



DC COMPONENTS CO., LTD.
INTEGRATED CIRCUIT

DM78L12
DM78L12A

TECHNICAL SPECIFICATIONS OF LOW CURRENT POSITIVE VOLTAGE REGULATOR

Description

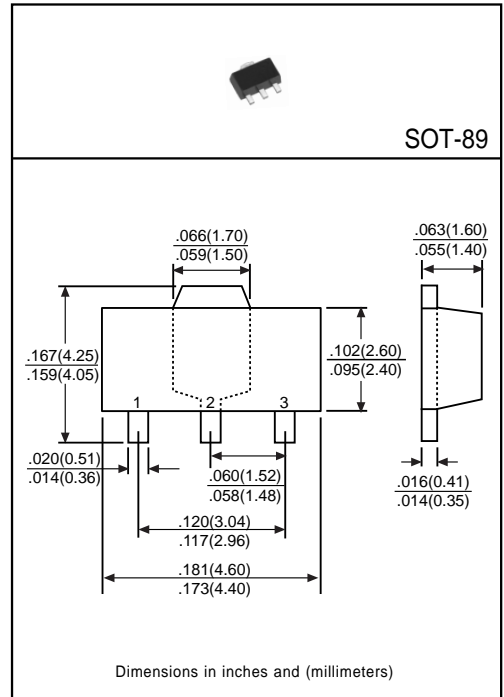
These regulators employ internal current limiting and thermal shutdown, making them essentially indestructible. They can deliver up to 100mA output current, if the case temperature can keep in $T_c=25^{\circ}\text{C}$. They are intended as fixed voltage regulators in a wide range of applications including local(on-card) regulation for elimination of noise and distribution problems associated with single-point regulation. In addition, they can be used with power pass elements to make high-current voltage regulators.

Pinning

- 1 = Output
- 2 = Ground
- 3 = Input

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$)

| Characteristic | Symbol | Rating | Unit |
|-------------------------------------|-----------|----------------|--------------------|
| Input Voltage | V_i | 35 | V |
| Total Power Dissipation | P_d | Internal limit | W |
| Operating Temperature Range | T_{opr} | 0 to +125 | $^{\circ}\text{C}$ |
| Maximum Junction Temperature | T_j | 125 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |
| Lead Temperature(Soldering 10 Sec.) | T_L | 260 | $^{\circ}\text{C}$ |



Electrical Characteristics

($V_{in}=19\text{V}$, $I_{out}=40\text{mA}$, $0^{\circ}\text{C}\leq T_j\leq 125^{\circ}\text{C}$, $C_{in}=0.33\mu\text{F}$, $C_{out}=0.1\mu\text{F}$, unless otherwise specified)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|---------------------------|-----------------|-------|-------|-------|---------------|---|
| Output Voltage | DM78L12A | 11.64 | 12.00 | 12.36 | V | $T_j=25^{\circ}\text{C}$ $1\text{mA}\leq I_o\leq 70\text{mA}$ $1\text{mA}\leq I_o\leq 40\text{mA}$, $14.5\text{V}\leq V_{in}\leq 27\text{V}$ |
| | DM78L12 | 11.40 | 12.00 | 12.60 | | |
| | | 11.40 | 12.00 | 12.60 | | |
| | | 11.40 | 12.00 | 12.60 | | |
| Line Regulation | Reg_{line} | - | - | 250 | mV | $T_j=25^{\circ}\text{C}$, $14.5\text{V}\leq V_{in}\leq 27\text{V}$ |
| | | - | - | 200 | | $T_j=25^{\circ}\text{C}$, $16\text{V}\leq V_{in}\leq 27\text{V}$ |
| Load Regulation | Reg_{load} | - | - | 50 | mV | $T_j=25^{\circ}\text{C}$, $1\text{mA}\leq I_o\leq 40\text{mA}$ |
| | | - | - | 100 | | $T_j=25^{\circ}\text{C}$, $1\text{mA}\leq I_o\leq 100\text{mA}$ |
| Input Bias Current | I_{IB} | - | - | 6.0 | mA | $T_j=25^{\circ}\text{C}$ |
| Input Bias Current Change | ΔI_{IB} | - | - | 0.1 | mA | $1\text{mA}\leq I_o\leq 40\text{mA}$ |
| | | - | - | 1.5 | | $16\text{V}\leq V_{in}\leq 27\text{V}$ |
| Output Noise Voltage | V_n | - | 80 | - | μV | $T_A=25^{\circ}\text{C}$, $10\text{Hz}\leq f\leq 100\text{KHz}$ |
| Ripple Rejection | RR | 40 | 54 | - | dB | $15\text{V}\leq V_{in}\leq 25\text{V}$, $f=120\text{Hz}$ |
| Dropout Voltage | V_D | - | 1.7 | - | V | $T_j=25^{\circ}\text{C}$ |
| Peak Output Current | I_{max} | - | 140 | - | mA | $T_j=25^{\circ}\text{C}$ |