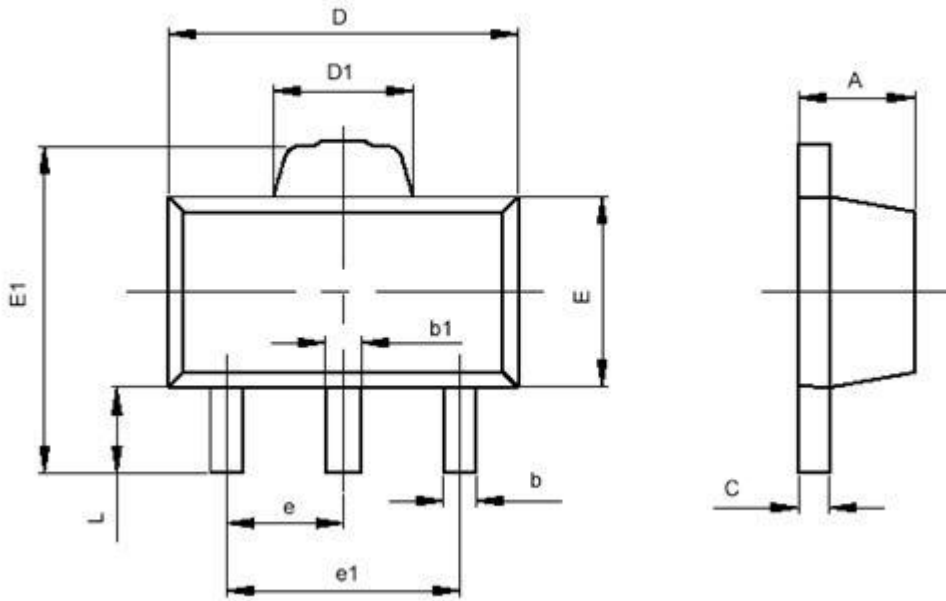


| 符号 | 最小值 (mm) | 最大值 (mm) |
|----|-----------|----------|
| A | 3.300 | 3.700 |
| A1 | 1.100 | 1.400 |
| b | 0.380 | 0.550 |
| c | 0.360 | 0.510 |
| D | 4.400 | 4.700 |
| D1 | 3.430 | |
| E | 4.300 | 4.700 |
| e | 1.270 TYP | |
| e1 | 2.440 | 2.640 |
| L | 14.100 | 14.500 |
| Φ | | 1.600 |
| h | 0.000 | 0.380 |

订购信息

| 订单型号 | 封装形式 | 包装/数量 |
|----------|-------|------------|
| 78LXX-MS | T0-92 | 袋装/1000pcs |

SOT-89-3



| 符号 | 最小值 (mm) | 最大值 (mm) |
|----|----------|----------|
| A | 1.400 | 1.600 |
| b | 0.320 | 0.520 |
| b1 | 0.360 | 0.560 |
| c | 0.350 | 0.440 |
| D | 4.400 | 4.600 |
| D1 | 1.400 | 1.800 |
| E | 2.300 | 2.600 |
| E1 | 3.940 | 4.250 |
| e | 1.500TYP | |
| e1 | 2.900 | 3.100 |
| L | 0.900 | 1.100 |

订购信息

| 订单型号 | 封装形式 | 包装/数量 |
|----------|--------|------------|
| 78LXX-MS | SOT-89 | 盘装/1000pcs |

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