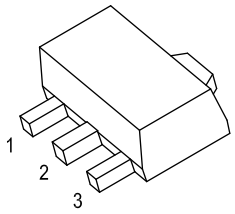
## Three-terminal positive voltage regulator

### FEATURES

- Maximum output current
  $I_{OM}$: 0.1A
- Output voltage
  $V_O$: 5V
- Continuous total dissipation
  $P_D$: 0.6 W ($T_a$= 25℃)

**SOT-89-3L**

1. OUT
2. GND
3. IN




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

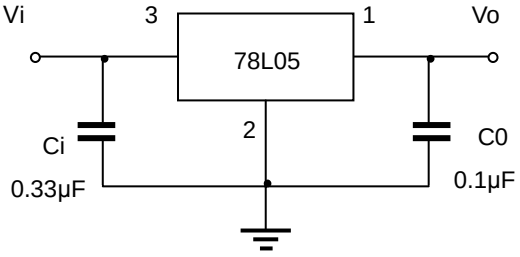
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Input Voltage | $V_i$ | 30 | V |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 160 | ℃/W |
| Operating Junction Temperature Range | $T_{OPR}$ | -40~+125 | ℃ |
| Storage Temperature Range | $T_{STG}$ | -65~+150 | ℃ |

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE (Vi=10V,Io=40mA,Ci=0.33uF,,Co=0.1uF, unless otherwise specified )**

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Output voltage | Vo | $T_J$=25℃ | 4.85 | 5.0 | 5.15 | V |
| | | | 4.90 | 5.0 | 5.10 | V |
| | | 7V≤Vi≤20V, Io=1mA~40mA | 4.75 | 5.0 | 5.25 | V |
| | | Io=1mA~70mA | 4.75 | 5.0 | 5.25 | V |
| Load Regulation | ΔVo | Io=1mA~100mA,$T_J$=25℃ | | 15 | 60 | mV |
| | | Io=1mA~40mA,$T_J$=25℃ | | 8 | 30 | mV |
| Line regulation | ΔVo | 7V≤Vi≤20V | | 32 | 150 | mV |
| | | 8V≤Vi≤20V,$T_J$=25℃ | | 26 | 100 | mV |
| Quiescent Current | Iq | $T_J$=25℃ | | 3.8 | 6 | mA |
| Quiescent Current Change | ΔIq | 8V≤Vi≤20V | | | 1.5 | mA |
| | ΔIq | 1mA≤V i≤40mA | | | 0.1 | |
| Output Noise Voltage | $V_N$ | 10Hz≤f≤100KHz,$T_J$=25℃ | | 42 | | μV/Vo |
| Ripple Rejection | RR | 8V≤Vi≤20V,f=120Hz | 41 | 49 | | dB |
| Dropout Voltage | Vd | $T_J$=25℃ | | 1.7 | | V |

* Pulse test.

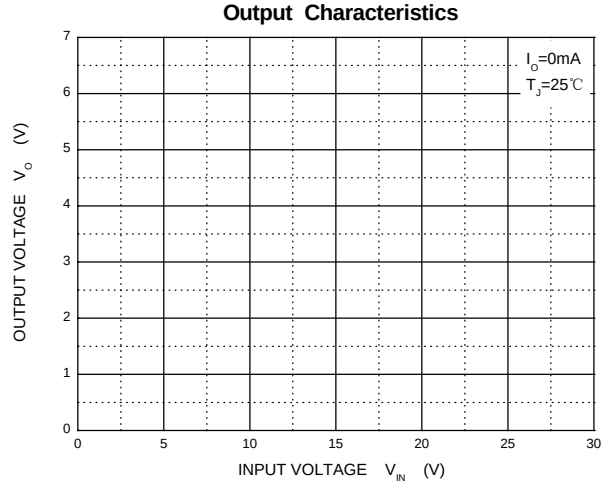
**TYPICAL APPLICATION**



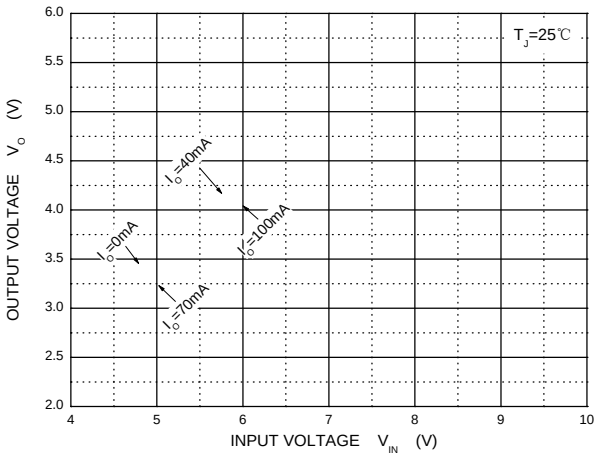

Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

## Typical Characteristics

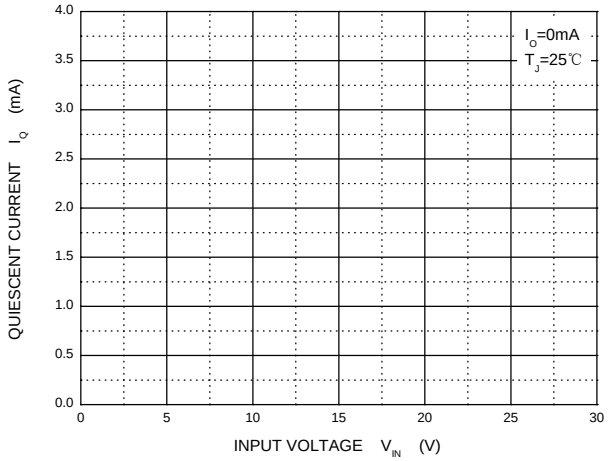
**Output Characteristics**



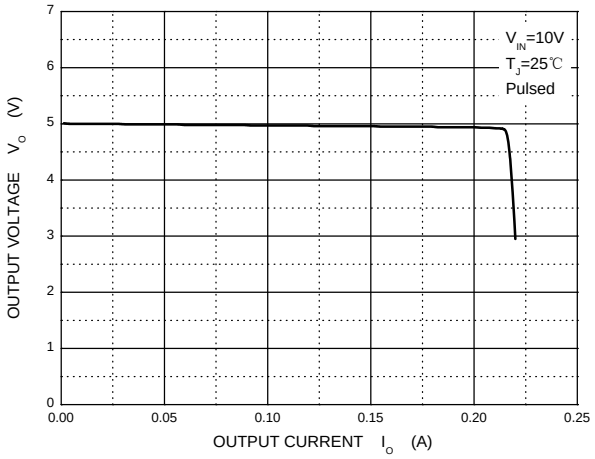

**Dropout Characteristics**



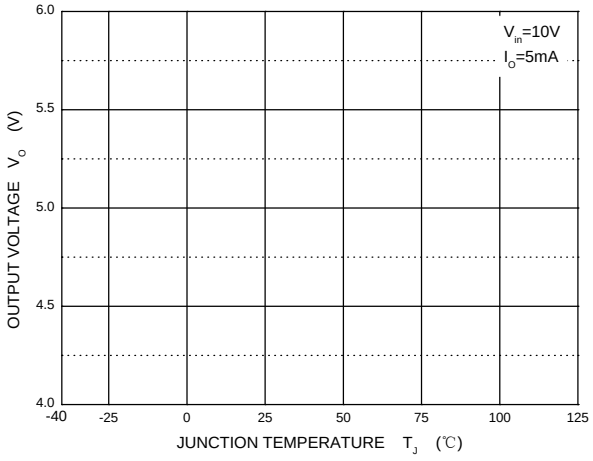

**Quiescent Current vs Input Voltage**



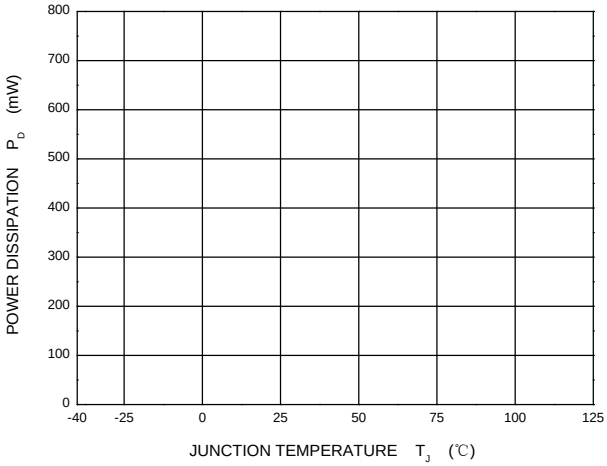

**Current Cut-off Grid Voltage**



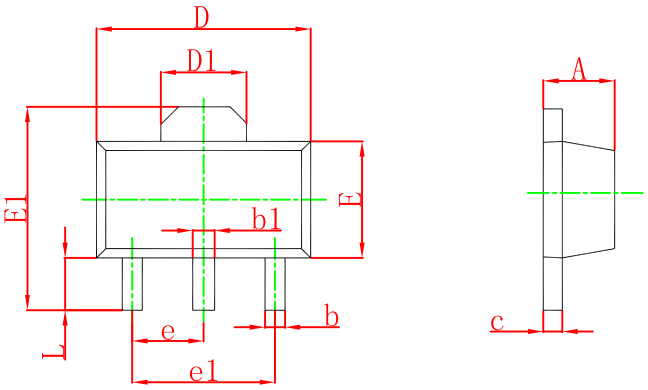

**Output Voltage vs Junction Temperature**




**Power Derating Curve**

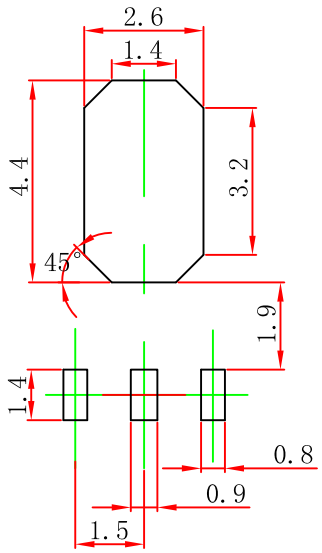


## SOT-89-3L Package Outline Dimensions




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 1.400 | 1.600 | 0.055 | 0.063 |
| b | 0.320 | 0.520 | 0.013 | 0.020 |
| b1 | 0.400 | 0.580 | 0.016 | 0.023 |
| c | 0.350 | 0.440 | 0.014 | 0.017 |
| D | 4.400 | 4.600 | 0.173 | 0.181 |
| D1 | 1.550 REF. | | 0.061 REF. | |
| E | 2.300 | 2.600 | 0.091 | 0.102 |
| E1 | 3.940 | 4.250 | 0.155 | 0.167 |
| e | 1.500 TYP. | | 0.060 TYP. | |
| e1 | 3.000 TYP. | | 0.118 TYP. | |
| L | 0.900 | 1.200 | 0.035 | 0.047 |

## SOT-89-3L Suggested Pad Layout




Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

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