



78L05ACZ - 78L12ACZ

Positive Voltage Regulators

GENERAL 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. Each of these regulators can deliver up to 100 mA of output current. The internal limiting and thermal-shutdown features of these regulators them essentially immune to overload. Compliance to RoHS.

FEATURES

- 3-Terminal Regulators
- Output Current up to 100 mA
- No External Components
- Short circuit Protection
- Internal Thermal-Overload Protection
- With TO92 package

ABSOLUTE MAXIMUM RATINGS

| Symbol | Ratings | Value | Unit |
|-----------|--------------------------------|---------------------|------|
| V_i | Input Voltage DC | $V_o = 5\text{ V}$ | 30 |
| | | $V_o = 12\text{ V}$ | 35 |
| I_o | Output Current | 100 | mA |
| P_D | Power Dissipation | Internally Limited | |
| T_{OP} | Operating Junction Temperature | 0° to 125 | °C |
| T_{STG} | Storage Temperature | -40° to 150 | °C |

THERMAL DATA

| Symbol | Ratings | Value | Unit |
|------------|--|-------|------|
| R_{thJA} | From Junction to Free-Air Thermal Resistance | 200 | °C/W |

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ELECTRICAL CHARACTERISTICS OF 78L05ACZ

$V_i = 10\text{ V}$; $I_o = 40\text{ mA}$; $T_C = 25^\circ\text{C}$

| Symbol | Ratings | Test Condition(s) | MIN | TYP | MAX | UNIT |
|-----------------|--------------------------|--|------|-----|------|------|
| V_o | Output Voltage | $T_C = 25^\circ\text{C}$ | 4.8 | 5 | 5.2 | V |
| | | $V_i = 7\text{ V to } 20\text{ V}$ $I_o = 1\text{ mA to } 40\text{ mA}$ | 4.75 | 5 | 5.25 | |
| | | $I_o = 1\text{ mA to } 70\text{ mA}$ | 4.75 | 5 | 5.25 | |
| ΔV_o | Line Regulation | $7\text{ V} \leq V_i \leq 20\text{ V}$ | - | - | 150 | mV |
| | | $8\text{ V} \leq V_i \leq 20\text{ V}$ | - | - | 100 | |
| ΔV_o | Load Regulation | $I_o = 1\text{ mA to } 100\text{ mA}$ | - | - | 60 | mV |
| | | $I_o = 1\text{ mA to } 40\text{ mA}$ | - | - | 30 | |
| I_B | Quiescent Current | | - | - | 6 | mA |
| ΔI_{B1} | Quiescent Current Change | $8\text{ V} \leq V_i \leq 20\text{ V}$ | - | - | 1.5 | mA |
| ΔI_{B2} | Quiescent Current Change | $I_o = 1\text{ mA to } 40\text{ mA}$ | - | - | 0.1 | mA |

ELECTRICAL CHARACTERISTICS OF 78L12ACZ

$V_i = 19\text{ V}$; $I_o = 40\text{ mA}$; $T_C = 25^\circ\text{C}$

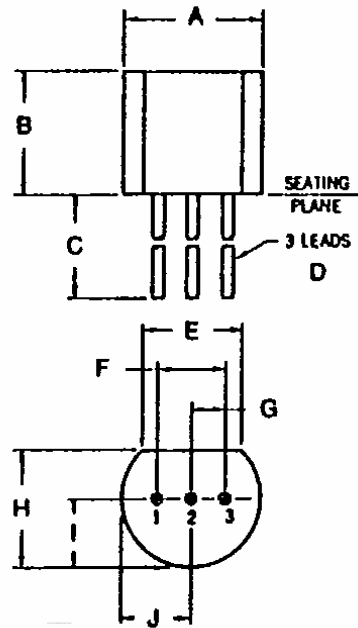
| Symbol | Ratings | Test Condition(s) | MIN | TYP | MAX | UNIT |
|-----------------|--------------------------|---|------|-----|------|------|
| V_o | Output Voltage | $T_C = 25^\circ\text{C}$ | 11.5 | 12 | 12.5 | V |
| | | $V_i = 14.5\text{ V to } 27\text{ V}$ $I_o = 1\text{ mA to } 40\text{ mA}$ | 11.4 | 12 | 12.6 | |
| | | $I_o = 1\text{ mA to } 70\text{ mA}$ | 11.4 | 12 | 12.6 | |
| ΔV_o | Line Regulation | $14.7\text{ V} \leq V_i \leq 27\text{ V}$ | - | - | 250 | mV |
| | | $16\text{ V} \leq V_i \leq 27\text{ V}$ | - | - | 200 | |
| ΔV_o | Load Regulation | $1\text{ mA} \leq I_o \leq 100\text{ mA}$ | - | - | 100 | mV |
| | | $1\text{ mA} \leq I_o \leq 40\text{ mA}$ | - | - | 50 | |
| I_B | Quiescent Current | | - | - | 6.5 | mA |
| ΔI_{B1} | Quiescent Current Change | $16\text{ V} \leq V_i \leq 27\text{ V}$ | - | - | 1.5 | mA |
| ΔI_{B2} | Quiescent Current Change | $1\text{ mA} \leq I_o \leq 40\text{ mA}$ | - | - | 0.1 | mA |

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MECHANICAL DATA CASE TO92 REGULATOR

| | |
|---------|--------|
| Pin 1 : | Input |
| Pin 2 : | GND |
| Pin 3 : | Output |

| DIMENSIONS | | |
|------------|-------|-------|
| mm | Min | Max |
| A | 4,45 | 4,95 |
| B | 4,32 | 4,95 |
| C | 12,70 | 15,49 |
| D | 0,41 | 0,56 |
| E | 3,43 | 3,43 |
| F | 2,41 | 2,67 |
| G | 1,14 | 1,40 |
| H | 3,30 | 3,94 |
| I | 2,38 | 2,42 |
| J | 2,38 | 2,42 |



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