TECH PUBLIC
台舟电子

# TP282CA9VT3

## High Voltage Low Power Consumption LDO

WWW.TECHPUBLIC.COM

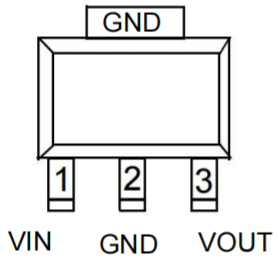
## Features

- 1.5μA Current at no Load(TYP.)
- ±2% Output Accuracy
- 300mA Output Current
- Current Limit Protection

## Applications

- Industrial Controls
- Home Automation
- Wireless power tools
- Motor driver and control board

## PIN CONFIGURATION




**SOT89-3(VT3)**

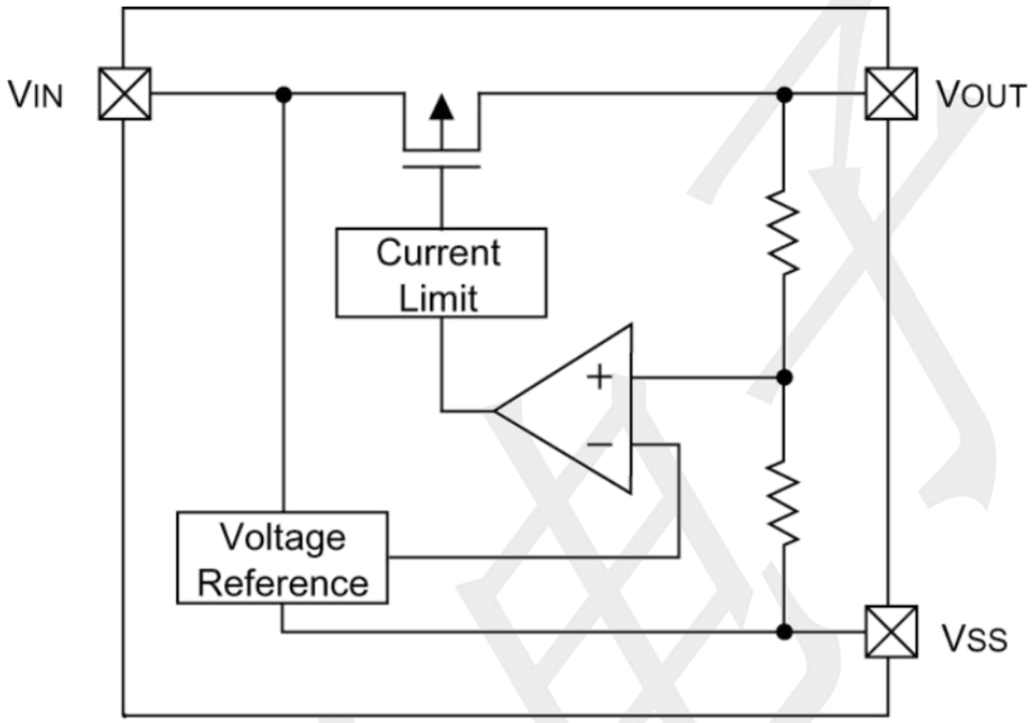
| Pin Number | Pin Name | Pin Function |
|---|---|---|
| SOT89-3 | | |
| 1 | VIN | Input of Supply Voltage |
| 2 | GND | Ground |
| 3 | VOUT | Output of the Regulator |

## Absolute Maximum Ratings

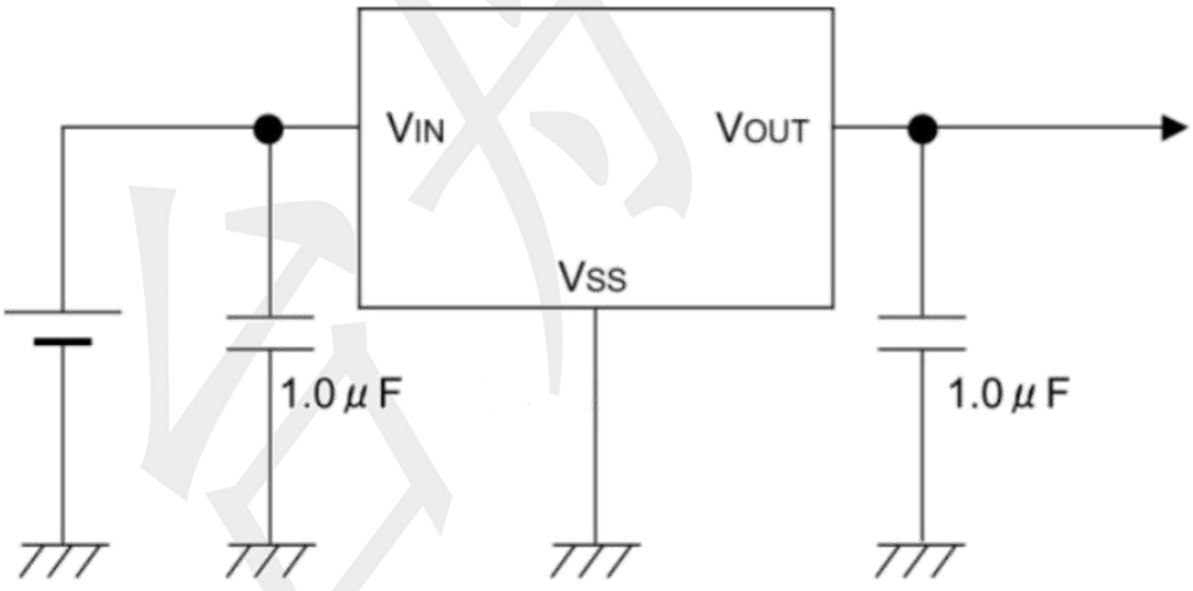
**over operating free-air temperature range (unless otherwise noted)**

| | | MIN | MAX | UNIT |
|---|---|---|---|---|
| VIN | Continuous input voltage range | -0.3 | 35 | V |
| VOUT | Output voltage range | -0.3 | 12 | |
| Current | Maximum output current | Internally limited | | mA |
| Temperature | Operating Temperature, Topr | -40 | +85 | ℃ |
| | Storage, Tstg | -40 | +125 | |
| | Welding temperature and time，Tsolder | +260, 10s | | |
| Pd | Power Dissipation SOT89-3 | 500 | | mW |
| HBM | ESD Susceptibility | 200 | | V |
| MM | | 2000 | | V |

## BLOCK DIAGRAM




## Typical Application Circuit



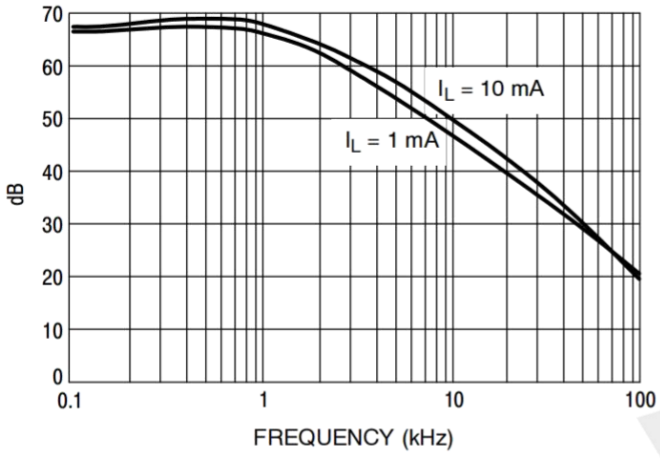
## Electrical Characteristics

( TA=25℃, unless otherwise specified)

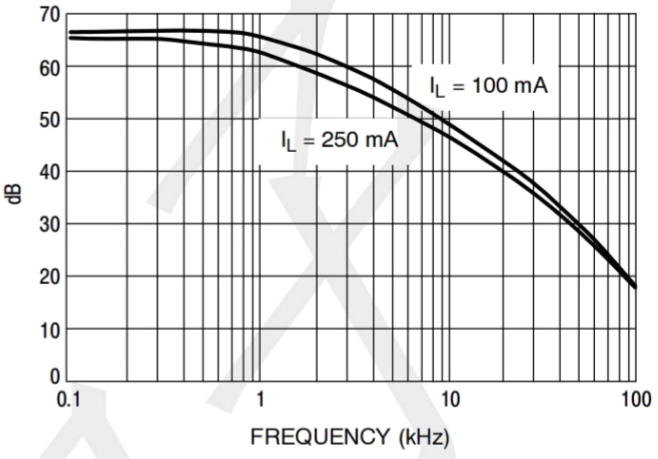
| PARAMETER | SYMBOL | TEST Conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Supply Voltage | $V_{IN}$ | | 2 | -- | 27 | V |
| Output current | $I_{OUT(max)}$ | | 300 | -- | -- | mA |
| DC Output Voltage Accuracy | | $I_{OUT}$ = 0.1mA | -2 | -- | 2 | % |
| Dropout Voltage（$V_{IN}$-$V_{OUT}$） | $V_{OUT}$ = 12V | $I_{OUT}$= 100mA | -- | 250 | -- | mV |
| | | $I_{OUT}$= 300mA | -- | 650 | -- | |
| Ground Current ($I_{OUT}$ = 0mA) | $I_Q$ | $V_{OUT}$ = 12V | -- | 1.5 | 5 | uA |
| Power supply voltage regulation rate | $\frac{\Delta V_{OUT}}{\Delta V_{IN} * V_{OUT}}$ | $I_{OUT}$ =40mA, VIN≤27V | -- | 0.2 | 0.4 | % / V |
| Output Current Limit | $I_{LIM}$ | $V_{OUT}$=0.9× $V_{OUT(NOM)}$ | 350 | -- | -- | mA |
| Power Supply Rejection Ratio | PSRR | $V_{OUT}$ =5V, $I_{OUT}$ =30mA, $V_{IN}$ = 12V, f = 1kHz | -- | 70 | -- | dB |
| Thermal Shutdown Temperature | $T_{SD}$ | $I_{OUT}$ =10mA | -- | 160 | -- | ℃ |
| Thermal Shutdown Hysteresis | $\Delta T_{SD}$ | | -- | 15 | -- | |
| Package Thermal Resistance (Note 1) | SOT89-3 | Thermal Resistance Junction-toAmbient | -- | 120 | -- | ℃/W |

Note: 1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

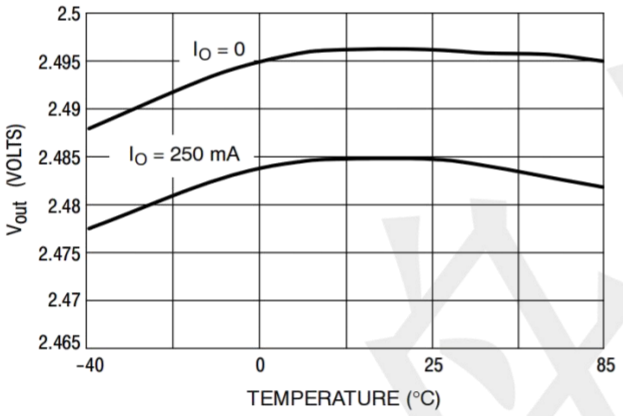
## Performance Characteristics



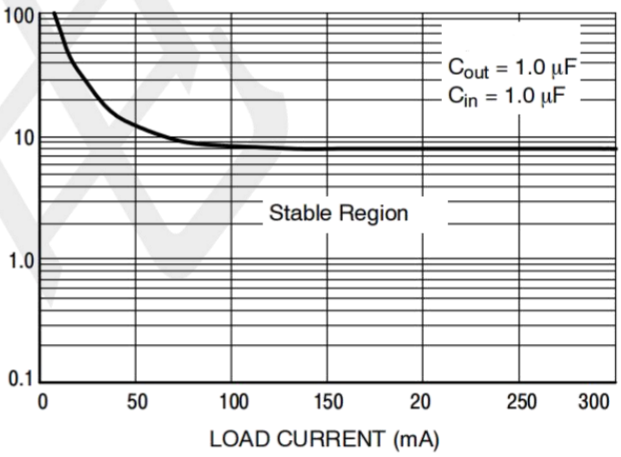

**Ripple Rejection**



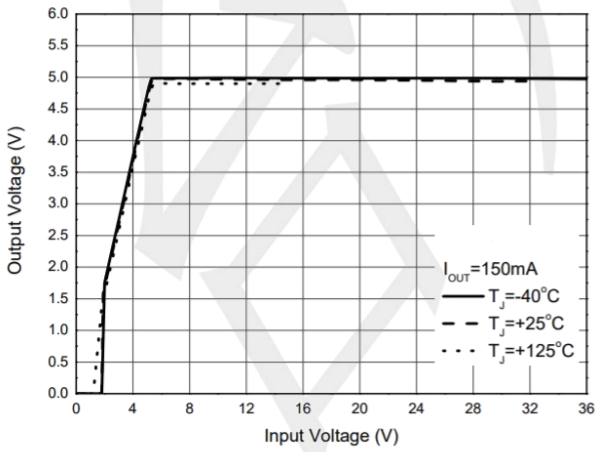

**Ripple Rejection**



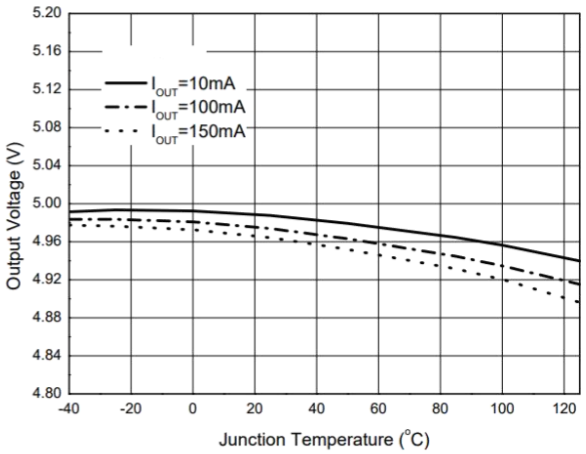

**Output Voltage versus Ambient Temperature**




**Output Voltage vs. Input Voltage**

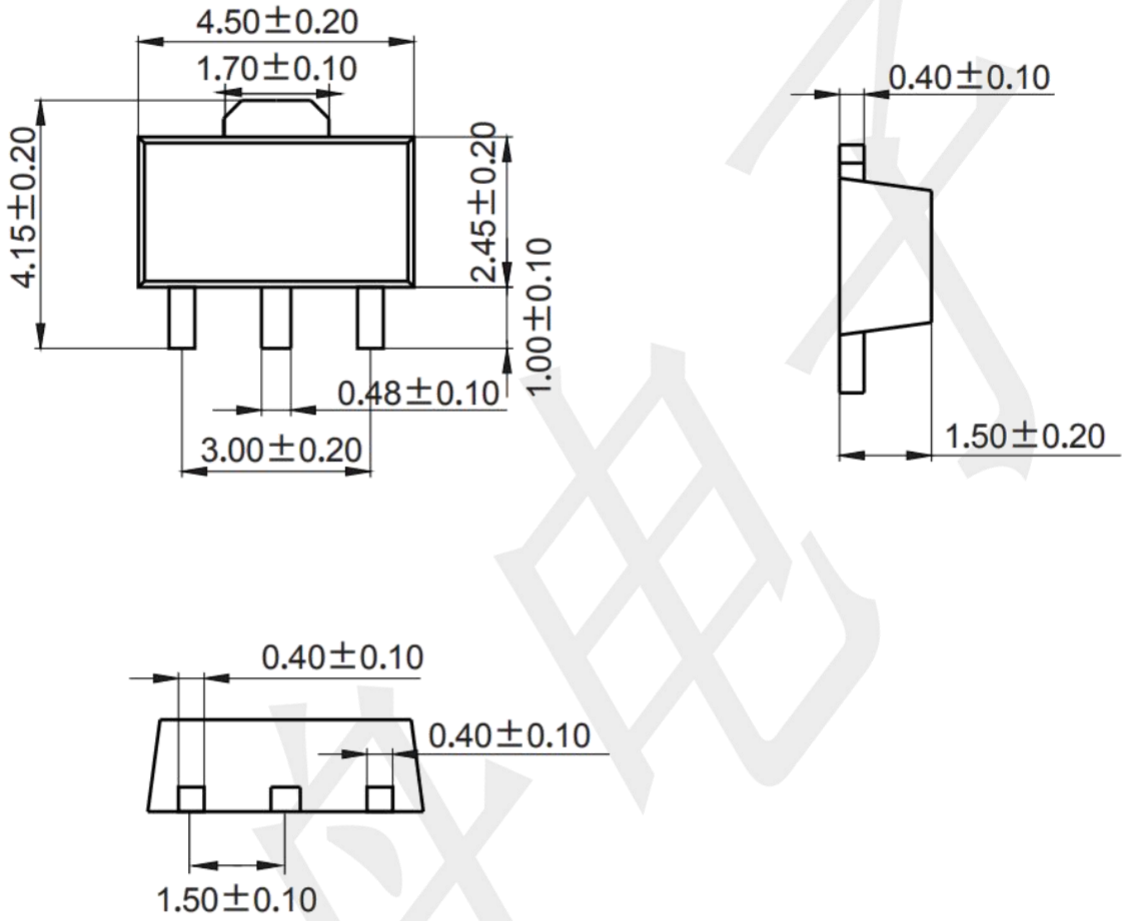



**Output Voltage vs. Junction Temperature**



## Package Outline Dimensions (unit: mm)

**SOT89-3**




## Mounting Pad Layout (unit: mm)