

LM78L15 Three-terminal positive voltage regulator

FEATURES

Maximum Output current

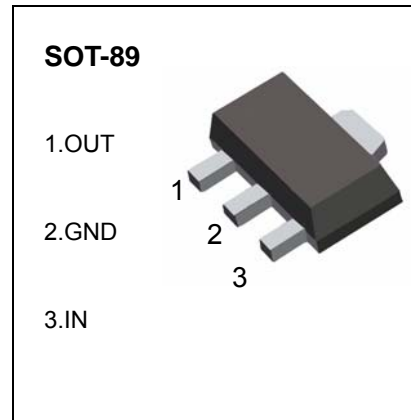
I_{OM} : 0.1 A

Output voltage

V_O : 15 V

Continuous total dissipation

P_D : 0.50 W



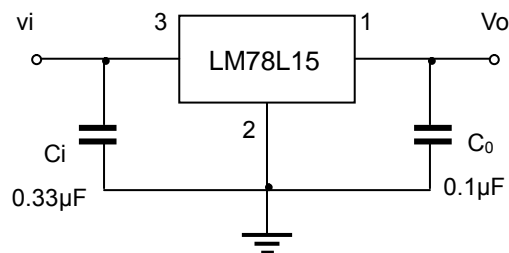
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|-----------|----------|------|
| Input Voltage | V_i | 35 | V |
| Operating Junction Temperature Range | T_{OPR} | 0-+125 | °C |
| Storage Temperature Range | T_{STG} | -55-+150 | °C |

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=23V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT | |
|--------------------------|--------------|---|---------|-------|-----|-------|---------|
| Output voltage | V_o | | 25°C | 14.4 | 15 | 15.6 | V |
| | | $17.5V \leq V_i \leq 30V, I_o=1mA-40mA$ | 0-125°C | 14.25 | 15 | 15.75 | V |
| | | $V_i=23V, I_o=1mA-70mA$ | | 14.25 | 15 | 15.75 | V |
| Load Regulation | ΔV_o | $I_o=1mA-100mA, V_i=23V$ | 25°C | | 25 | 150 | mV |
| | | $I_o=1mA-40mA, V_i=23V$ | 25°C | | 15 | 75 | mV |
| Line regulation | ΔV_o | $17.5V \leq V_i \leq 30V, I_o=40mA$ | 25°C | | 65 | 300 | mV |
| | | $19V \leq V_i \leq 30V, I_o=40mA$ | 25°C | | 58 | 250 | mV |
| Quiescent Current | I_q | | 25°C | | 4.6 | 6.5 | mA |
| Quiescent Current Change | ΔI_q | $19V \leq V_i \leq 30V, I_o=40mA$ | 0-125°C | | | 1.5 | mA |
| | ΔI_q | $1mA \leq I_o \leq 40mA, V_i=23V$ | 0-125°C | | | 0.1 | mA |
| Output Noise Voltage | V_N | $10Hz \leq f \leq 100KHz$ | 25°C | | 82 | | μV |
| Ripple Rejection | RR | $18.5V \leq V_i \leq 28.5V, f=120Hz$ | 0-125°C | 34 | 39 | | dB |
| Dropout Voltage | V_d | | 25°C | | 1.7 | | V |

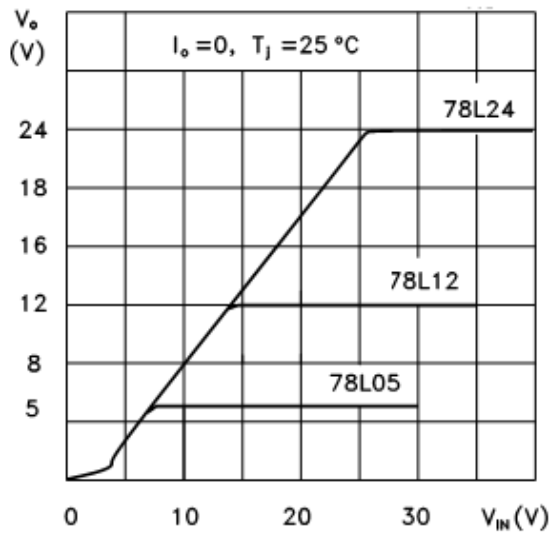
TYPICAL APPLICATION



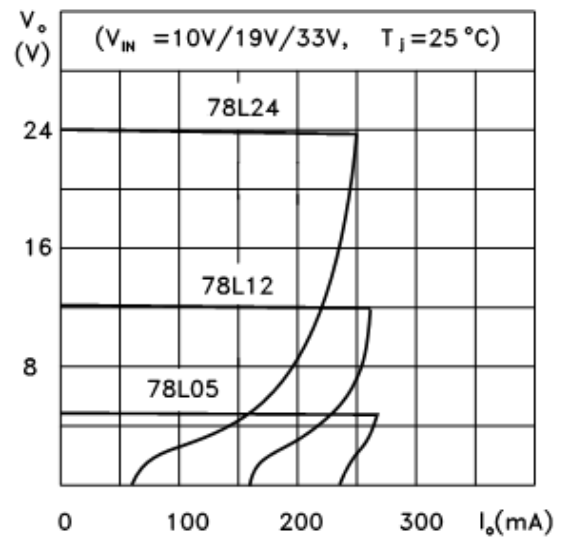
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

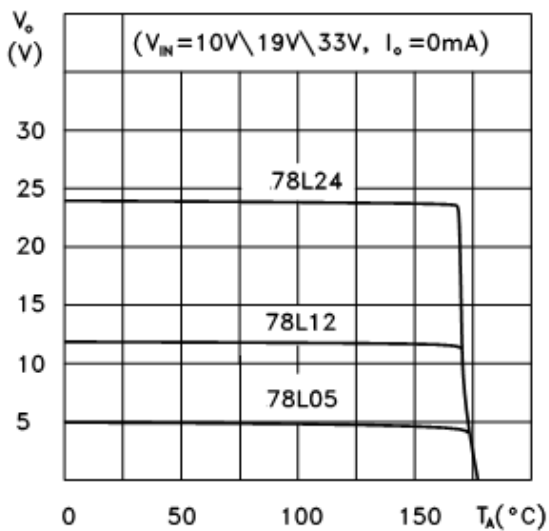
78L05/12/24 Output Characteristics



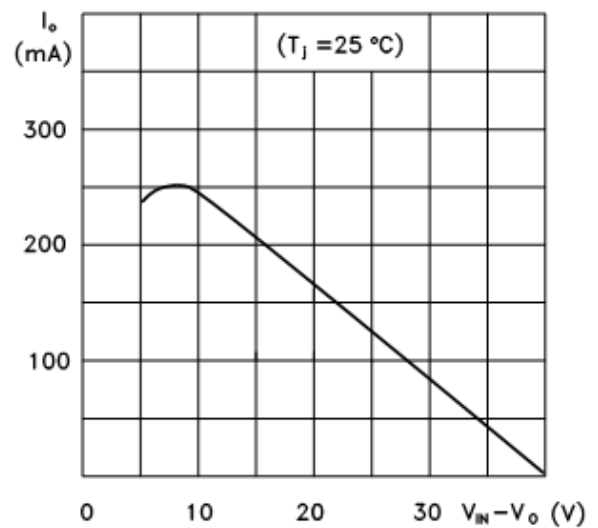
78L05/12/24 Load Characteristics



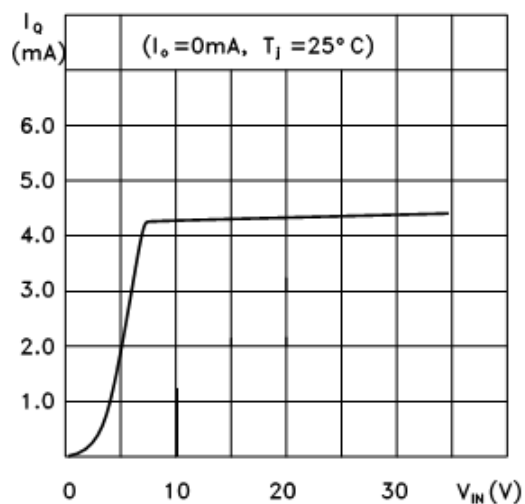
78L05/12/24 Thermal Shutdown



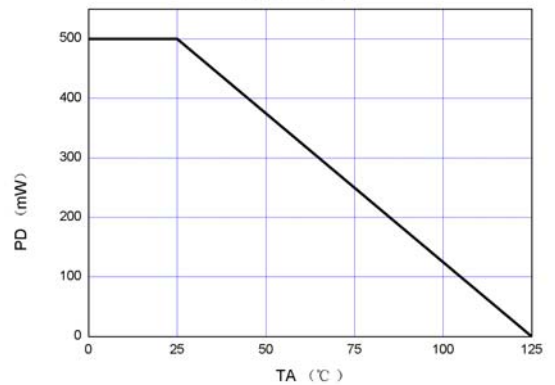
78L00 Series Short Circuit Output Current



78L05 Quiescent Current vs Input Voltage



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