

## Constant Current Regulator

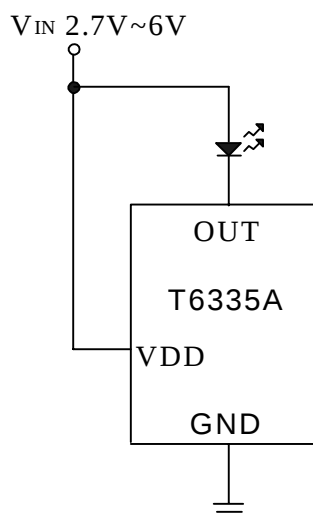
### FEATURES

- Constant Current Regulator
- Constant Current Option :  
210/225/240/260/280/300/320/350 mA
- Low Dropout Voltage
- Low 0.05uA Shutdown Supply Current
- SOT-89 and TO-252 Package
- ESD Human Body Mode Over 5KV
- 2.7V to 6V Supply Voltage Range
- Build in Thermat Protect 160 °C

### APPLICATIONS

- Flash Light
- Lighting
- Portable Communication Devices
- Handheld Electronics
- DC/DC LED driver

### TYPICAL APPLICATION CIRCUITS



### GRNERAL DESCRIPTION

The T6335A low-dropout bias supply for white LED is a high-performance used in conventional white LED designs.

The T6335A much lower bias variation with supply voltage variation, significantly lower dropout voltage and Low Shutdown Supply Current, and in some applications, significantly improved efficiency from DC 2.7V to 6V. The T6335A is available in SOT-89 and TO-252 package.

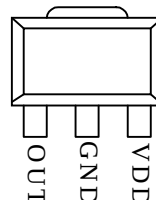
### PART NUMBER EXAMPLES

| Part no.     | Current | Package type |
|--------------|---------|--------------|
| T6335A-350AX | 350mA   | SOT-89       |
| T6335A-350AU | 350mA   | TO-252       |
| T6335A-280AX | 280mA   | SOT-89       |
| T6335A-280AU | 280mA   | TO-252       |

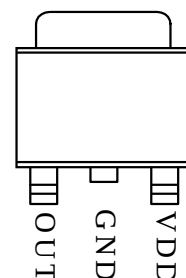
### PIN ARRANGEMENT

(Top view)

SOT-89



TO-252



**PIN DESCRIPTION**

| SYMBOL | Pin no. | DESCRIPTION             |
|--------|---------|-------------------------|
| OUT    | 1       | LED Cathode Connection. |
| VSS    | 2       | Ground                  |
| VDD    | 3       | Power supply            |

**ABSOLUTE MAXIMUM RATINGS**

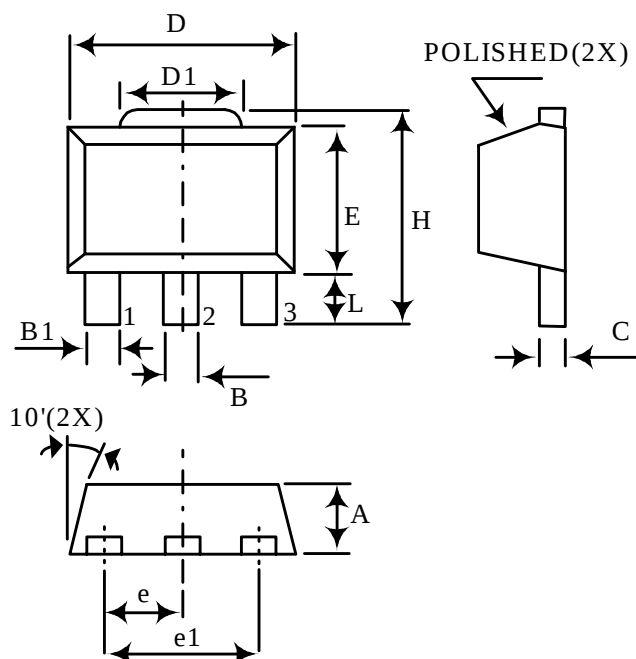
| Parameter                                               | Symbol            | Value       | Unit |
|---------------------------------------------------------|-------------------|-------------|------|
| Voltage on any pin relative to GND                      | V <sub>IN</sub>   | -0.3 to 6   | V    |
| Operating Temperature Rang                              | T <sub>A</sub>    | -40 to +85  | °C   |
| Maximum Soldering Temperature (at leads, 10 sec)        | T <sub>LEAD</sub> | 300         | °C   |
| Storage Temperature Rang                                | T <sub>S</sub>    | -65 to +150 | °C   |
| Continuous Power Dissipation ( T <sub>A</sub> = +70°C ) |                   | 1           | W    |

**Electrical Characteristics**

(T<sub>A</sub> = -40 to 85°C unless otherwise noted. Typical values are at T<sub>A</sub> = 25°C)

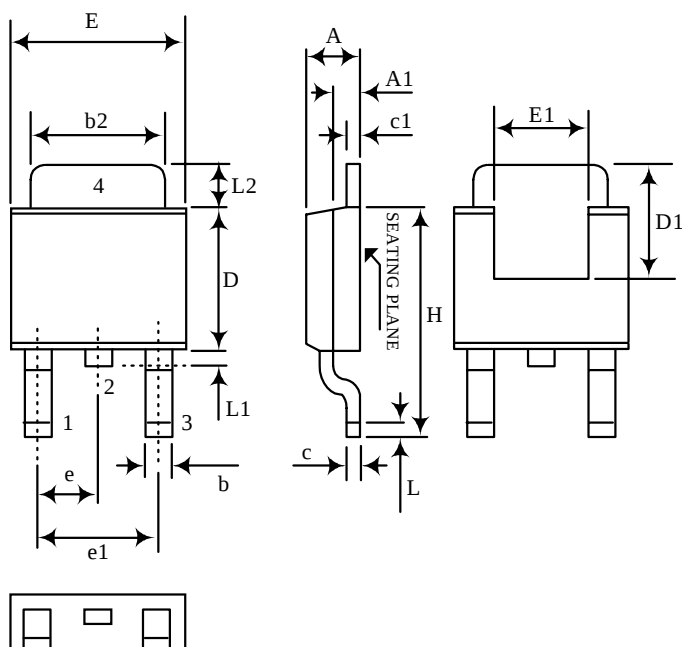
| Symbol           | Description                     | Conditions                     | Min. | Typ. | Max | Unit |
|------------------|---------------------------------|--------------------------------|------|------|-----|------|
| V <sub>DD</sub>  | Operating voltage range         | VDD is power supply input      | 2.7  |      | 6   | V    |
| I <sub>LED</sub> | Maximum LED sink current        | T6335A-350                     |      | 350  |     | mA   |
|                  |                                 | T6335A-320                     |      | 320  |     | mA   |
|                  |                                 | T6335A-300                     |      | 300  |     | mA   |
|                  |                                 | T6335A-280                     |      | 280  |     | mA   |
|                  |                                 | T6335A-260                     |      | 260  |     | mA   |
|                  |                                 | T6335A-240                     |      | 240  |     | mA   |
|                  |                                 | T6335A-225                     |      | 225  |     | mA   |
|                  |                                 | T6335A-210                     |      | 210  |     | mA   |
| T <sub>TP</sub>  | Thermat Protect                 |                                |      | 160  |     | °C   |
| I <sub>LS</sub>  | LED leakage current in shutdown | VDD=GND, T <sub>A</sub> =+25°C |      | 0.01 | 1   | uA   |

**PACKAGE DIMENSIONS**  
**SOT-89**



| Symbol | Dimension in mm |      |
|--------|-----------------|------|
|        | Min.            | Max. |
| A      | 1.40            | 1.60 |
| B      | 0.44            | 0.56 |
| B1     | 0.36            | 0.48 |
| C      | 0.35            | 0.44 |
| D      | 4.40            | 4.60 |
| D1     | 1.35            | 1.83 |
| E      | 2.29            | 2.60 |
| H      | 3.94            | 4.25 |
| e      | 1.50 BSC        |      |
| e1     | 3.00 BSC        |      |
| L      | 0.89            | 1.2  |

**TO-252**



| Symbol | Dimension in inch |       |
|--------|-------------------|-------|
|        | Min.              | Max.  |
| A      | 0.086             | 0.094 |
| A1     | 0.040             | 0.050 |
| b      | 0.024 TYP.        |       |
| b2     | 0.205             | 0.215 |
| c      | 0.018             | 0.023 |
| c1     | 0.018             | 0.023 |
| D      | 0.210             | 0.220 |
| E      | 0.250             | 0.265 |
| D1     | 0.180             | -     |
| E1     | 0.150             | -     |
| e      | 0.090 BSC.        |       |
| e1     | 0.180 BSC.        |       |
| H      | 0.370             | 0.410 |
| L      | 0.020             | -     |
| L1     | 0.025             | 0.040 |
| L2     | 0.060             | 0.080 |