

# TPADP150 Series

## 150 mA CMOS Linear Regulator

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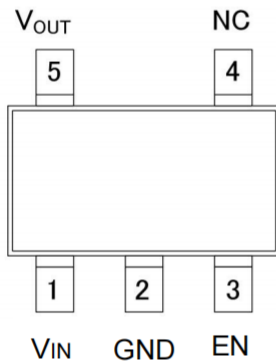
### Features

- 10 $\mu$ A Current at no Load
- $\pm 2\%$  Output Accuracy
- 150mA Output Current
- Current Limit Protection

### Applications

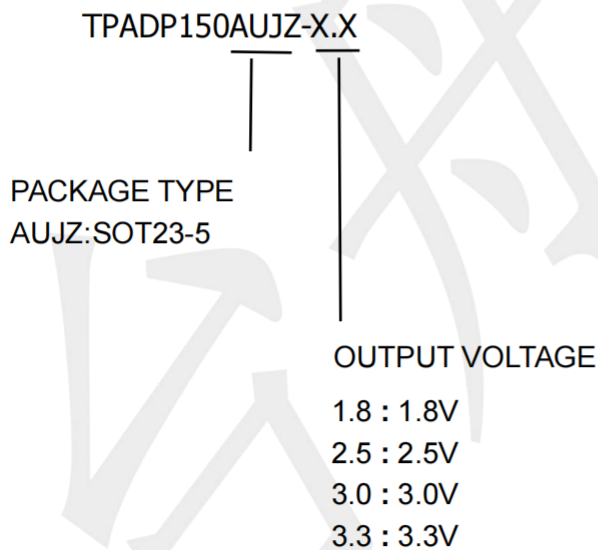
- Industrial Controls
- Home Automation
- Modules (Wireless, Camera, etc.)
- Portable, Battery Powered Equipment

### PIN CONFIGURATION



| Pin Number | Pin Name | Pin Function            |
|------------|----------|-------------------------|
| SOT23-5    |          |                         |
| 1          | VIN      | Input of Supply Voltage |
| 2          | GND      | Ground                  |
| 3          | EN       | Enable Control Input    |
| 4          | NC       | No Internal Connection  |
| 5          | VOUT     | Output of the Regulator |

### Ordering Information



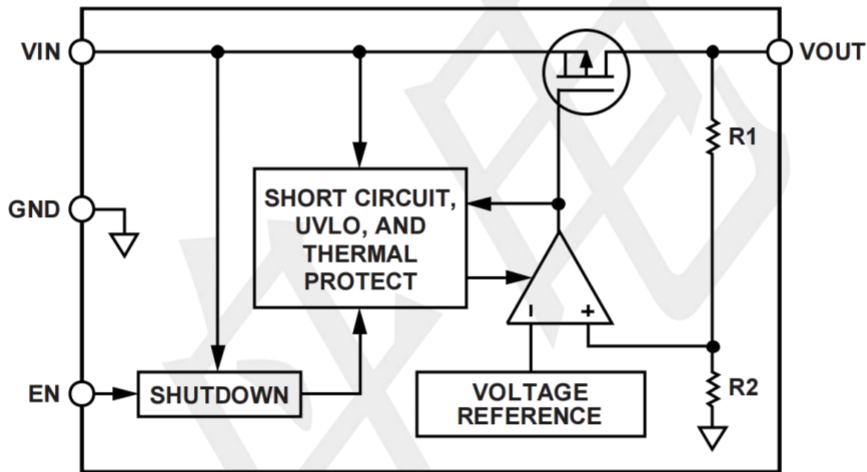
Example: TPADP150AUJZ-2.5  
→ 2.5V Version, in SOT23-5 Package & Tape & Reel Packing Type

### Absolute Maximum Ratings

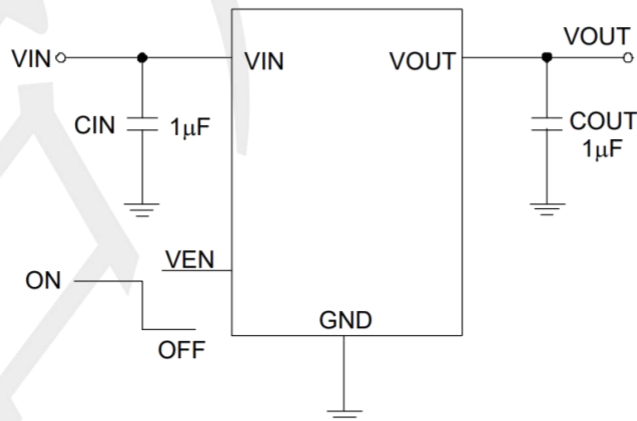
over operating free-air temperature range (unless otherwise noted)

|             |                                   | MIN                | MAX  | UNIT |
|-------------|-----------------------------------|--------------------|------|------|
| VIN         | Continuous input voltage range    | -0.3               | 6.0  | V    |
| VOUT        | Output voltage range              | -0.3               | 6.0  |      |
| EN          | EN pin voltage range              | -0.3               | 6.0  |      |
| IOUT        | Output pin current                | Internally limited |      | mA   |
| Temperature | Operating Temperature Range ,Topr | -40                | +85  | °C   |
|             | Storage, Tstg                     | -40                | +125 |      |

### BLOCK DIAGRAM



### Typical Application Circuit



### Electrical Characteristics

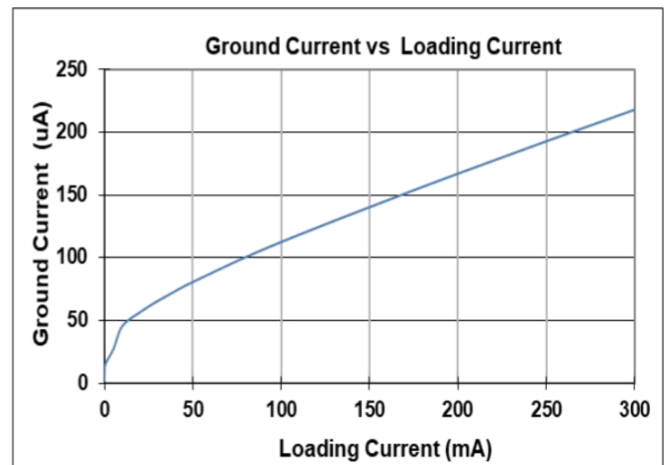
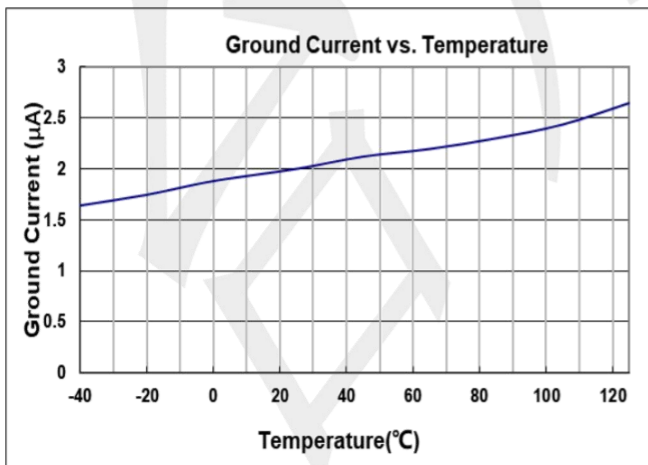
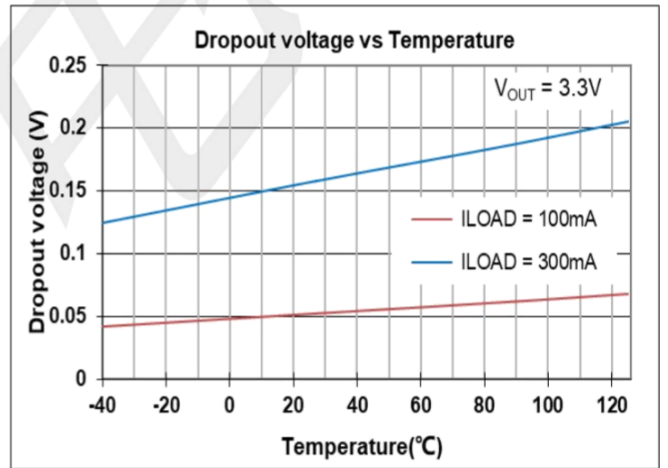
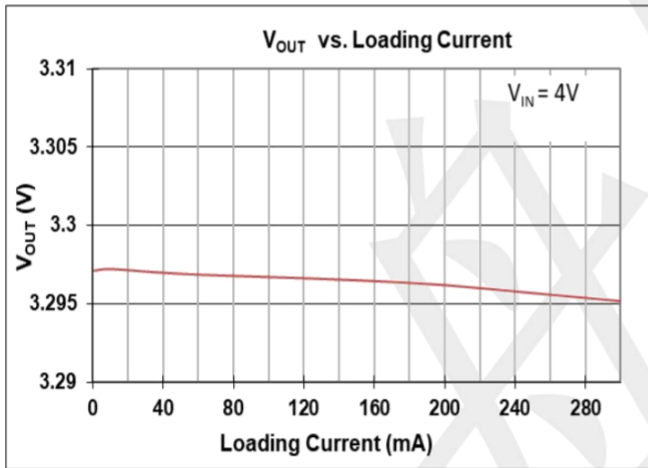
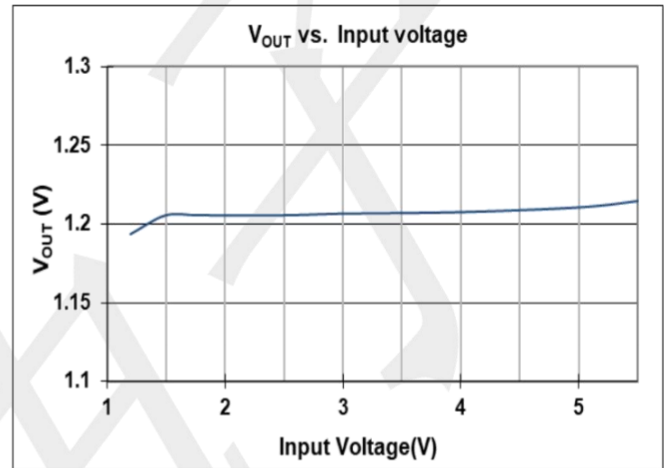
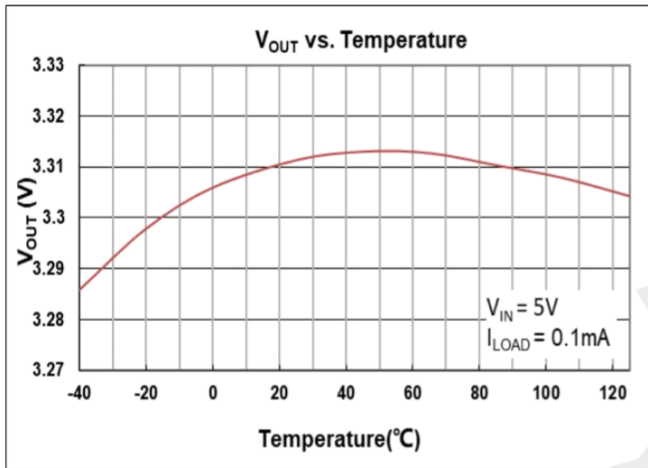
(VIN=15V, VEN=5V, TA=25°C, unless otherwise specified)

| PARAMETER                                  | SYMBOL                                 | TEST Conditions   | MIN | TYP  | MAX | UNIT |
|--|--|---|-----|------|-----|------|
| Supply Voltage                             | VIN                                    |   | 2.0 | --   | 5.5 | V    |
| Output current                             | IOUT                                   |   | 150 | --   | --  | mA   |
| DC Output Voltage Accuracy                 |  | IOUT = 1mA  | -2  | --   | 2   | %    |
| Dropout Voltage (VIN-VOUT)                 | IOUT = 150mA                           | VOUT = 1.8V   | --  | 140  | --  | mV   |
|  |  | VOUT = 2.5V   | --  | 120  | --  |      |
|  |  | VOUT = 3.0V   | --  | 110  | --  |      |
|  |  | VOUT = 3.3V   | --  | 100  | --  |      |
| Ground Current (IOUT = 0mA)                | IQ                                     | VOUT = 3.3V   | --  | --   | 10  | uA   |
| Shutdown Ground Current                    | ISD                                    | VEN = 0V,   | --  | 0.01 | 1   |      |
| VOUT Shutdown Leakage Current              | ILEAK                                  | VOUT = 0V   | --  | 0.01 | 1   |      |
| Enable Threshold Voltage                   | VIH                                    | EN Rising   | 1.0 | --   | --  | V    |
|  | VIL                                    | EN Falling  | --  | --   | 0.4 |      |
| EN Input Current                           | IEN                                    | VEN = 5V  | --  | 10   | 100 | nA   |
| Line Regulation                            | ΔLINE                                  | IOUT = 1mA,<br>2 ≤ VIN ≤ 6V                             | --  | 0.3  | --  | %    |
| Load Regulation                            | ΔLOAD                                  | 10mA ≤ IOUT ≤<br>100mA                                  | --  | 0.3  | --  |      |
| Output Current Limit                       | ILIM                                   | VOUT = 0.9 ×<br>VOUT(NOM)                               | 200 | --   | --  | mA   |
| Power Supply Rejection Ratio               | PSRR                                   | VOUT = 3.3V,<br>IOUT = 40mA,<br>VIN = 5.5V,<br>f = 1kHz | --  | 70   | --  | dB   |
| Package Thermal Resistance θJA<br>(Note 1) | Thermal Resistance Junction-to-Ambient |   | --  | 210  | --  | °C/W |
| Total Power Dissipation TC=25°C            | PDTOT                                  |   | --  | 0.2  | --  | W    |

Note: Test condition: For SOT23-5, the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

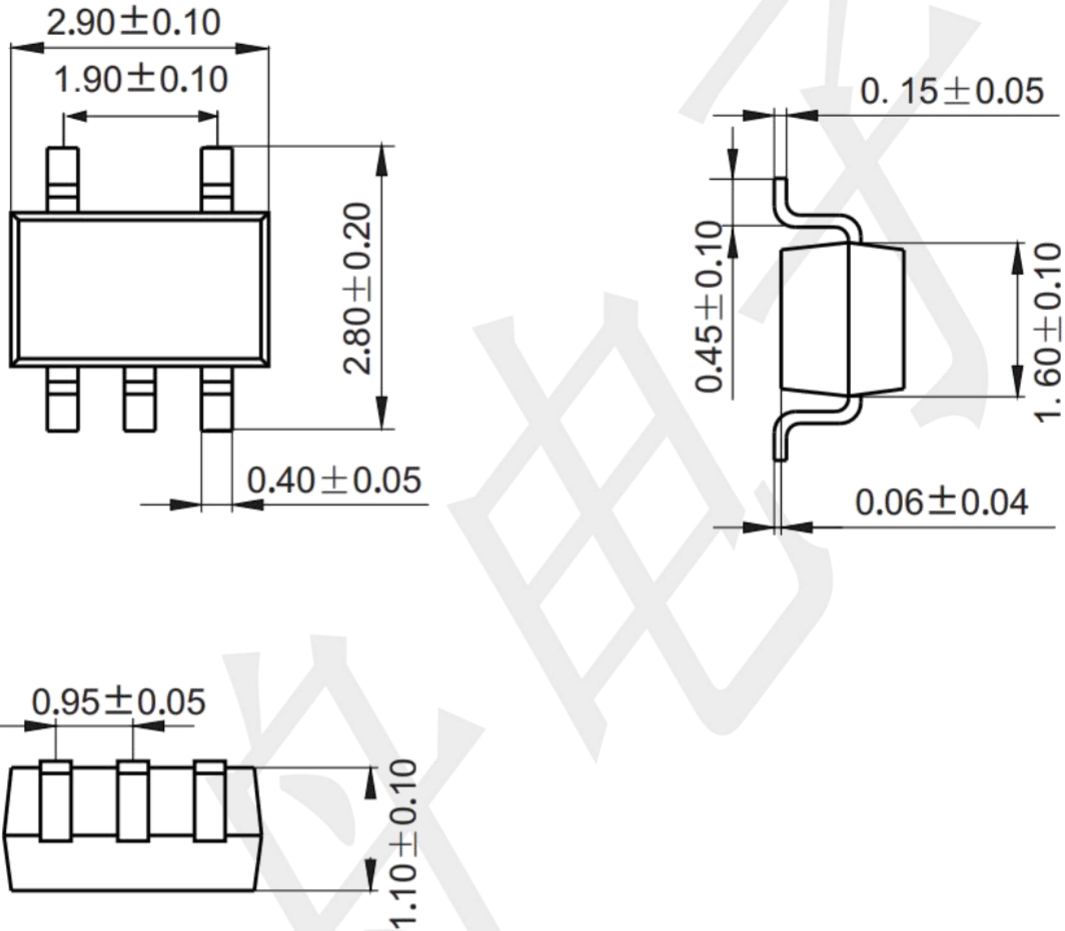
### Typical Operating Characteristics (25 °C, unless otherwise noted)

Unless otherwise specified:  $T_A = 25^\circ\text{C}$ ,  $V_{IN} = V_{O(NOM)} + 1\text{V}$ ,  $C_{OUT} = 1\ \mu\text{F}$ ,  $C_{IN} = 1\ \mu\text{F}$  all voltage options, EN pin tied to  $V_{IN}$ .



### Package Outline Dimensions (unit: mm)

SOT23-5



### Mounting Pad Layout (unit: mm)

