



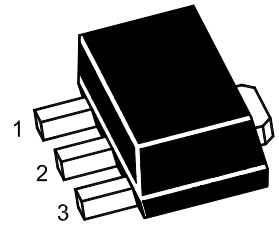
PJ78M12SQ

3-Terminal Voltage Regulator

Features

- Input voltage: up to 35V
- Output voltage: 12V
- Output current up to 500 mA, internal thermal overload protection and short-circuit limiting.

SOT-89



1. VOUT 2. GND 3. VIN

Marking Code : 78M12

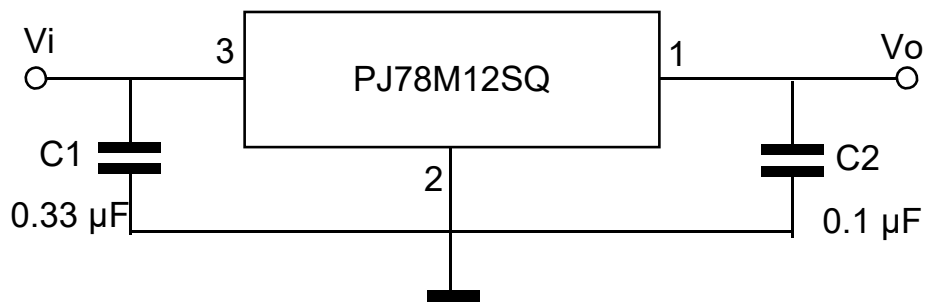
Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------|
| Input Voltage | V_I | 35 | V |
| Output Current | I_O | 500 | mA |
| Maximum Power Dissipation ^{Note1} | P_D | 1 | W |
| Junction Temperature | T_J | 150 | °C |
| Operating Temperature Range | T_{OPR} | -40 to +125 | °C |
| Storage Temperature Range | T_{STG} | -55 to +150 | °C |

Note:

1. P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.





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Electrical Characteristics

Ratings at $T_A = 25^\circ\text{C}$, With heat sink, $V_I=19\text{V}$, $I_O=40\text{mA}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$, unless otherwise specified.

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|--------------------------|--------------|---|------|------|------|-------------------|
| Output Voltage | V_O | | 11.5 | 12 | 12.5 | V |
| | | $I_O=5\text{mA to }350\text{mA}$, $V_I=14.5\text{V to }27\text{V}$ | 11.4 | 12 | 12.6 | V |
| Line Regulation | ΔV_O | $V_I=14.5\text{V to }30\text{V}$, $I_O=200\text{mA}$ | -- | -- | 240 | mV |
| | | $V_I=16\text{V to }30\text{V}$, $I_O=200\text{mA}$ | -- | -- | 120 | mV |
| Load Regulation | ΔV_O | $I_O=5\text{mA to }500\text{mA}$, $T_J=25^\circ\text{C}$ | -- | -- | 240 | mV |
| | | $I_O=5\text{mA to }200\text{mA}$, $T_J=25^\circ\text{C}$ | -- | -- | 120 | mV |
| Ripple Rejection | RR | $V_I=15\text{V to }25\text{V}$, $f=120\text{Hz}$, $I_O=300\text{mA}$ | 55 | -- | -- | dB |
| Dropout Voltage | V_D | | -- | 2 | -- | V |
| Quiescent Current | I_Q | | -- | -- | 6 | mA |
| Quiescent Current Change | ΔI_Q | $V_I=14.5\text{V to }30\text{V}$, $I_O=200\text{mA}$ | -- | -- | 0.8 | mA |
| | | $I_O=5\text{mA to }350\text{mA}$ | -- | -- | 0.5 | mA |
| Output Noise Voltage | V_N | $10\text{Hz} \leq f \leq 100\text{kHz}$ | -- | 75 | -- | $\mu\text{V}/V_O$ |



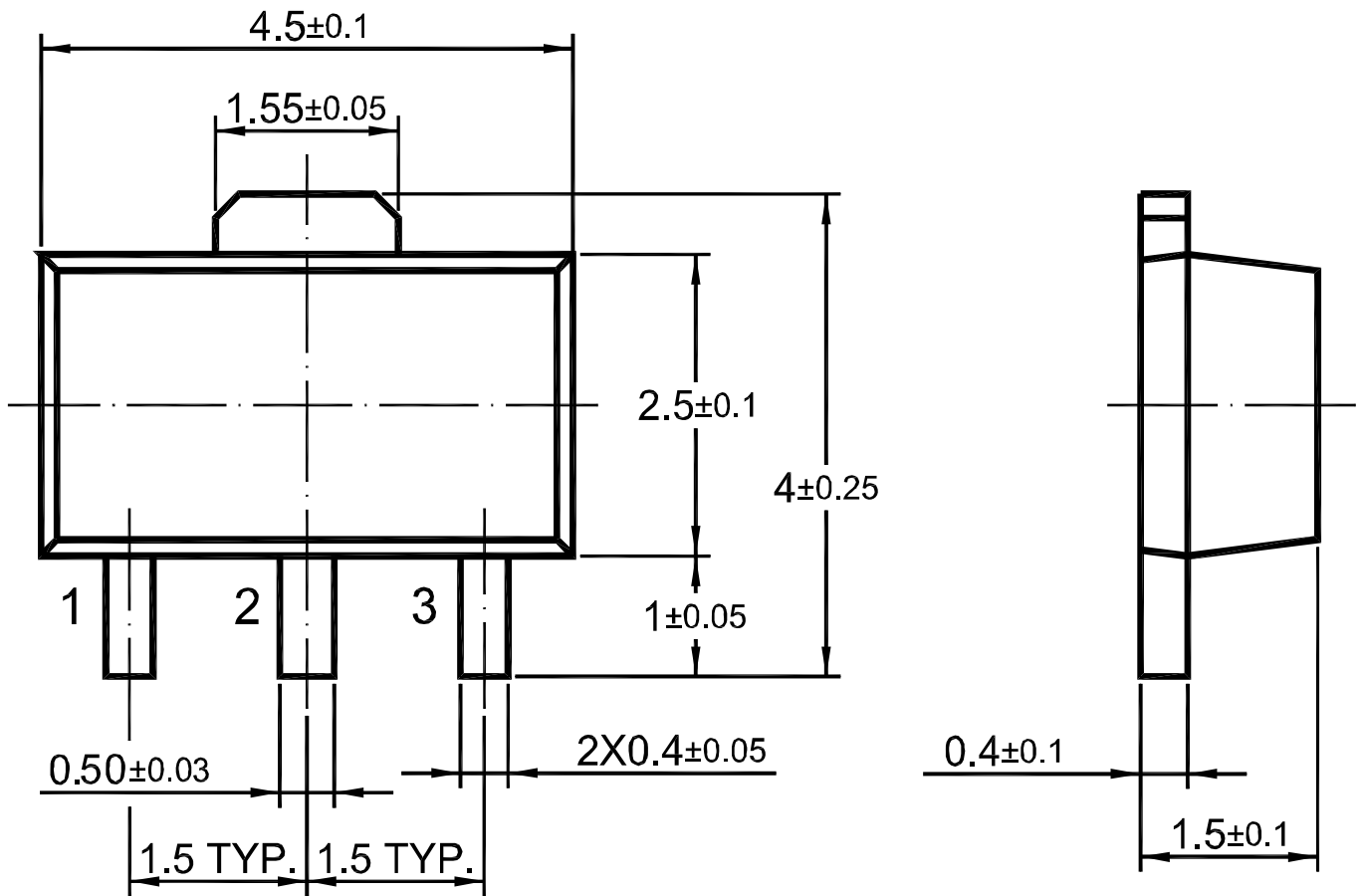
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3-Terminal Voltage Regulator

Package Outline

SOT-89

Dimensions in mm



Ordering Information

| Device | Package | Shipping |
|-----------|---------|------------------------|
| PJ78M12SQ | SOT-89 | 1,000PCS/Reel&7inches |
| | | 3,000PCS/Reel&13inches |