

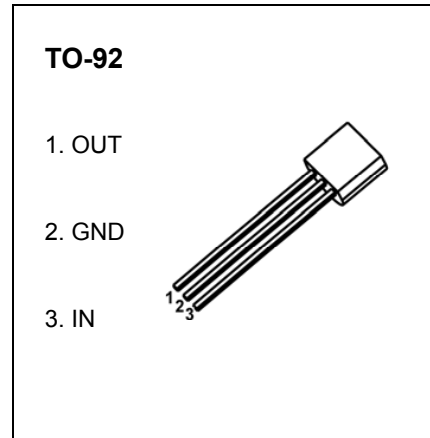


TO-92 Encapsulate Three-terminal Voltage Regulator

CJ78L05 Three-terminal positive voltage regulator

FEATURES

- Maximum Output Current I_o : 0.1 A
- Output Voltage V_o : 5 V
- Continuous Total Dissipation P_D : 0.625W ($T_a=25^\circ\text{C}$)



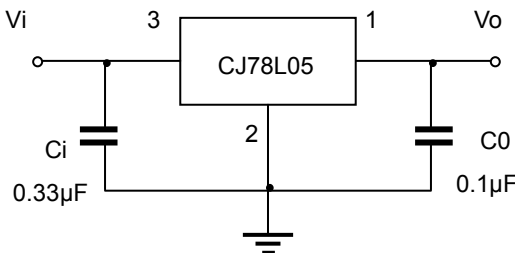
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|-----------|----------|------------------|
| Input Voltage | V_I | 30 | V |
| Operating Junction Temperature Range | T_{OPR} | -25~+125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55~+150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=10V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

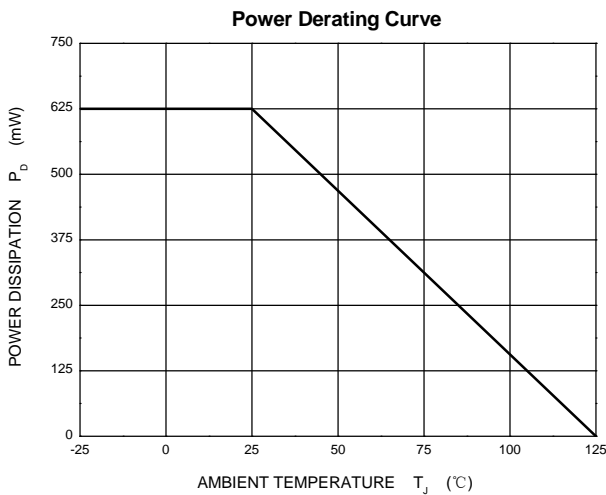
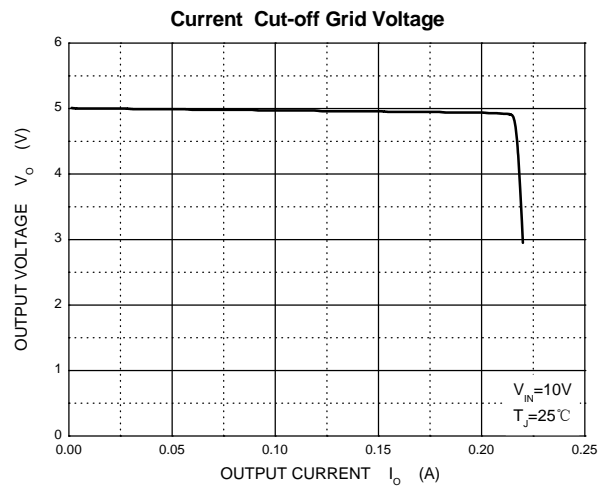
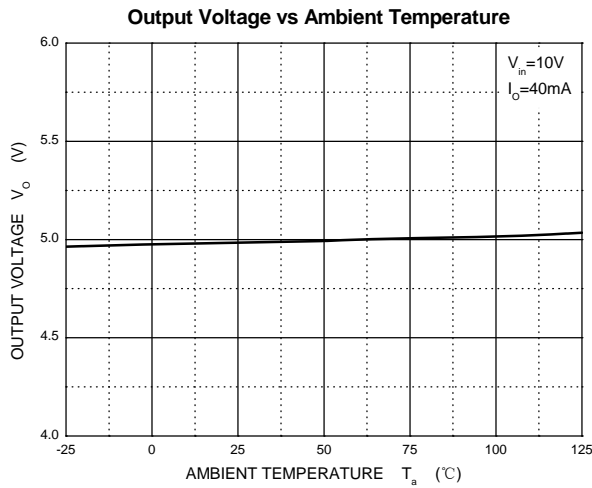
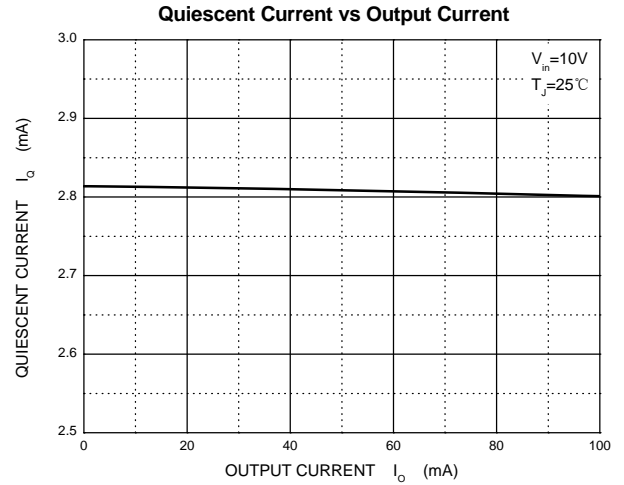
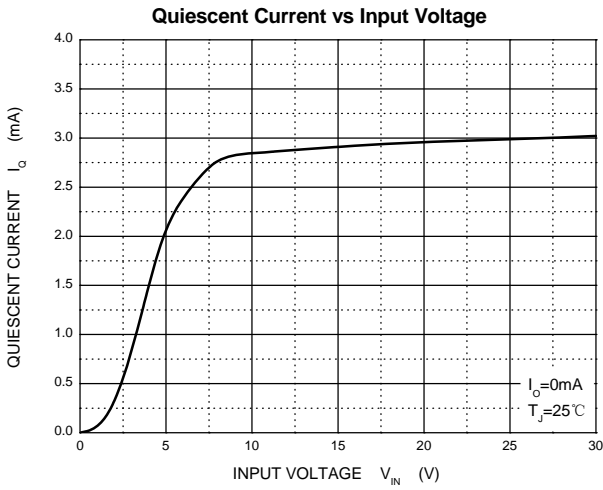
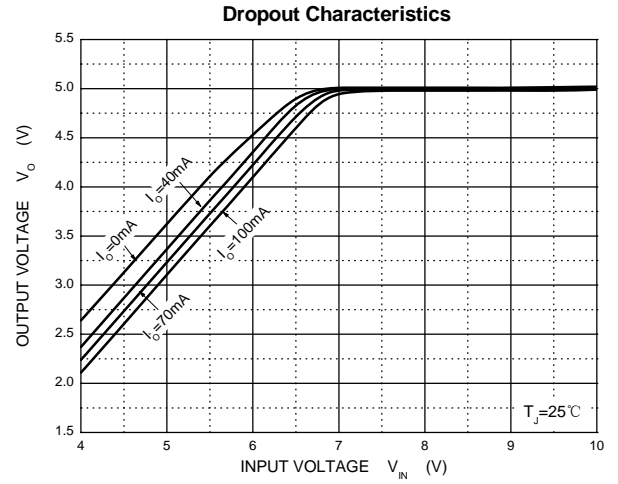
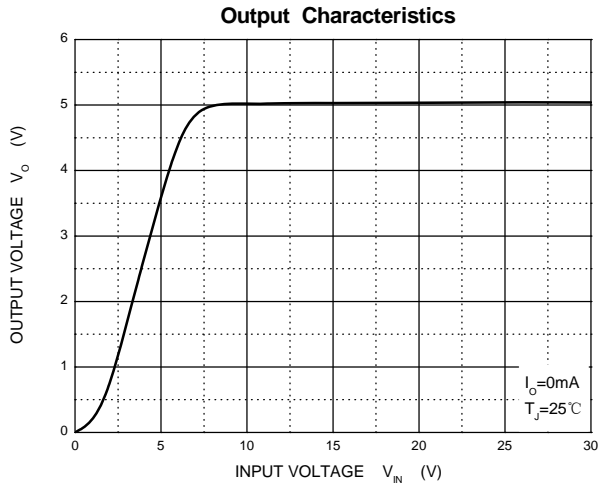
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit | |
|--------------------------|--------------|---|------------------------|------|-----|---------|----|
| Output voltage | V_o | 25°C | 4.8 | 5.0 | 5.2 | V | |
| | | $7V \leq V_i \leq 20V, I_o=1mA \sim 40mA$ | 0-125 $^\circ\text{C}$ | 4.75 | 5.0 | 5.25 | V |
| | | $I_o=1mA \sim 70mA$ | | 4.75 | 5.0 | 5.25 | V |
| Load Regulation | ΔV_o | $I_o=1mA \sim 100mA$ | 25°C | | 15 | 60 | mV |
| | | $I_o=1mA \sim 40mA$ | 25°C | | 8 | 30 | mV |
| Line regulation | ΔV_o | $7V \leq V_i \leq 20V$ | | | 32 | 150 | mV |
| | | $8V \leq V_i \leq 20V$ | 25°C | | 26 | 100 | mV |
| Quiescent Current | I_q | | 25°C | | 3.8 | 6 | mA |
| Quiescent Current Change | ΔI_q | $8V \leq V_i \leq 20V$ | 0-125 $^\circ\text{C}$ | | | 1.5 | mA |
| | | $1mA \leq I_o \leq 40mA$ | 0-125 $^\circ\text{C}$ | | | 0.1 | mA |
| Output Noise Voltage | V_N | $10Hz \leq f \leq 100KHz$ | 25°C | | 42 | μV | |
| Ripple Rejection | RR | $8V \leq V_i \leq 20V, f=120Hz$ | 0-125 $^\circ\text{C}$ | 41 | 49 | dB | |
| Dropout Voltage | V_d | | 25°C | | 1.7 | V | |

TYPICAL APPLICATION

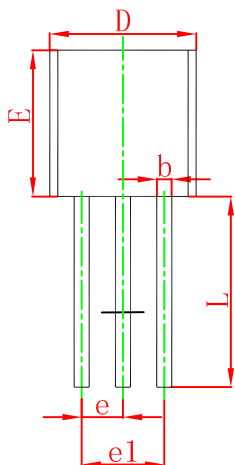
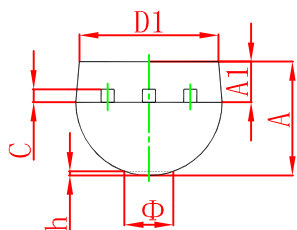


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

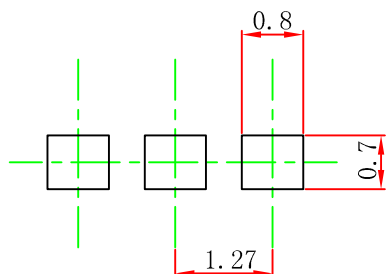


TO-92 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 3.300 | 3.700 | 0.130 | 0.146 |
| A1 | 1.100 | 1.400 | 0.043 | 0.055 |
| b | 0.380 | 0.550 | 0.015 | 0.022 |
| c | 0.360 | 0.510 | 0.014 | 0.020 |
| D | 4.400 | 4.700 | 0.173 | 0.185 |
| D1 | 3.430 | | 0.135 | |
| E | 4.300 | 4.700 | 0.169 | 0.185 |
| e | 1.270 TYP | | 0.050 TYP | |
| e1 | 2.440 | 2.640 | 0.096 | 0.104 |
| L | 14.100 | 14.500 | 0.555 | 0.571 |
| Φ | | 1.600 | | 0.063 |
| h | 0.000 | 0.380 | 0.000 | 0.015 |

TO-92 Suggested Pad Layout



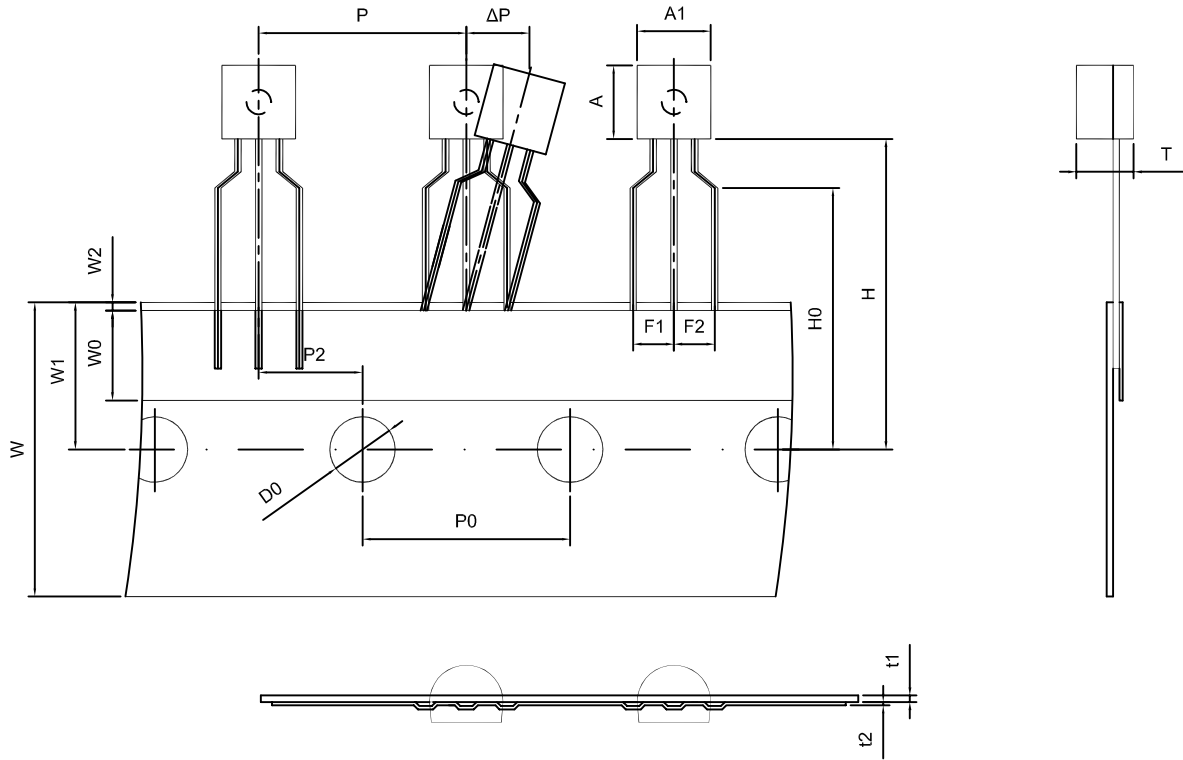
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

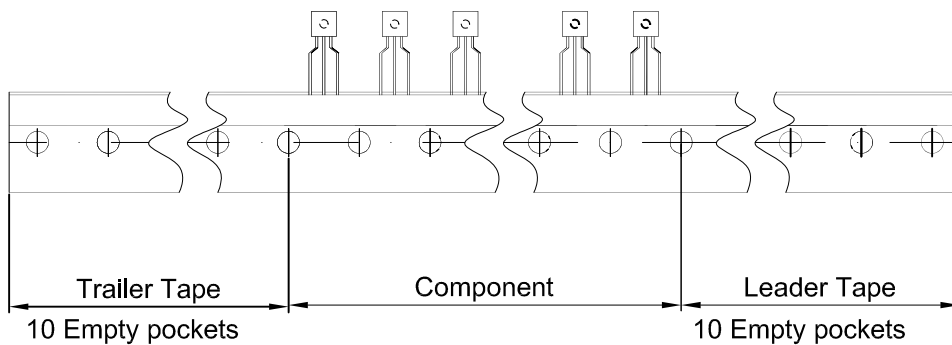
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TO-92 PACKAGE TAPEING DIMENSION



Dimensions are in millimeter

| A1 | A | T | P | P0 | P2 | F1 | F2 | W |
|---------|---------|----------|----------|----------|----------|----------|----------|---------------|
| 4.5±0.2 | 4.5±0.2 | 3.5±0.2 | 12.7±0.3 | 12.7±0.2 | 6.35±0.3 | 2.5±0.3 | 2.5±0.3 | 18.0+1.0/-0.5 |
| W0 | W1 | W2 | H | H0 | D0 | t1 | t2 | ΔP |
| 6.0±0.5 | 9.0±0.5 | 1.0 MAX. | 19.0±1.0 | 16.0±0.5 | 4.0±0.5 | 0.4±0.05 | 0.2±0.05 | 0 ± 1.0 |



| Package | Box | Box Size(mm) | Carton | Carton Size(mm) |
|---------|----------|--------------|------------|-----------------|
| TO-92 | 2000 pcs | 333×162×43 | 20,000 pcs | 350×340×250 |