

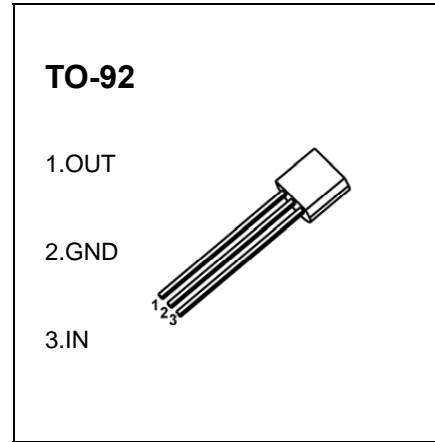


JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD
TO-92 Encapsulate Three-terminal Voltage Regulator

CJ78L15 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
I_{OM}: 0.1A
- Output voltage
V_O: 12V
- Continuous total dissipation
P_D: 0.625 W (T_a= 25 °C)



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

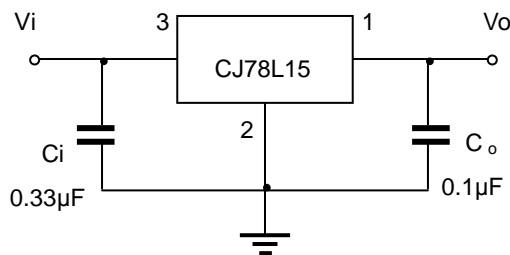
| Parameter | Symbol | Value | Unit |
|---|------------------|----------|------|
| Input Voltage | V _i | 30 | V |
| Thermal Resistance from Junction to Ambient | R _{θJA} | 166.7 | °C/W |
| Operating Junction Temperature Range | T _{OPR} | -25~+125 | °C |
| Storage Temperature Range | T _{STG} | -65~+150 | °C |

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE (V_i=23V, I_o=40mA, C_i=0.33μF, C_o=0.1μF, unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit | |
|--------------------------|-----------------|---|---------|-------|------|-------------------|---|
| Output voltage | V _o | 25°C | 14.4 | 15 | 15.6 | V | |
| | | 17.5V ≤ V _i ≤ 30V, I _o = 1mA-40mA | 0-125°C | 14.25 | 15 | 15.75 | V |
| | | V _i = 23V, I _o = 1mA-70mA | | 14.25 | 15 | 15.75 | V |
| Load Regulation | ΔV _o | I _o = 1mA-100mA, V _i = 23V | 25°C | 25 | 150 | mV | |
| | | I _o = 1mA-40mA, V _i = 23V | 25°C | 15 | 75 | mV | |
| Line regulation | ΔV _o | 17.5V ≤ V _i ≤ 30V, I _o = 40mA | 25°C | 65 | 300 | mV | |
| | | 19V ≤ V _i ≤ 30V, I _o = 40mA | 25°C | 58 | 250 | mV | |
| Quiescent Current | I _q | | 25°C | 4.6 | 6.5 | mA | |
| Quiescent Current Change | ΔI _q | 19V ≤ V _i ≤ 30V, I _o = 40mA | 0-125°C | | 1.5 | mA | |
| | ΔI _q | 1mA ≤ I _o ≤ 40mA, V _i = 23V | 0-125°C | | 0.1 | mA | |
| Output Noise Voltage | V _N | 10Hz ≤ f ≤ 100KHz | 25°C | 82 | | μV/V _o | |
| Ripple Rejection | RR | 18.5V ≤ V _i ≤ 28.5V, f = 120Hz | 0-125°C | 34 | 39 | dB | |
| Dropout Voltage | V _d | | 25°C | 1.7 | | V | |

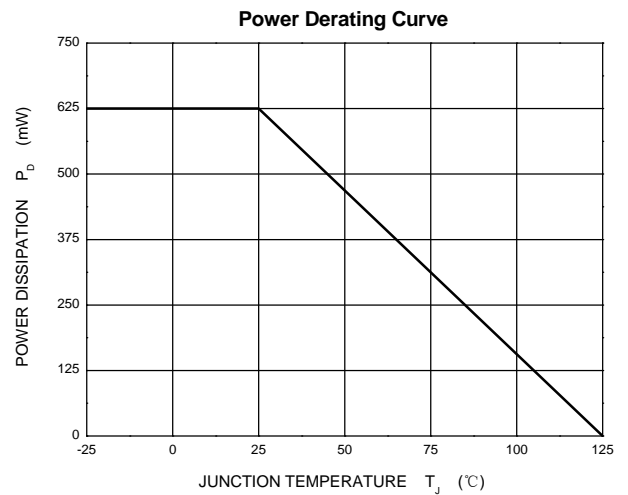
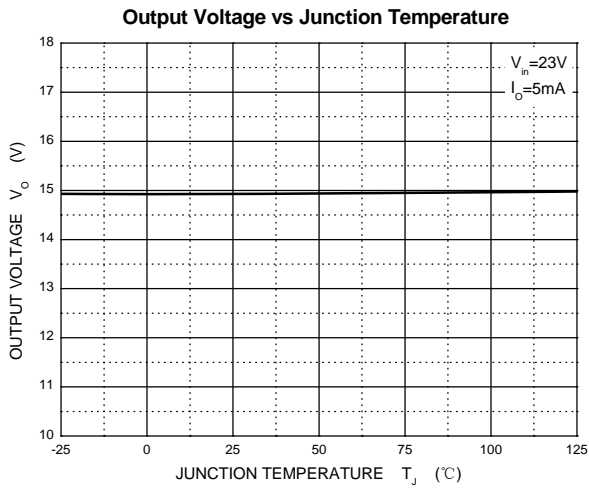
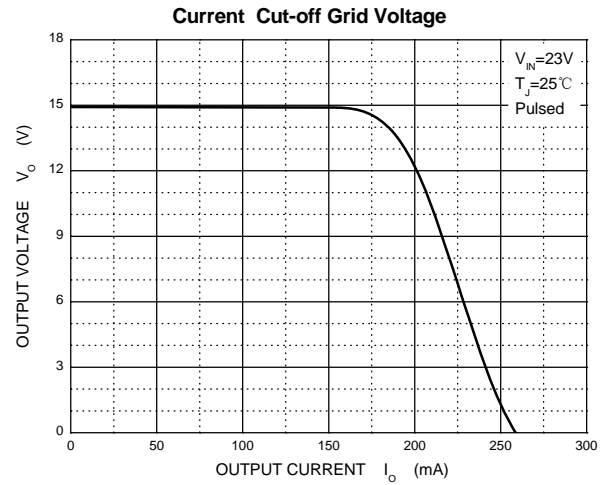
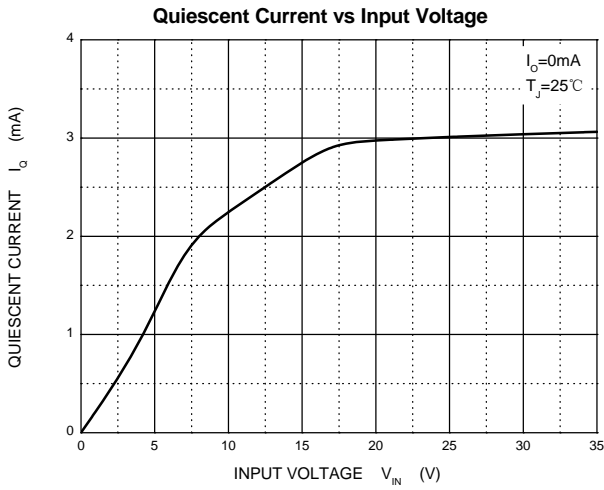
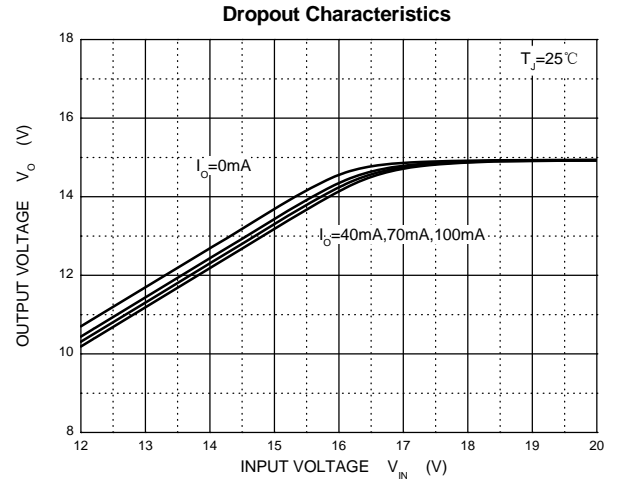
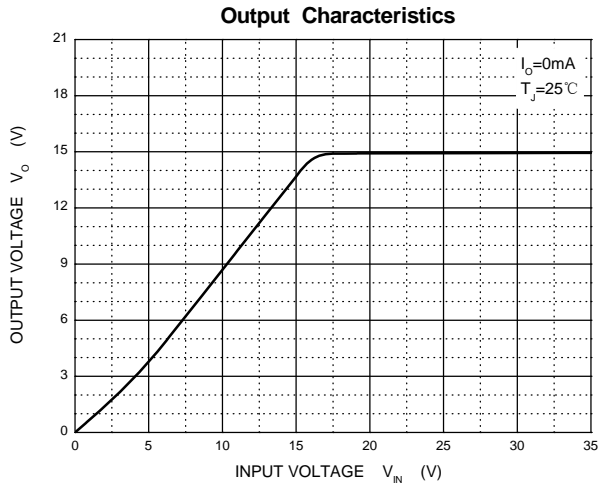
* Pulse test.

TYPICAL APPLICATION

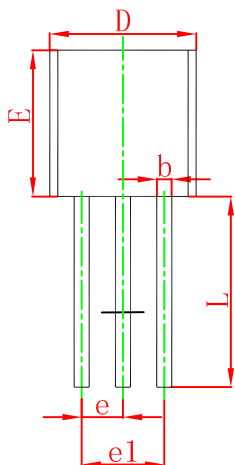
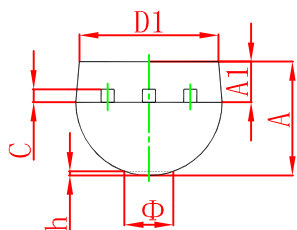


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

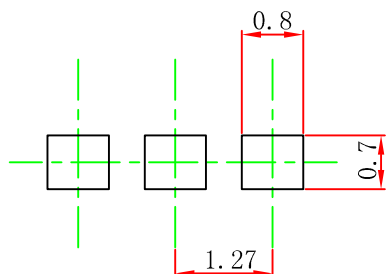


TO-92 Package Outline Dimensions



| 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:

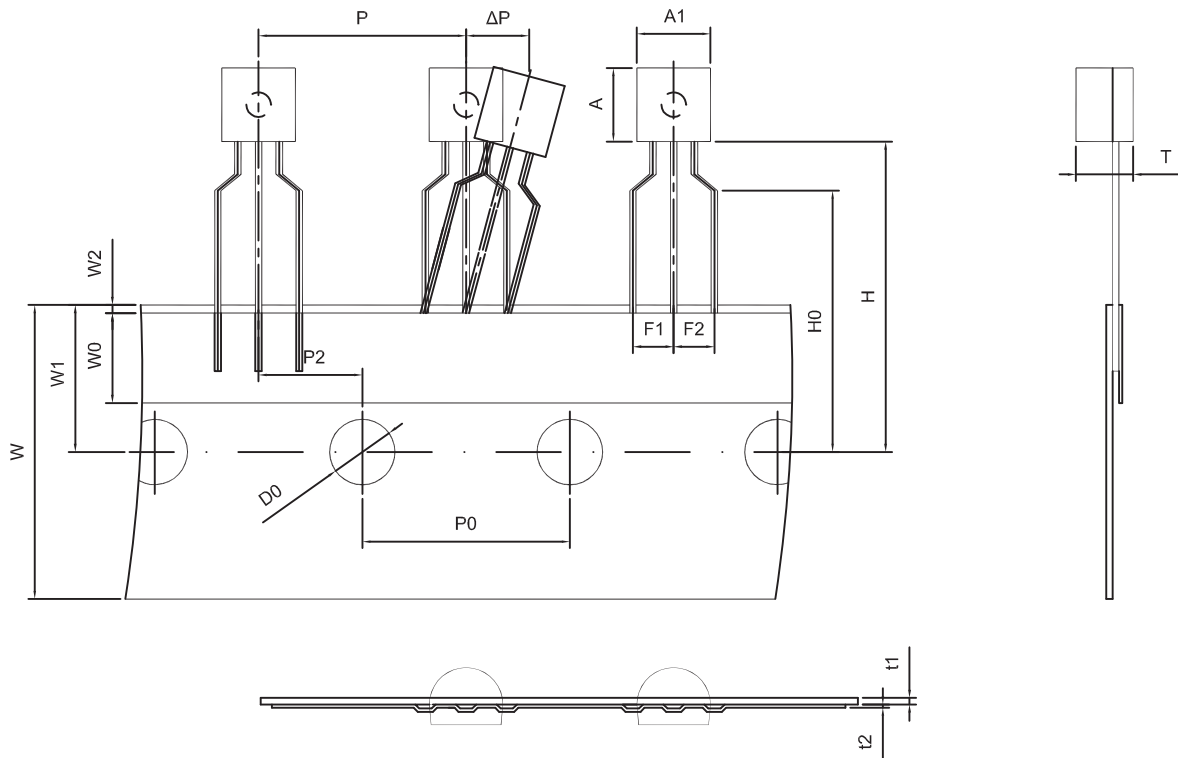
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

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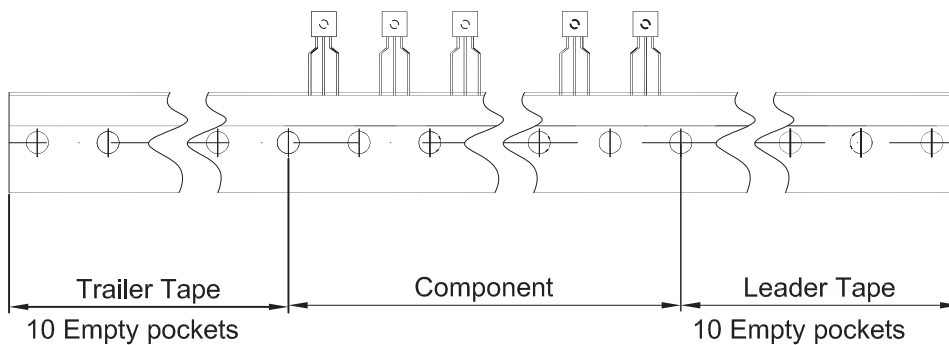
TO-92 PACKAGE TAPEING DIMENSION

TO-92 PACKAGE TAPEING DIMENSION



Dimensions are in millimeter

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



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