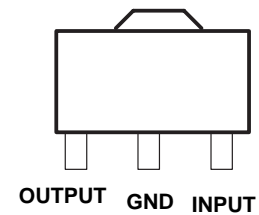
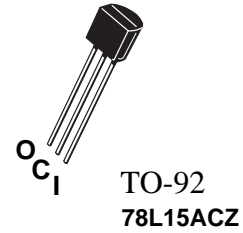


- 3-Terminal Regulators
- Output Current up to 100 mA
- No External Components
- Internal Thermal-Overload Protection
- Internal Short-Circuit Current Limiting
- Direct Replacements for Fairchild μ A78L15 Series

description

This series of fixed-voltage integrated-circuit voltage regulators is designed for a wide range of applications. These applications include 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. One of these regulators can deliver up to 100 mA of output current. The internal limiting and thermal-shutdown features of these regulators make them essentially immune to overload. When used as a replacement for a zener diode-resistor combination, an effective improvement in output impedance can be obtained, together with lower bias current.



SOT-89
78L15CPK

electrical characteristics at specified virtual junction temperature, $V_I = 23V$, $I_O = 40mA$ (unless otherwise noted)

| PARAMETER | TEST CONDITIONS | T ‡ | 78L15 | | | UNIT |
|---------------------------|---|---------------|-------|-----|-------|---------|
| | | | MIN | TYP | MAX | |
| Output voltage | $I_O = 1mA$ to $40mA$, $V_I = 17.5$ to $30V$ | $25^\circ C$ | 14.4 | 15 | 15.6 | V |
| | | Full range | 14.25 | 15 | 15.75 | |
| | | Full range | 14.25 | 15 | 15.75 | |
| Input voltage regulation | $V_I = 17.5V$ to $30V$ | $25^\circ C$ | | 65 | 300 | mV |
| | $V_I = 19V$ to $30V$ | | | 58 | 250 | |
| Ripple rejection | $V_I = 18.5V$ to $28.5V$, $f = 120$ Hz | $25^\circ C$ | 34 | 39 | | dB |
| Output voltage regulation | $I_O = 1$ mA to 100 mA | $25^\circ C$ | | 25 | 150 | mV |
| | $I_O = 1$ mA to 40 mA | | | 15 | 75 | |
| Output noise voltage | $f = 10$ Hz to 100 kHz | $25^\circ C$ | | 82 | | μV |
| Dropout voltage | | $25^\circ C$ | | 1.7 | | V |
| Bias current | | $25^\circ C$ | | 4.6 | 6.5 | mA |
| | | $125^\circ C$ | | | 6 | |
| Bias current change | $V_I = 19V$ to $30V$ | Full range | | | 1.5 | mA |
| | $I_O = 1$ mA to 40 mA | | | | 0.1 | |

‡ Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately. All characteristics are measured with a $0.33\text{-}\mu F$ capacitor across the input and a $0.1\text{-}\mu F$ capacitor across the output. Full range for the 78L05 is $T_J = 0^\circ C$ to $70^\circ C$

WS 78L15

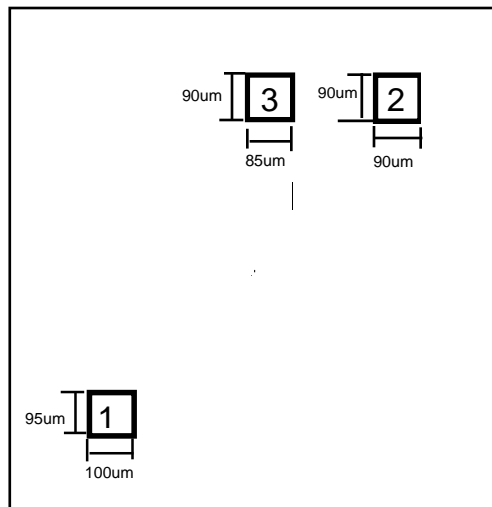
absolute maximum ratings over operating temperature range (unless otherwise noted)

| 78L15 | PARAMETER | UNIT |
|--|------------|------|
| Input voltage, V_I | 35 | V |
| Virtual junction temperature range, T_J | 150 | °C |
| Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds | 260 | °C |
| Storage temperature range, T_{stg} | -65 to 150 | °C |

recommended operating conditions

| 78L15 | MIN | MAX | UNIT |
|---|------|-----|------|
| Input voltage, V_I | 17.5 | 30 | V |
| Output current, I_O | | 100 | mA |
| Operating virtual junction temperature, T_J | 0 | 70 | °C |

Pad Location 78L15



Chip size 1.0 x 1.2 mm

| Pad N | Pad Name | X (um) | Y (um) |
|-------|----------|--------|--------|
| 1 | Ground | 95 | 100 |
| 2 | Input | 820 | 1010 |
| 3 | Output | 535 | 1015 |