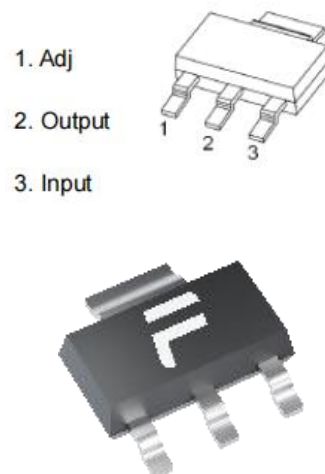
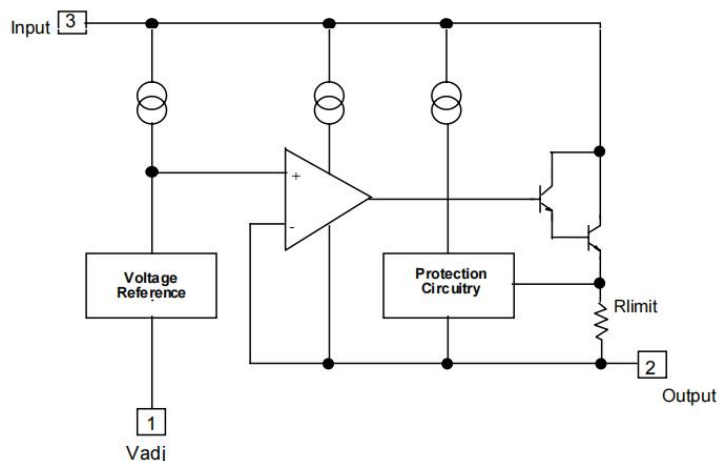


## SOT-223-3L Three Terminal Adjustable Regulator 三端可调稳压 IC



### ■ Features 特点



### ■ Absolute Maximum Ratings 最大额定值

( $T_A = 25^\circ\text{C}$  unless otherwise noted 如无特殊说明, 温度为  $25^\circ\text{C}$ )

| Characteristic 特性参数                         | Symbol 符号       | Rat 额定值                    | Unit 单位                   |
|---------------------------------------------|-----------------|----------------------------|---------------------------|
| Input-Output Voltage Differential 输入输出电压差   | $V_i - V_o$     | 40                         | V                         |
| Output Voltage Range 输出电压范围                 | $V_o$           | 1.2~37                     | V                         |
| Thermal Resistance Junction-Case 结壳热阻       | $R_{\theta JC}$ | 5                          | $^\circ\text{C}/\text{W}$ |
| Solder Temperature 焊接温度/时间                  | $T_d$           | 230/10                     | $^\circ\text{C}/\text{S}$ |
| Junction and Storage Temperature<br>结温和储藏温度 | $T_J, T_{stg}$  | -40to+125 $^\circ\text{C}$ |                           |

### ■ Device Marking 产品打标

LM317-2AF=LM317

## ■ Electrical Characteristics 电特性

( $V_O - V_I = 5V$ ,  $I_O = 0.5A$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $I_{MAX} = 1.5A$ ,  $P_{MAX} = 20W$ , unless otherwise specified)

| Parameter                                    | Symbol                  | Conditions                                                                                |                    | Value |      |      | Unit          |
|----------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------|--------------------|-------|------|------|---------------|
|                                              |                         |                                                                                           |                    | Min   | Typ  | Max  |               |
| Line Regulation                              | $\Delta V_O$            | $V_i - V_o = 3 \text{ to } 40V$                                                           | $T_J = 25^\circ C$ |       |      | 0.04 | %V            |
|                                              |                         |                                                                                           |                    |       |      | 0.07 |               |
| Load Regulation                              | $\Delta V_O$            | $V_o \leq 5V$<br>$I_o = 10mA \sim I_{MAX} 1.5A$                                           | $T_J = 25^\circ C$ |       |      | 25   | mV            |
|                                              |                         |                                                                                           |                    |       |      | 70   |               |
|                                              |                         | $V_o \geq 5V$<br>$I_o = 10mA \sim I_{MAX} 1.5A$                                           | $T_J = 25^\circ C$ |       |      | 0.5  | %V            |
|                                              |                         |                                                                                           |                    |       |      | 1.5  |               |
| Adjustment Pin Current                       | $I_{ADJ}$               | $T_J = 25^\circ C$                                                                        |                    |       |      | 100  | $\mu A$       |
| Adjustment Pin Current                       | $\Delta I_{ADJ}$        | $V_i - V_o = 2.5 \text{ to } 40V$<br>$I_o = 10mA \sim I_{MAX} 1.5A$                       |                    |       |      | 5    | $\mu A$       |
| Output Voltage Drift                         | $\Delta V / \Delta T$   | $I_o = 5mA$                                                                               |                    |       | -0.8 |      | $mV/^\circ C$ |
| Reference Voltage<br>(between pin3 and pin1) | $V_{REF}$               | $V_i - V_o = 2.5 \text{ to } 40V$<br>$I_o = 10mA \sim I_{MAX} 1.5A$<br>$P_D \leq P_{MAX}$ |                    | 1.2   | 1.25 | 1.3  | V             |
| Output Voltage<br>Temperature Stability      | $\Delta V_O / \Delta T$ |                                                                                           |                    |       | 1    |      | %             |
| Minimum Load Current                         | $I_{O(min)}$            | $V_i - V_o = 40V$                                                                         |                    |       |      | 10   | mA            |
| Maximum Load Current                         | $I_{O(max)}$            | $V_i - V_o \leq 15V$ , $P_D < P_{MAX}$                                                    |                    | 1.5   |      |      | A             |
|                                              |                         | $V_i - V_o = 40V$ , $P_D < P_{MAX}$ , $T_J = 25^\circ C$                                  |                    |       | 0.4  |      |               |

■ Application Circuits 应用电路

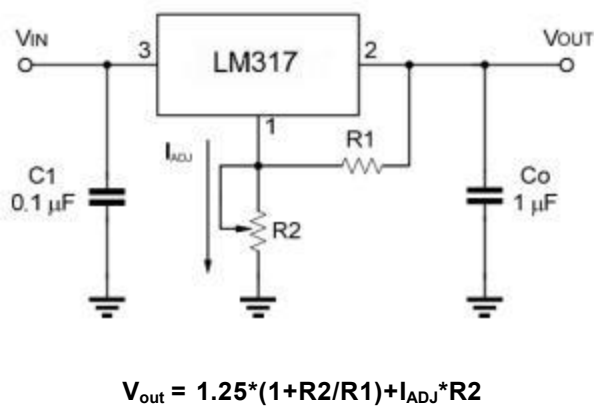


Fig.1 Programmable Voltage Regulator

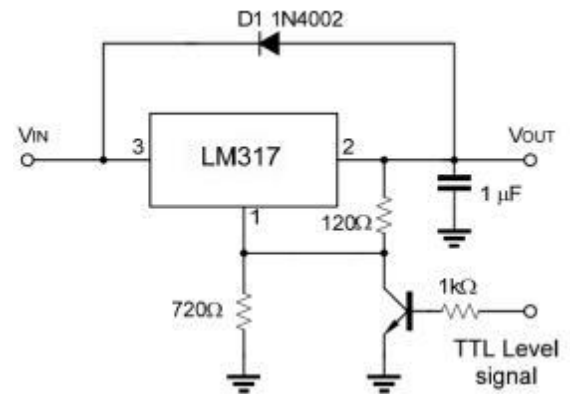


Fig.2 Regulator with ON-off controll

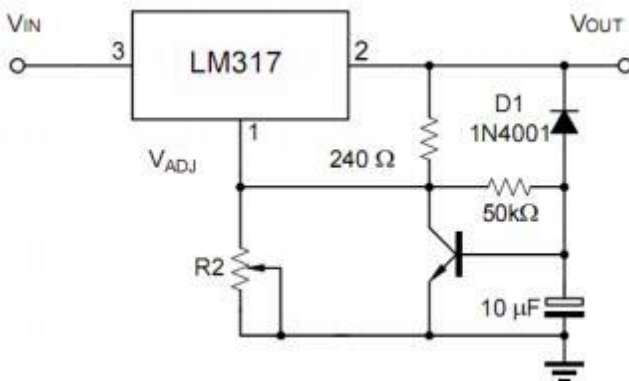


Fig.3 Soft Start Application

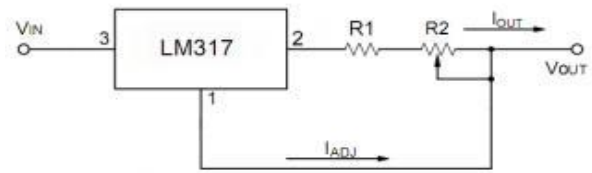


Fig.4. Constant Current Application

■ Typical Characteristics 典型特性曲线

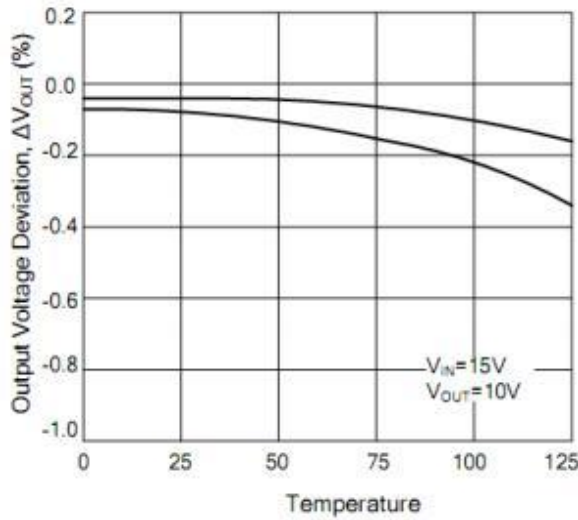


Fig.1. Load Regulation vs. temperature

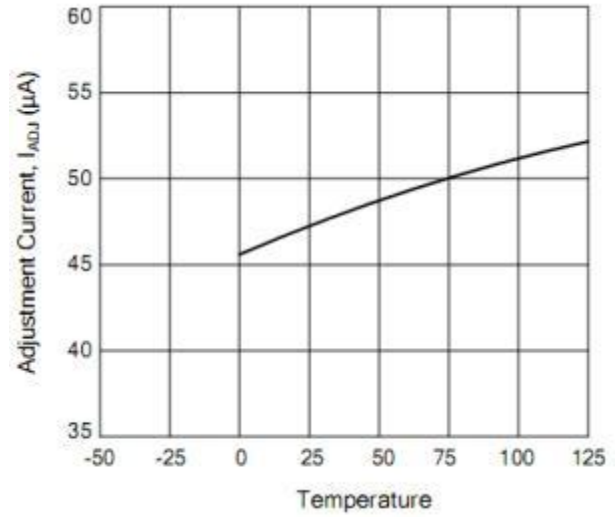


Fig.2. Adjustment Current vs. Temperature

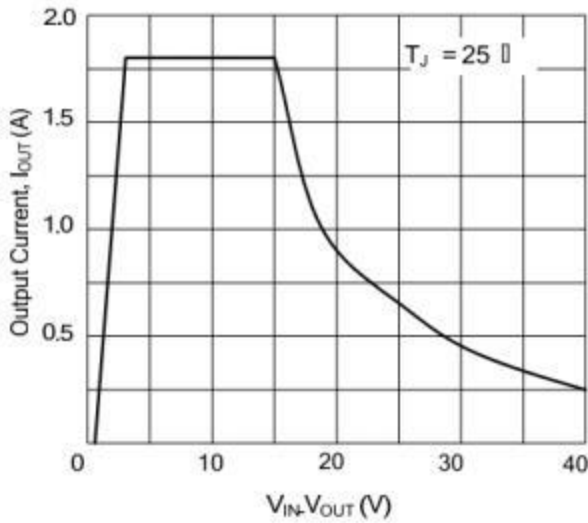


Fig.3. Currents Limit

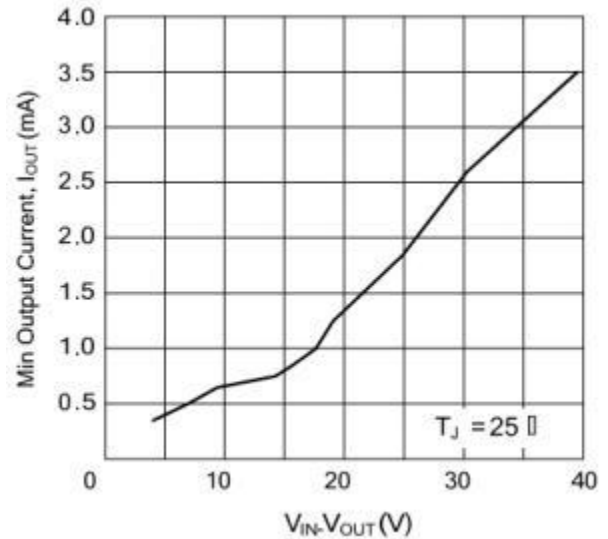
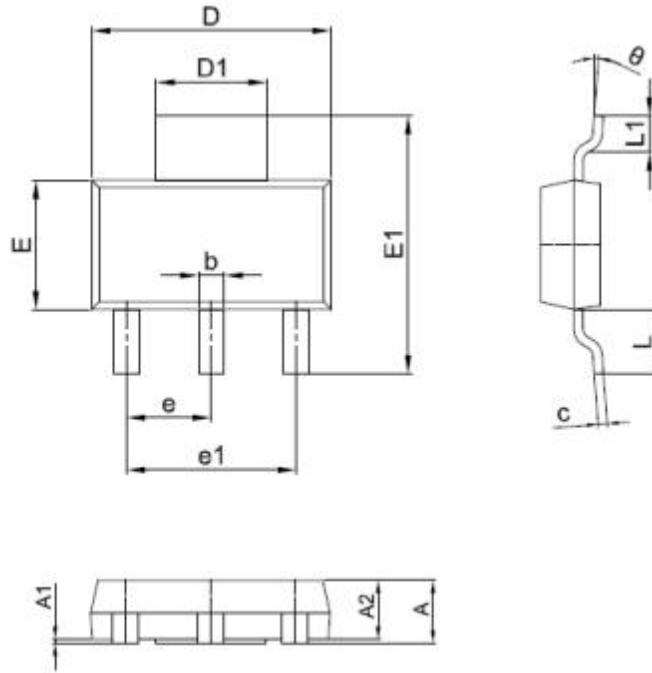


Fig.4. Minimum Operating Current

■ SOT-223-3L Dimension 外形封装尺寸 (Unit:mm)



| Symbol   | Min. | Typ. | Max. |
|----------|------|------|------|
| A        | 1.52 | 1.62 | 1.80 |
| A1       | 0.00 | 0.05 | 0.10 |
| A2       | 1.50 | 1.60 | 1.70 |
| b        | 0.65 | 0.70 | 0.75 |
| c        | 0.20 | 0.25 | 0.30 |
| D        | 6.40 | 6.50 | 6.60 |
| D1       | 2.90 | 3.00 | 3.10 |
| E        | 3.30 | 3.50 | 3.70 |
| E1       | 6.85 | 7.00 | 7.15 |
| e        | 2.20 | 2.30 | 2.40 |
| e1       | 4.40 | 4.60 | 4.80 |
| L        | 1.65 | 1.75 | 1.85 |
| L1       | 0.90 | 1.00 | 1.10 |
| $\theta$ | 0°   | 5°   | 10°  |