



TX6218

300mA Low Power LDO

<http://www.txsemi.com>

Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- Low Quiescent Current: 5uA at 6V
- Output voltage accuracy: tolerance $\pm 2\%$

Applications

- Battery-powered equipment
- Reference voltage sources
- Cameras, video cameras
- Portable AV systems
- Mobile phones
- Portable games

General Description

TX6218 series are a highly precise, lower consumption, 3 terminal, positive voltage regulators manufactured using CMOS and laser trimming technologies. The series provides large currents with a significantly small dropout voltage .

The TX6218 consists of a current limiter circuit, a driver transistor, a precision reference voltage and an error correction circuit. The series is

compatible with low ESR ceramic capacitors. The current limiter's foldback circuit operates as a short circuit protection as well as the output current limiter for the output pin. Output voltages are internally by laser trimming technologies. It is selectable in 0.1V increments within a range of 1.5V to 3.6V. TX6218 series are available in SOT-23 package.

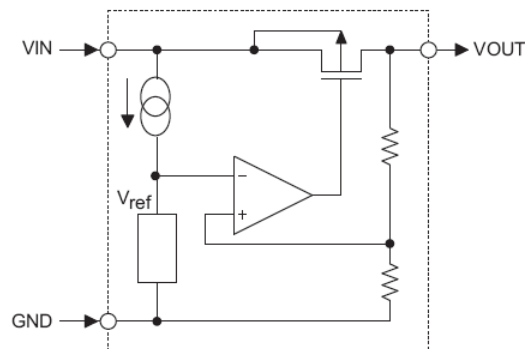
Order Information

TX6218-①②③④

| Designator | Symbol | Description |
|------------|---------|--------------------------|
| ①② | Integer | Output Voltage(1.2~3.6V) |
| ③ | N | Package:SOT23 |
| ④ | R | RoHS / Pb Free |
| | G | Halogen Free |

Note: "①②" stands for output voltages. Other voltages can be specially customized

Block Diagram





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Pin Assignment

SOT23 (Top View)

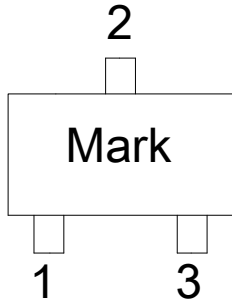
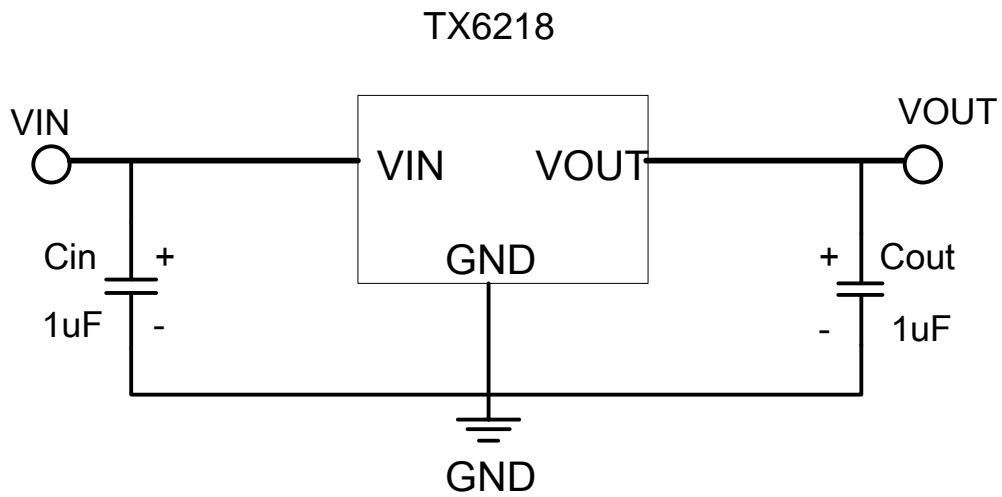


Table1: TX6218 series (SOT23 PKG)

| PIN NO. | PIN NAME | FUNCTION |
|---------|----------|--------------------|
| 1 | GND | GND pin |
| 2 | VIN | Input voltage pin |
| 3 | VOUT | Output voltage pin |

Typical Application



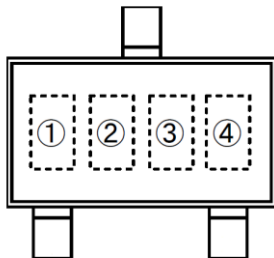


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Marking Rule



SOT-23
(TOP VIEW)

| Product Name | Product Code | | | |
|--------------|--------------|-----|-----|-----|
| | (1) | (2) | (3) | (4) |
| TX6218-12 | 6 | 5 | B | X |
| TX6218-15 | 6 | 5 | E | 9 |
| TX6218-18 | 6 | 5 | K | 5 |
| TX6218-25 | 6 | 5 | T | 5 |
| TX6218-28 | 5 | 4 | F | K |
| TX6218-30 | 6 | 5 | Z | 5 |
| TX6218-33 | 6 | 6 | 2 | K |
| TX6218-36 | 6 | 6 | 5 | K |



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Absolute Maximum Ratings

| Parameter | | Symbol | Ratings | Units |
|-----------------------------|--------|------------------|---|-------|
| Input Voltage | | V _{IN} | 8 | V |
| Output Current | | I _{OUT} | 300* | mA |
| Output Voltage | | V _{OUT} | V _{SS} -0.3~V _{IN} +0.3 | V |
| Power Dissipation | SOT-23 | P _d | 0.20 | W |
| Operating Temperature Range | | T _{opr} | -40~+85 | °C |
| Storage Temperature Range | | T _{stg} | -55~+125 | °C |

*I_{OUT}=P_d/(V_{IN}-V_{OUT})

Electrical Characteristics

TX6218 for any output voltage

(T_a=25°C)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|--|------------------------|------|------------------------|--------|
| Output Voltage | V _{out} | V _{in} =V _{out} +1V 1.0mA≤I _{out} ≤30mA 1.2V≤V _{out} ≤2.5V | V _{out} -0.05 | -- | V _{out} +0.05 | V |
| | | V _{in} =V _{out} +1V 1.0mA≤I _{out} ≤30mA 2.5V≤V _{out} ≤3.6V | V _{out} ×0.98 | -- | V _{out} ×1.02 | V |
| Output Current*1 | I _{out} | V _{in} -V _{out} =1V | -- | 300 | -- | mA |
| Low dropout*2 | V _{drop} | Refer to the next table | | | | |
| Line Regulation | Δ V _{out} 1/(V _{in} -V _{out}) | 1.6V≤V _{in} ≤8V I _{out} =40mA | -- | 0.05 | 0.2 | %/V |
| Load Regulation | Δ V _{out} /Δ I _{out} | V _{in} = V _{out} +1V 1.0mA≤I _{out} ≤80mA | -- | 12 | 30 | mV |
| Output voltage Temperature Coefficiency | Δ V _{out} /(T _a -V _{out}) | I _{out} =30mA 0°C≤T _a ≤70°C | -- | ±100 | -- | Ppm/°C |
| Supply Current | I _{ss} | -- | -- | 5 | 10 | uA |
| Input Voltage | V _{in} | -- | -- | 6 | 8 | V |
| PSRR | PSRR | F=1KHz V _{in} =V _{out} +1V | -- | 50 | -- | dB |
| Output Noise | EN | BW=10Hz~100KHz | -- | 30 | -- | uVrms |



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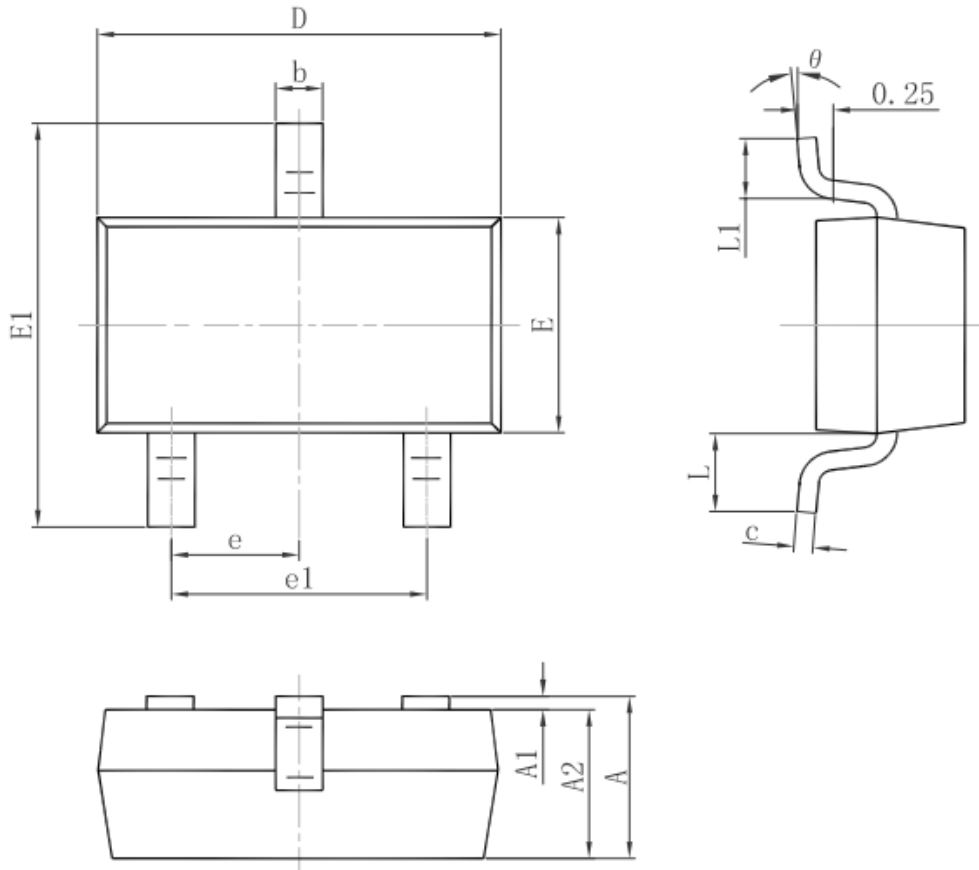
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Electrical Characteristics by Output Voltage:

| Output Voltage Vout(V) | Dropout Voltage Vdif (V) | | |
|---------------------------|--------------------------|------|------|
| | Conditions | Typ. | Max. |
| Vout≤1.5V | Iout=100 mA | 0.50 | 0.68 |
| 1.8 ≤ Vout ≤ 2 | | 0.39 | 0.53 |
| 2.8 ≤ Vout ≤ 5.0 | | 0.28 | 0.39 |



Package Information
3-pin SOT23 Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |



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