

Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- Low Quiescent Current: 5uA
- 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

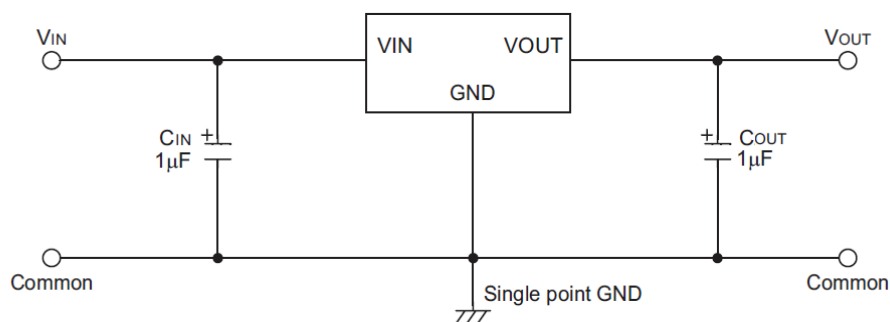
MLS6206 series are a highly precise, lower consumption, 3 terminal, positive voltage regulators manufactured using CMOS and laser trimming technologies. The series provides large currents with a significantly small dropout voltage.

The MLS6206 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 1.2V to 5.0V. MLS6206 series are available in SOT-23, SOT-23-3L and SOT-89 packages.

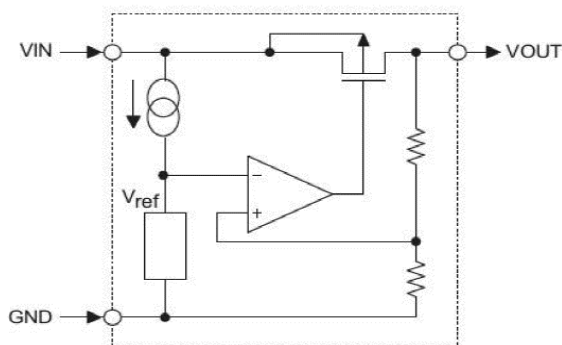


Halogen-Free

Typical Application

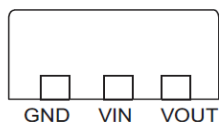
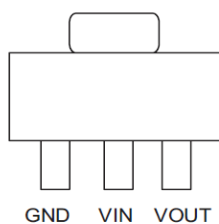


Block Diagram

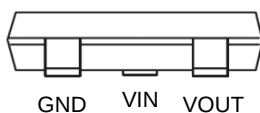
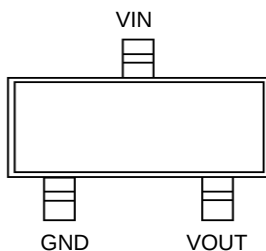


Pin Assignment

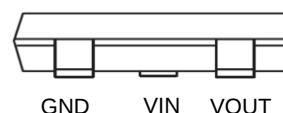
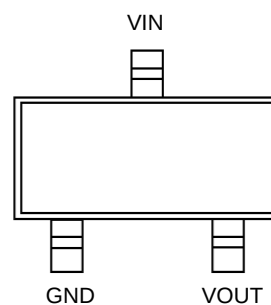
SOT89



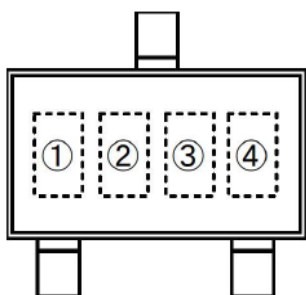
SOT-23



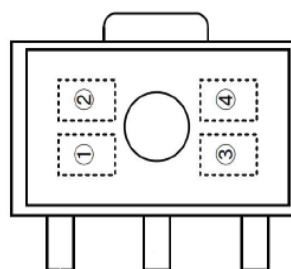
SOT23-3L



Marking Rule



SOT-23/SOT-23-3L



SOT-89

Product Name	Product Code			
	①	②	③	④
MLS6206-15	6	5	E	9
MLS6206-18	6	5	K	5
MLS6206-25	6	5	T	5
MLS6206-28	5	4	F	K
MLS6206-30	6	5	Z	5
MLS6206-33	6	6	2	K
MLS6206-36	6	6	5	K

Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		V_{IN}	$V_{SS}-0.3 \sim V_{IN}+8$	V
Output Current		I_{OUT}	500*	mA
Output Voltage		V_{OUT}	$V_{SS}-0.3 \sim V_{IN}+0.3$	V
Power Dissipation	SOT-23	P_d	280	mW
	SOT-23-3L		380	mW
	SOT-89		600	mW
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

MLS6206 for any output voltage

 $T_a=25^{\circ}\text{C}$

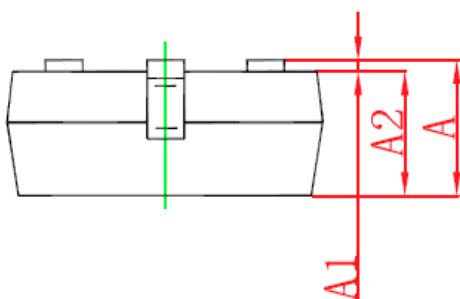
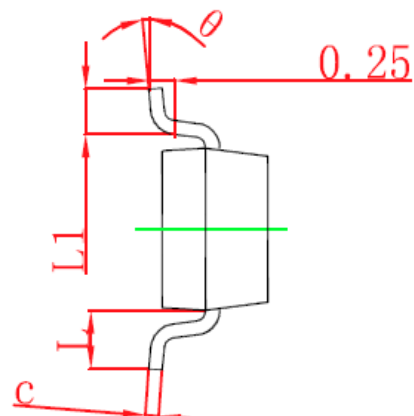
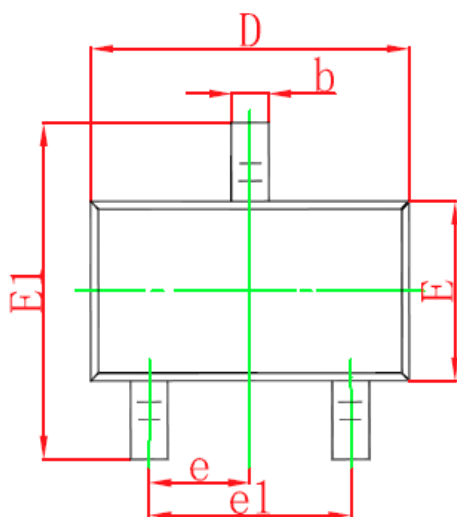
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{OUT}	Output Voltage	$V_{in}=V_{out}+1V$ $1.0mA \leq I_{out} \leq 30mA$	$V_{out} \times 0.98$	-	$V_{out} \times 1.02$	V
I_{OUT}	Output Current*1	$V_{in}-V_{out}=1V$	-	500	-	mA
V_{drop}	Low dropout*2	Refer to the next table				
$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	$1V \leq V_{in} \leq 6V$ $I_{out}=10mA$	-	0.01	0.2	%/V
$\frac{\Delta V_{OUT}}{I_{OUT}}$	Load Regulation	$V_{in}=V_{out}+1V$ $1.0mA \leq I_{out} \leq 100mA$	-	10	-	mV
$\frac{\Delta V_{OUT}}{T_a \times V_{OUT}}$	Output voltage Temperature Coefficiency	$I_{out}=10mA$ $-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$	-	100	-	Ppm/°C
I_{SS}	Supply Current	-	1.0	5	10	μA
V_{IN}	Input Voltage	-	2.0	-	6.5	V
PSRR	PSRR	$F=1KHz$ $V_{in}=V_{out}+1V$	-	65	-	dB

Electrical Characteristics by Output Voltage

Output Voltage $V_{out}(V)$	Dropout Voltage V_{dif} (V)		
	Conditions	Typ.	Max.
$V_{out} \leq 1.5V$	$I_{out}=100\text{ mA}$	0.35	0.57
$1.8 \leq V_{out} \leq 2$		0.28	0.42
$2.8 \leq V_{out} \leq 5.0$		0.10	0.35

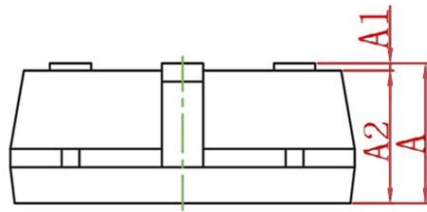
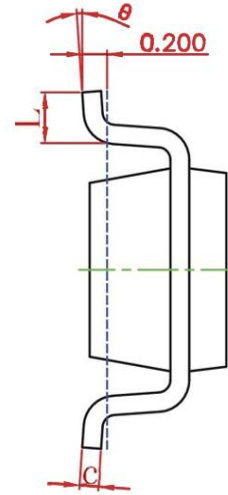
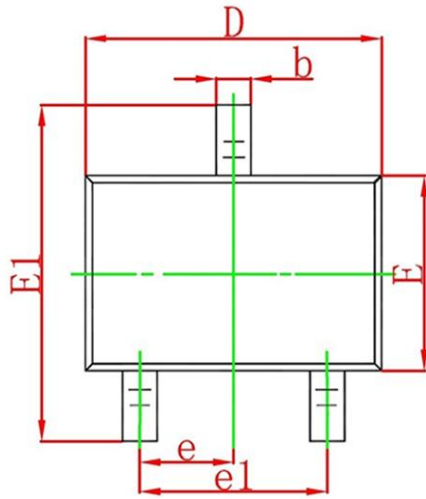
Package Information

SOT-23



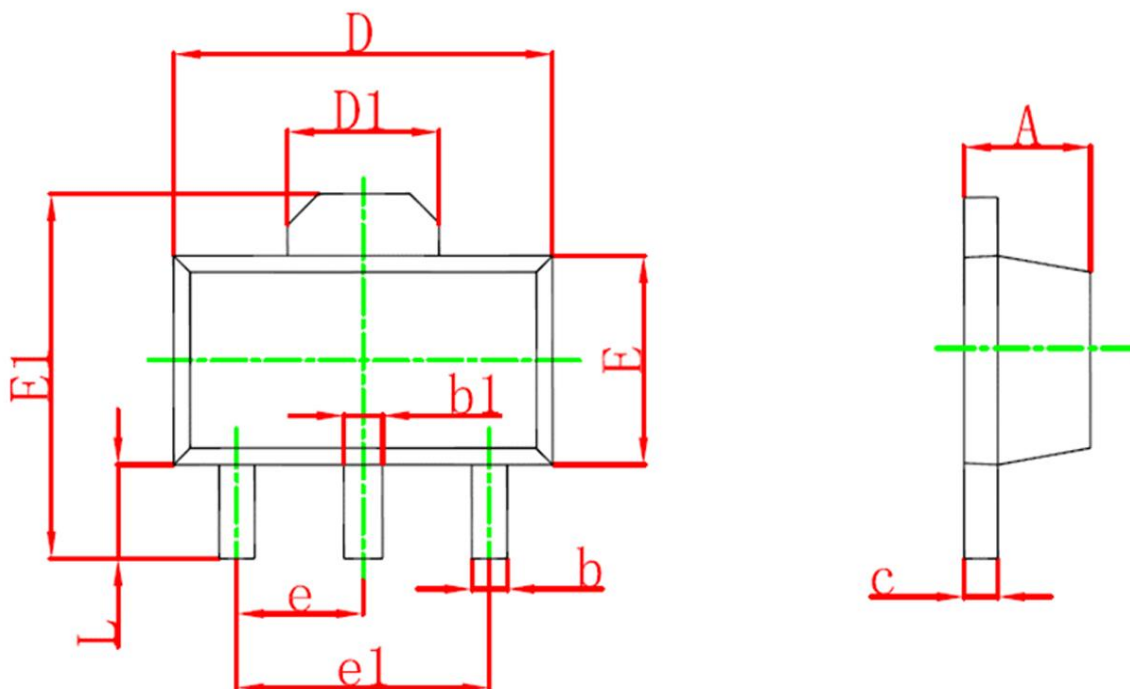
Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
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°

SOT-23-3L



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.042	0.050
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.042	0.046
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.112	0.120
E	1.500	1.700	0.060	0.068
E1	2.650	2.950	0.106	0.118
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT-89



Symbol	Dimensions in Millimeters(mm)		Dimensions in Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047