

SK6206

300mA Ultra-Low Power Consumption LDO

General Description

SK6206 series are a highly precise, lower consumption, 3 terminal, positive voltage regulators manufactured with CMOS and laser trimming technologies.

The SK6206 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. The Output voltages are internally by laser trimming technologies. It is selectable in 0.1V increments within a range of 1.5V to 3.6V.

The SK6206 is available in SOT-23, SOT23-3 and SOT-89 package.

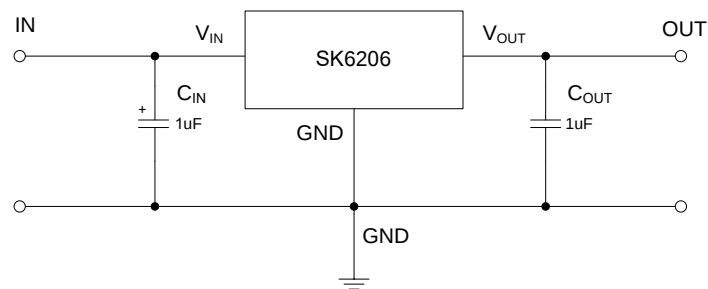
Features

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

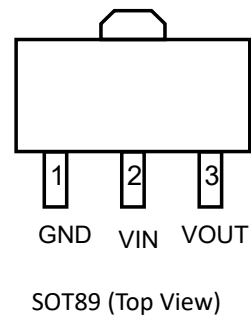
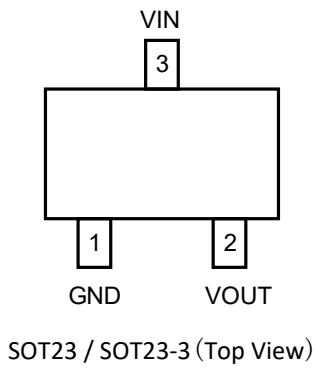
Applications

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

Typical Application Circuit



Pin Configuration



Pin Description

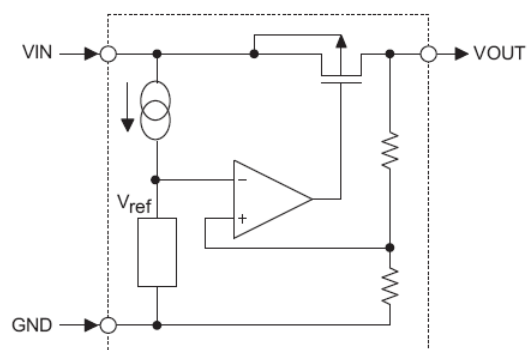
PIN NO.		PIN NAME	FUNCTION
SOT23-3/SOT23	SOT89		
1	1	GND	GND pin
2	3	VOUT	Output voltage pin
3	2	VIN	Input voltage pin

Ordering Information

Order Number	Package	Temperature	RoHS	Shipping Type
SK6206-XXNR	SOT23	-40°C to +85°C	YES	3000PCS/REEL
SK6206-XXMR	SOT23-3	-40°C to +85°C	YES	3000PCS/REEL
SK6206-XXPR	SOT89	-40°C to +85°C	YES	1000PCS/REEL

Note: "XX" stands for output voltages within a range of 1.8V to 3.6V.

Block Diagram



Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		VIN	8	V
Output Current		IOUT	300*	mA
Output Voltage		VOUT	VSS-0.3~VIN+0.3	V
Power Dissipation	SOT-23	Pd	0.20	W
	SOT23-3		0.25	W
	SOT-89		0.50	W
Operating Temperature Range		Topr	-40~+85	°C
Storage Temperature Range		Tstg	-55~+125	°C

*IOUT=Pd/(VIN-VOUT)

Electrical characteristics

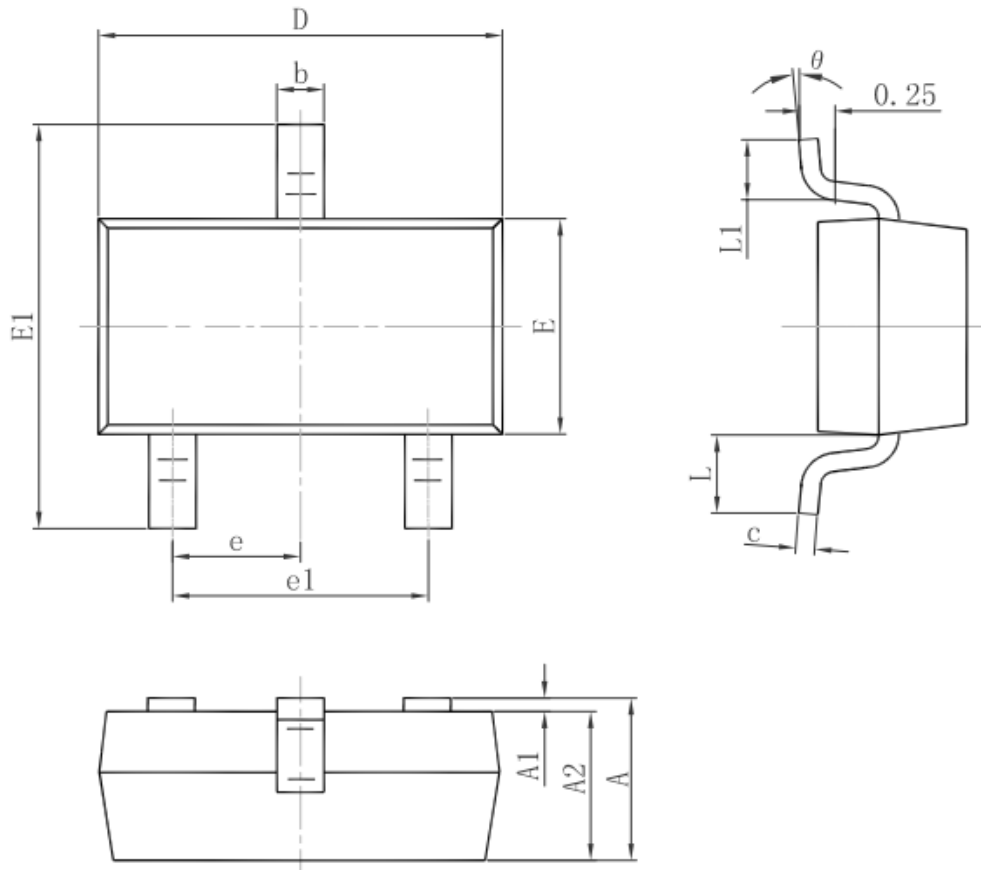
(Ta=25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Vin=Vout+1V 1.0mA≤Iout≤30mA	Vout×0.98	--	Vout×1.02	V
Output Current*1	Iout	Vin-Vout=1V	--	300	--	mA
Low dropout*2	Vdrop	Refer to the next table				
Line Regulation	$\Delta V_{out1}/(V_{in}-V_{out})$	1.6V≤Vin≤8V Iout=40mA	--	0.05	0.2	%/V
Load Regulation	$\Delta V_{out} / \Delta I_{out}$	Vin= Vout+1V 1.0mA≤Iout≤80mA	--	12	30	mV
Output voltage Temperature Coefficiency	$\Delta V_{out}/(T_a-V_{out})$	Iout=30mA 0°C≤Ta≤70°C	--	±100	--	Ppm/°C
Supply Current	Iss	--	--	5	10	uA
Input Voltage	Vin	--	--	6	8	V
PSRR	PSRR	F=1KHz Vin=Vout+1V	--	50	--	dB
Output Noise	EN	BW=10Hz~100KHz	--	30	--	uVrms

Electrical Characteristics by Output Voltage:

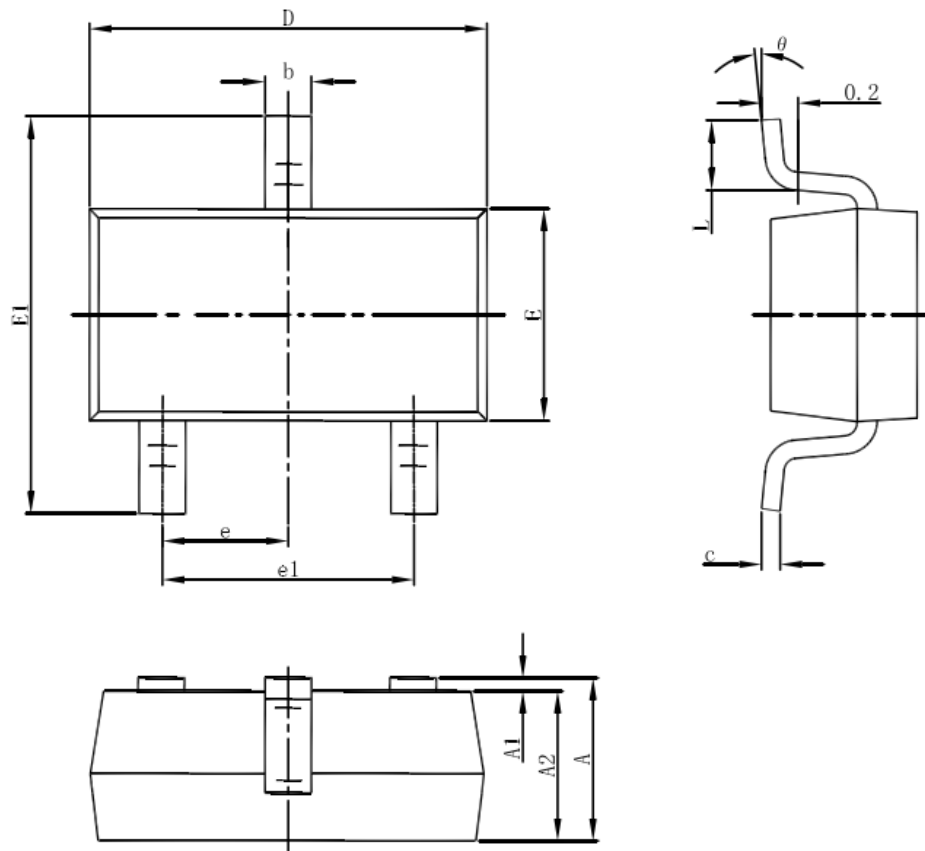
Output Voltage Vout(V)	Dropout Voltage Vdif (V)		
	Conditions	Typ.	Max.
Vout≤1.5V	Iout=100 mA	0.50	0.68
1.8 ≤ Vout ≤ 2		0.39	0.53
2.8 ≤ Vout ≤ 5.0		0.28	0.39

Package Dimension: SOT23



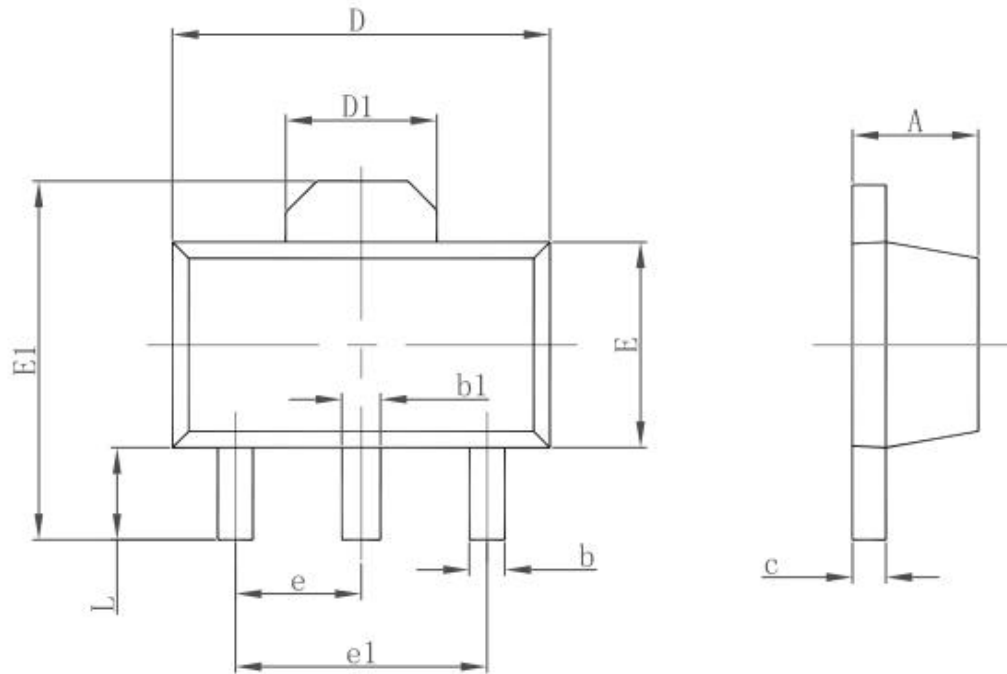
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		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°

Package Dimension: SOT23-3



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Package Dimension: SOT89



Symbol	Dimensions In Millimeters		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