



DC COMPONENTS CO., LTD.

INTEGRATED CIRCUIT

DA78L05
DA78L05A

TECHNICAL SPECIFICATIONS OF 3-TERMINAL POSITIVE VOLTAGE REGULATOR

Description

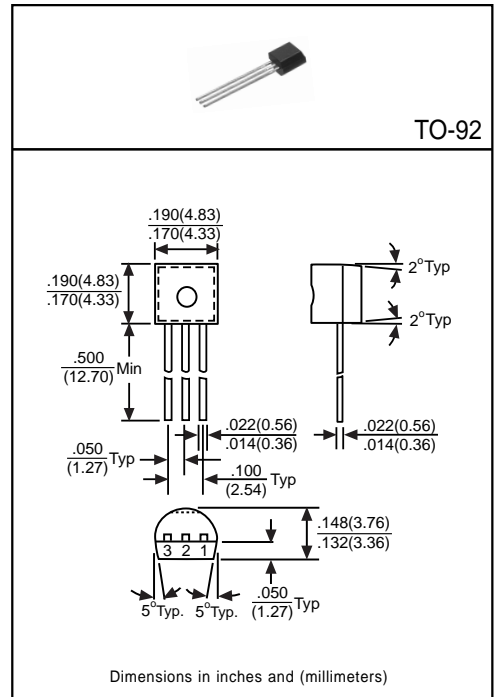
These regulators employ internal current limiting and thermal shutdown, making them essentially indestructible. They can deliver up to 100mA output current, if the case temperature can keep in $T_c=25^{\circ}\text{C}$. They are intended as fixed voltage regulators in a wide range of applications including 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 | 30 | 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

($V_{in}=10\text{V}$, $I_{out}=40\text{mA}$, $0^{\circ}\text{C}\leq T_J\leq 125^{\circ}\text{C}$, $C_{in}=0.33\mu\text{F}$, $C_{out}=0.1\mu\text{F}$, unless otherwise specified)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|---------------------------|-----------------|------|------|------|---------------|--|
| Output Voltage | DA78L05A | 4.85 | 5.00 | 5.15 | V | $T_J=25^{\circ}\text{C}$ $1\text{mA}\leq I_o\leq 70\text{mA}$ |
| | DA78L05 | 4.80 | 5.00 | 5.20 | | |
| | DA78L05A | 4.85 | - | 5.15 | | |
| | DA78L05 | 4.75 | - | 5.25 | | |
| | DA78L05A | 4.85 | - | 5.15 | | |
| | DA78L05 | 4.75 | - | 5.25 | | |
| Line Regulation | Regline | - | - | 150 | mV | $T_J=25^{\circ}\text{C}$, $7\text{V}\leq V_{in}\leq 20\text{V}$ |
| | | - | - | 100 | | $T_J=25^{\circ}\text{C}$, $8\text{V}\leq V_{in}\leq 20\text{V}$ |
| Load Regulation | Regload | - | - | 30 | 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} | - | 3.0 | 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 | | $8\text{V}\leq V_{in}\leq 20\text{V}$ |
| Output Noise Voltage | V_n | - | 40 | - | μV | $T_A=25^{\circ}\text{C}$, $10\text{Hz}\leq f\leq 100\text{KHz}$ |
| Ripple Rejection | RR | 47 | 62 | - | dB | $8\text{V}\leq V_{in}\leq 16\text{V}$, $f=120\text{Hz}$ |
| Dropout Voltage | V_D | - | 1.7 | - | V | $T_J=25^{\circ}\text{C}$ |