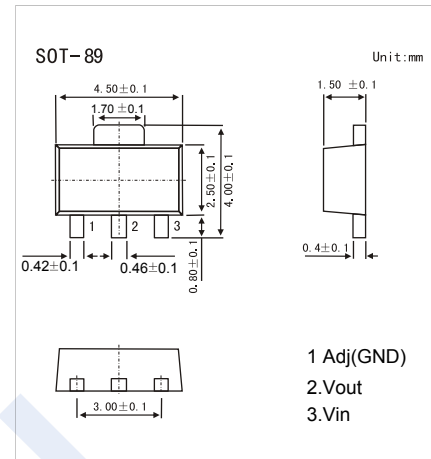


## Low Dropout Linear Regulator

### AMS1117-X.X (KMS1117-X.X)

#### ■ Features

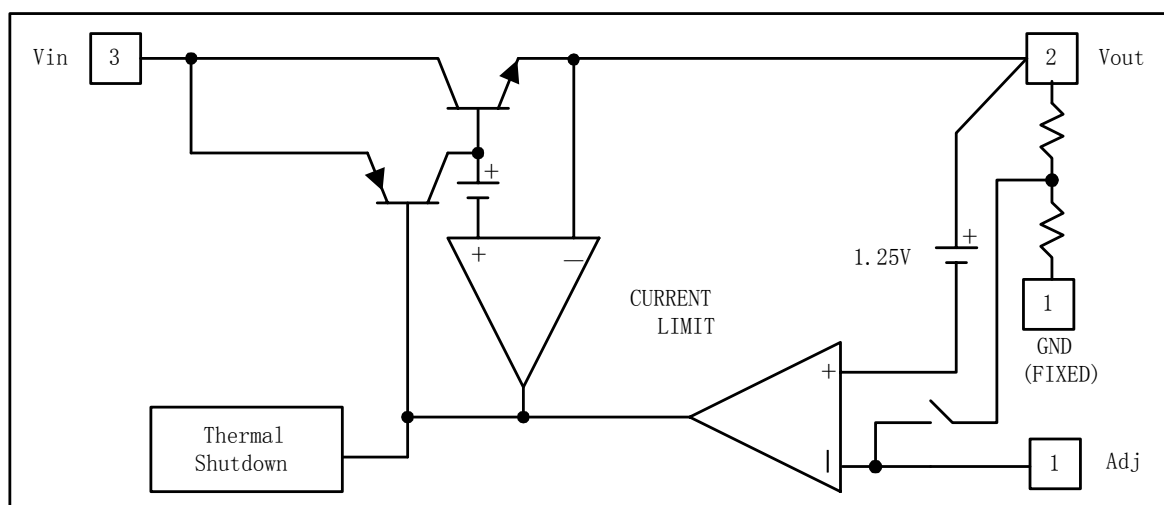
- Low dropout voltage
- Load regulation: 0.2% typical
- Optimized for Low Voltage
- On-chip thermal limiting
- 0.8A Adjustable/Fixed Low Dropout Linear Regulator
- Three-terminal adjustable or fixed low drop out  
1.2V, 1.5V, 1.8V, 1.9V, 2.5V, 3.3V, 5V. Regulators



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                            | Symbol   | Rating             | Unit             |
|--------------------------------------|----------|--------------------|------------------|
| Maximum Input Voltage                | $V_{in}$ | 18                 | V                |
| Power Dissipation                    | $P_D$    | Internally Limited |                  |
| Operating Junction Temperature Range | $T_J$    | 150                | $^\circ\text{C}$ |
| Storage Temperature                  | $T_{ST}$ | -65 to +150        | $^\circ\text{C}$ |

#### ■ Block Diagram



## Low Dropout Linear Regulator

## AMS1117-X.X (KMS1117-X.X)

## ■ Electrical Characteristics Ta = 25°C

| Parameter                               |          | Testconditions   | Min   | Typ   | Max   | Unit |
|---|----------|--|-------|-------|-------|------|
| Reference Voltage                       | Vref     | AMS1117-ADJ 10mA ≤ Iout ≤ 800mA, 1.5V ≤ Vin-Vout ≤ 12V | 1.225 | 1.250 | 1.275 | V    |
| Output Voltage                          | Vout     | AMS1117-1.2 0 ≤ Iout ≤ 800mA, 2.6V ≤ Vin-Vout ≤ 12V    | 1.175 | 1.200 | 1.225 | V    |
|   |          | AMS1117-1.5 0 ≤ Iout ≤ 800mA, 2.9V ≤ Vin-Vout ≤ 12V    | 1.470 | 1.500 | 1.530 | V    |
|   |          | AMS1117-1.8 0 ≤ Iout ≤ 800mA, 3.2V ≤ Vin-Vout ≤ 12V    | 1.764 | 1.800 | 1.836 | V    |
|   |          | AMS1117-1.9 0 ≤ Iout ≤ 800mA, 3.3V ≤ Vin-Vout ≤ 12V    | 1.862 | 1.900 | 1.938 | V    |
|   |          | AMS1117-2.5 0 ≤ Iout ≤ 800mA, 3.9V ≤ Vin-Vout ≤ 12V    | 2.450 | 2.500 | 2.550 | V    |
|   |          | AMS1117-3.3 0 ≤ Iout ≤ 800mA, 4.75V ≤ Vin-Vout ≤ 12V   | 3.234 | 3.300 | 3.366 | V    |
|   |          | AMS1117-5.0 0 ≤ Iout ≤ 800mA, 6.5V ≤ Vin-Vout ≤ 12V    | 4.900 | 5.000 | 5.100 | V    |
| Line Regulation                         | ΔVout    | AMS1117-ADJ Iout=10mA, 1.5V ≤ Vin-Vout ≤ 13.775V       |       | 0.035 | 0.2   | %    |
|   |          | AMS1117-1.2 Iout=10mA, 2.6V ≤ Vin-Vout ≤ 12V           |       | 9     | 12    | mV   |
|   |          | AMS1117-1.5 Iout=10mA, 2.9V ≤ Vin-Vout ≤ 12V           |       | 9     | 12    | mV   |
|   |          | AMS1117-1.8 Iout=10mA, 3.2V ≤ Vin-Vout ≤ 12V           |       | 9     | 12    | mV   |
|   |          | AMS1117-1.9 Iout=10mA, 3.3V ≤ Vin-Vout ≤ 12V           |       | 9     | 12    | mV   |
|   |          | AMS1117-2.5 Iout=10mA, 3.9V ≤ Vin-Vout ≤ 12V           |       | 9     | 12    | mV   |
|   |          | AMS1117-3.3 Iout=10mA, 4.75V ≤ Vin-Vout ≤ 12V          |       | 9     | 12    | mV   |
|   |          | AMS1117-5.0 Iout=10mA, 6.5V ≤ Vin-Vout ≤ 12V           |       | 9     | 12    | mV   |
| Load Regulation                         | ΔVout    | AMS1117-ADJ Vin-Vout=3V, 10mA ≤ Iout ≤ 800mA           |       | 0.2   | 0.4   | %    |
|   |          | AMS1117-1.2 Vin=2.6V, 0 ≤ Iout ≤ 800mA                 |       | 3     | 10    | mV   |
|   |          | AMS1117-1.5 Vin=2.9V, 0 ≤ Iout ≤ 800mA                 |       | 3     | 10    | mV   |
|   |          | AMS1117-1.8 Vin=3.2V, 0 ≤ Iout ≤ 800mA                 |       | 3     | 10    | mV   |
|   |          | AMS1117-1.9 Vin=3.3V, 0 ≤ Iout ≤ 800mA                 |       | 3     | 10    | mV   |
|   |          | AMS1117-2.5 Vin=3.9V, 0 ≤ Iout ≤ 800mA                 |       | 3     | 10    | mV   |
|   |          | AMS1117-3.3 Vin=4.75V, 0 ≤ Iout ≤ 800mA                |       | 3     | 10    | mV   |
|   |          | AMS1117-5.0 Vin=6.5V, 0 ≤ Iout ≤ 800mA                 |       | 3     | 10    | mV   |
| Dropout Voltage                         | Vin-Vout | AMS1117-XXX ΔVout, ΔVref=1%, Iout=100mA                |       | 1.11  | 1.2   | V    |
|   |          | AMS1117-XXX ΔVout, ΔVref=1%, Iout=500mA                |       | 1.18  | 1.25  | V    |
|   |          | AMS1117-XXX ΔVout, ΔVref=1%, Iout=800mA                |       | 1.26  | 1.3   | V    |
| Current Limit                           | Ilimit   | AMS1117-XXX Vin-Vout = 5V, Tj=25°C                     | 1.25  | 1.4   | 1.6   | A    |
| Minimum Load Current                    |          | AMS1117-XXX AMS1117-ADJ                                |       | 5     | 10    | mA   |
| Quiescent current                       | Iq       | AMS1117-1.2 Vin-Vout=1.25V                             |       | 4     | 8     | mA   |
|   |          | AMS1117-1.5 Vin-Vout=1.25V                             |       | 4     | 8     | mA   |
|   |          | AMS1117-1.8 Vin-Vout=1.25V                             |       | 4     | 8     | mA   |
|   |          | AMS1117-1.9 Vin-Vout=1.25V                             |       | 4     | 8     | mA   |
|   |          | AMS1117-2.5 Vin-Vout=1.25V                             |       | 4     | 8     | mA   |
|   |          | AMS1117-3.3 Vin-Vout=1.25V                             |       | 4     | 8     | mA   |
|   |          | AMS1117-5.0 Vin-Vout=1.25V                             |       | 4     | 8     | mA   |
| Adjust Pin Current (Adjustable Version) | Iadj     |  |       | 55    | 120   | μA   |
| Adjust Pin Current Change               | Ichange  |  |       | 0.2   |       | μA   |

## ■ Marking

|         |          |
|---------|----------|
| Marking | 1117-X.X |
|---------|----------|

## Low Dropout Linear Regulator

## AMS1117-X.X (KMS1117-X.X)

## ■ Typical Characteristics

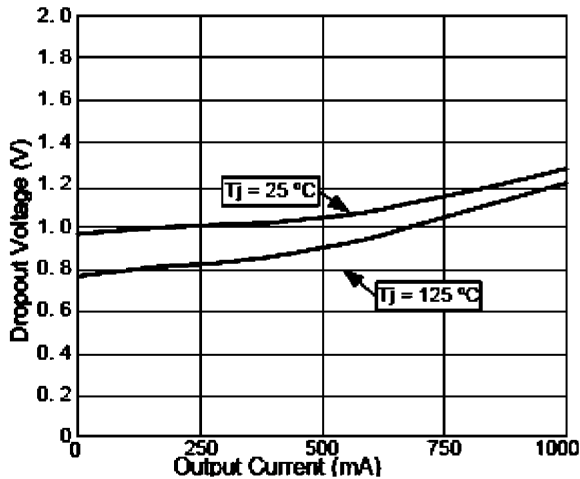


Fig.1 Dropout Voltage vs Output Current

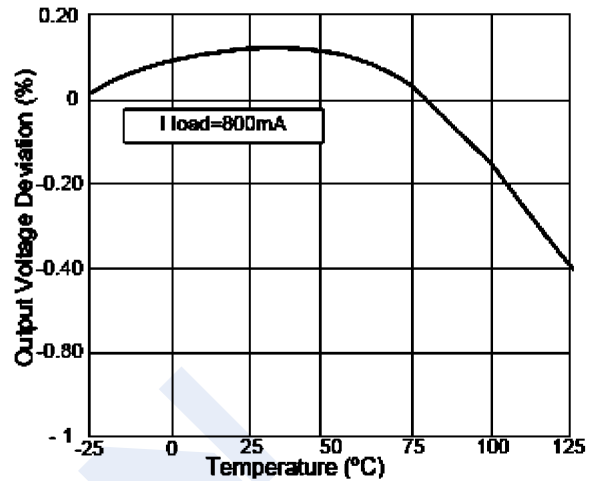


Fig.2 Load Regulation vs Temperature

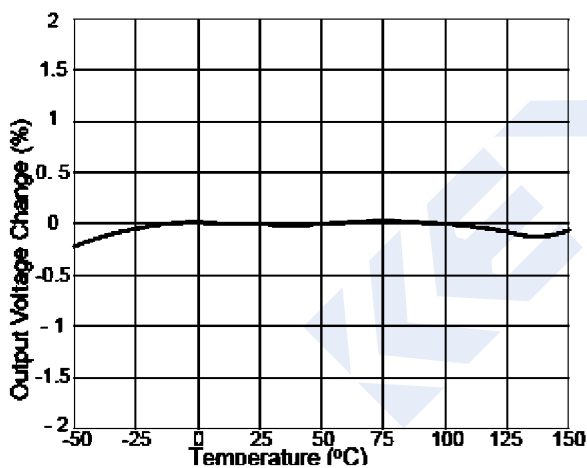


Fig.3 Percent Change in Output Voltage vs Temperature

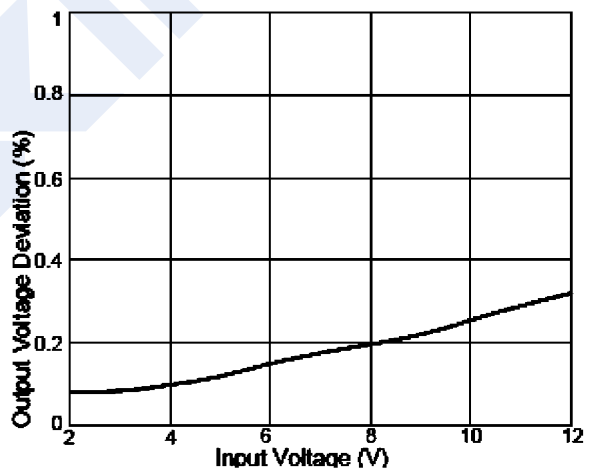


Fig.4 Line Regulation

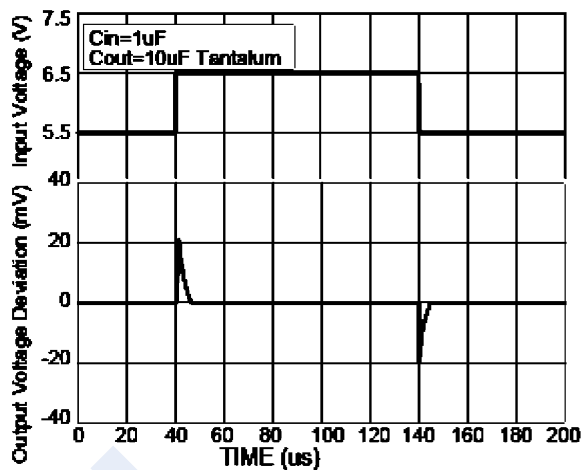


Fig.5 Line Transient Response

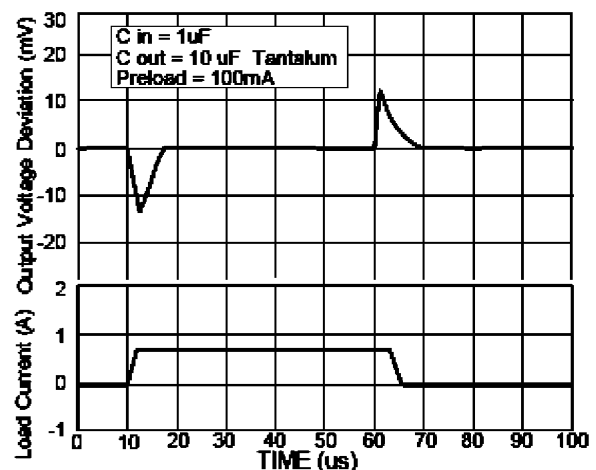


Fig.6 Load Transient Response