

MC78L05F

Features

- Internal Short Circuit Current Limiting
- Internal Thermal Overload Protection
- No External Components Required

Maximum Ratings

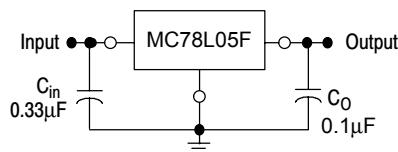
| Parameter | Symbol | Value | Unit |
|--------------------------------|-----------|------------|------|
| Input Voltage ($V_o=5.8V$) | V_1 | 30 | V |
| Operating Junction Temperature | T_{OPR} | -20---+120 | °C |
| Storage Temperature Range | T_{STG} | -55---+150 | °C |

Electrical Characteristics ($V=10V$, $I_o=40mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_1=0.33\mu F$, $C_0=0.1\mu F$, unless otherwise specified)

| Parameter | Sym | Min | Typ | Max | Test conditions |
|--------------------------|-----------------------|------|------------|----------------|--|
| Output Voltage | V_o | 4.8V | 5.0V | 5.2V | $T_j=25^{\circ}C$ |
| | | 4.7V | | 5.25V | $7V \leq V_1 \leq 20V$, $I_o=1mA-40mA$ |
| | | 5.0V | | | |
| | | 4.7V | | 5.25V | $7V \leq V_1 \leq V_{MAX}$, $I_o=1mA-700mA$ (Note) |
| Load Regulation | ΔV_o | | 11mV | 60mV | $I_o=1mA-100mA$, $T_j=25^{\circ}C$ |
| | | | 5.0mV | 30mV | $I_o=1mA-40mA$, $T_j=25^{\circ}C$ |
| Line regulation | ΔV_o | | 8mV 6mV | 150mV 100mV | $7V \leq V_1 \leq 20V$, $T_j=25^{\circ}C$ $8V \leq V_1 \leq 20V$, $T_j=25^{\circ}C$ |
| Quiescent Current | I_q ΔI_q | | 2.0mA | 5.5mA 1.5mA | $8V \leq V_1 \leq 20V$ |
| Quiescent Current Change | ΔI_q | | | 0.1mA | $1mA \leq I_o \leq 40mA$ |
| Output Noise Voltage | V_N | | 40 μV | | $10Hz \leq f \leq 100KHz$ |
| Ripple Rejection | RR | 41dB | 80dB | | $8V \leq V_1 \leq 20V$ $f=120Hz$, $T_j=25^{\circ}C$ |
| Dropout Voltage | V_d | | 1.7V | | $T_j=25^{\circ}C$ |

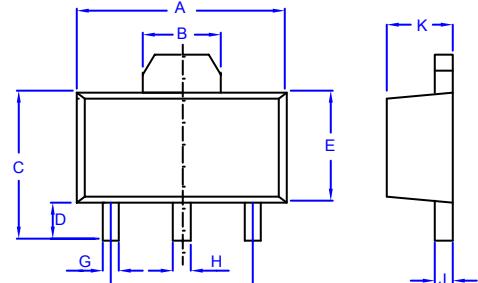
*Note: Bypass Capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators

Typical Application:



Three-Terminal Low Current Positive Voltage Regulator

SOT-89



1. OUT
2. GND
3. IN

| DIM | DIMENSINS | | | | NOTES |
|-----|-----------|------|------|------|-------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | .173 | .181 | 4.39 | 4.60 | |
| B | .063 | .071 | 1.60 | 1.80 | |
| C | .154 | .165 | 3.91 | 4.19 | |
| D | .031 | .039 | 0.80 | 1.00 | |
| E | .092 | .100 | 2.34 | 2.54 | |
| F | .118 | ---- | 3.00 | ---- | TYP |
| G | .013 | .019 | 0.33 | 0.48 | |
| H | .015 | .021 | 0.38 | 0.53 | |
| J | .015 | .016 | 0.38 | 0.41 | |
| K | .055 | .063 | 1.40 | 1.60 | |

Figure 1. Representative Schematic Diagram

