

SK6206M

300mA Ultra-Low Power Consumption LDO

GENERAL DESCRIPTION

The SK6206M is highly precise, low power consumption, 3 terminal, positive voltage regulators manufactured using CMOS technologies voltage and an error correction circuit. The series is compatible with low ESR ceramic capacitors.

The current limiter foldback circuit operates as a short circuit protection as well as the output current limiter for the output pin.

The SK6206M is available with SOT23 package.

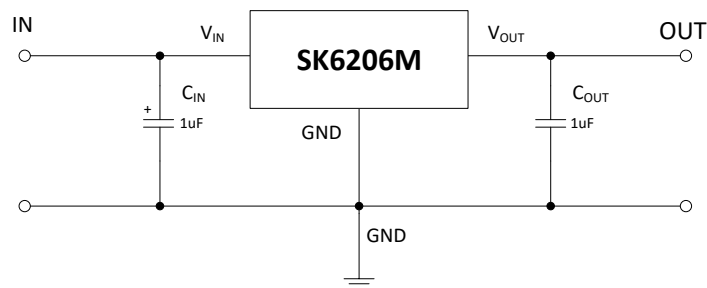
FEATURES

- Input Voltage Range: 1.8V to 5.5V
- Maximum Output Current: 300mA
- Low Quiescent Current: 6 μ A
- Low Dropout Voltage: 180mV@100mA
- Fixed Output Voltage: 3.0V, 3.3V
- Output Voltage Accuracy: $\pm 2\%$

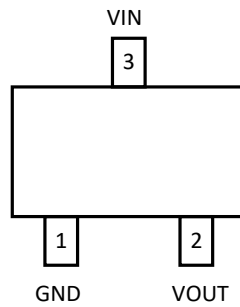
APPLICATIONS

- Mobile Phones
- Battery powered equipment
- Portable game consoles
- Reference voltage sources

TYPICAL APPLICATION CIRCUIT



PIN CONFIGURATION



SOT23 (Top View)

PIN DESCRIPTION

Pin Number	Name	Function
1	GND	Ground Pin
2	VOUT	Output Pin
3	VIN	Input Pin

ORDERING INFORMATION

Part Number	Package	Temperature	Tape & Reel
SK6206MS3-XX	SOT23	-40°C to +85°C	3000

Note: "XX" stands for output voltages. Example 30 means output 3V, 33 means output 3.3V.

ABSOLUTE MAXIMUM RATINGS (Note 1)

Parameter	Description	Min	Max	Unit
Input Voltage	VIN to GND	-0.3	6	V
	VOUT to GND	-0.3	6	V
	VIN to VOUT	-0.3	6	V
Current	Peak output current	Internally limited		
Temperature	Operating Temperature Range	-40	125	°C
	Storage Temperature	-40	150	°C
Thermal Resistance (Junction to Ambient)	SOT23-3	300		°C/W
Power Dissipation	SOT23-3	300		mW

Note (1): Exceeding the range listed in " ABSOLUTE MAXIMUM RATINGS" will cause damage to the chip, and the working state of the chip beyond the range of rated parameters cannot be guaranteed. Exposure outside the rated parameter range will affect the reliability of the chip.

ESD RATINGS

Parameter	Description	Range	Unit
VESD	Human Body Model(HBM)	6	KV
	Charged Device Model(CDM)	200	V

Note:

JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.
 JEDEC document JEP157 states that 200-V CDM allows safe manufacturing with a standard ESD control process.

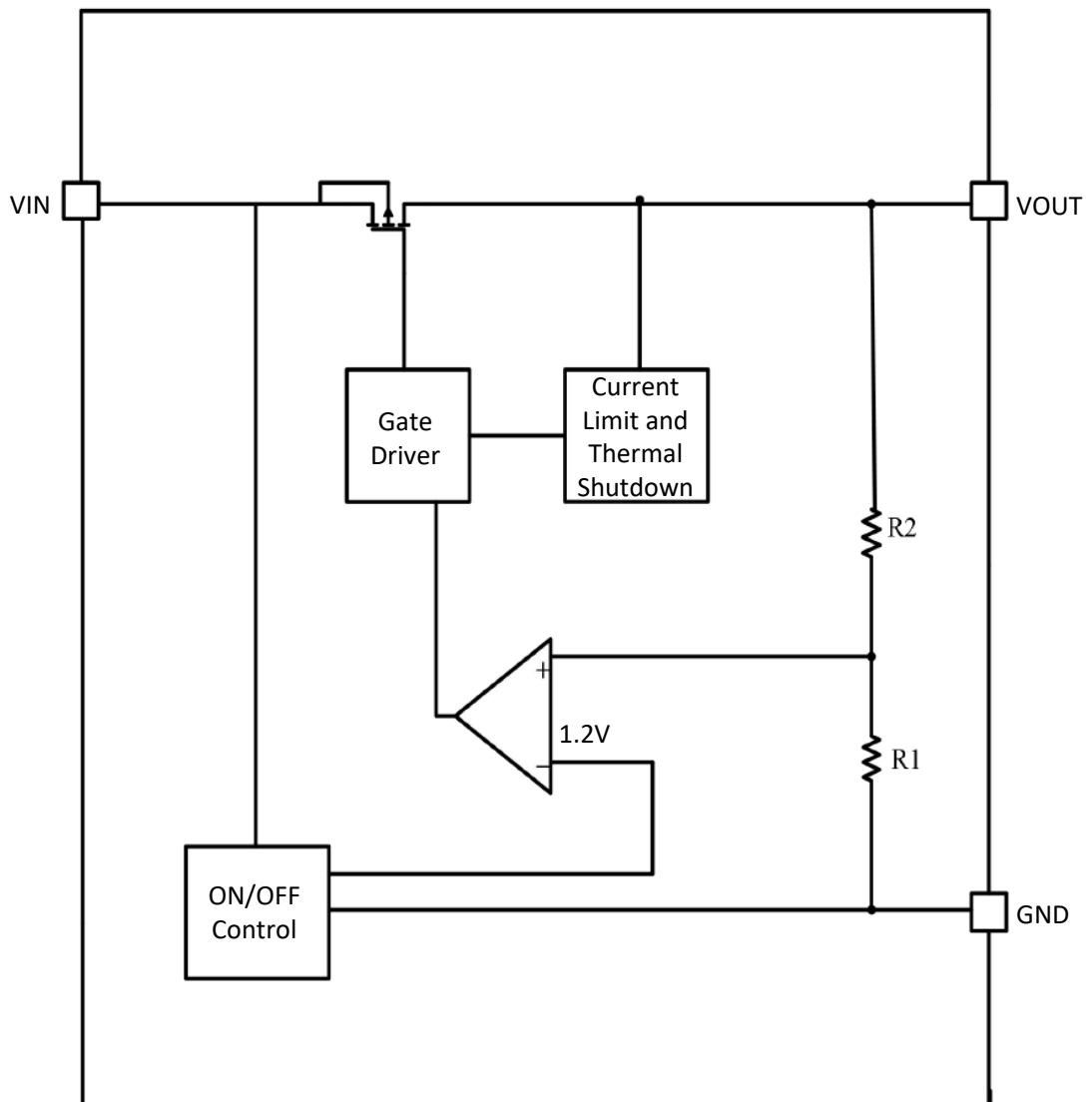
ELECTRICAL CHARACTERISTICS

$T_A=25^{\circ}\text{C}$, $C_{IN}=1\mu\text{F}$, $V_{IN}=V_{OUT}+1.0\text{V}$, $C_{OUT}=1\mu\text{F}$, unless otherwise noted.

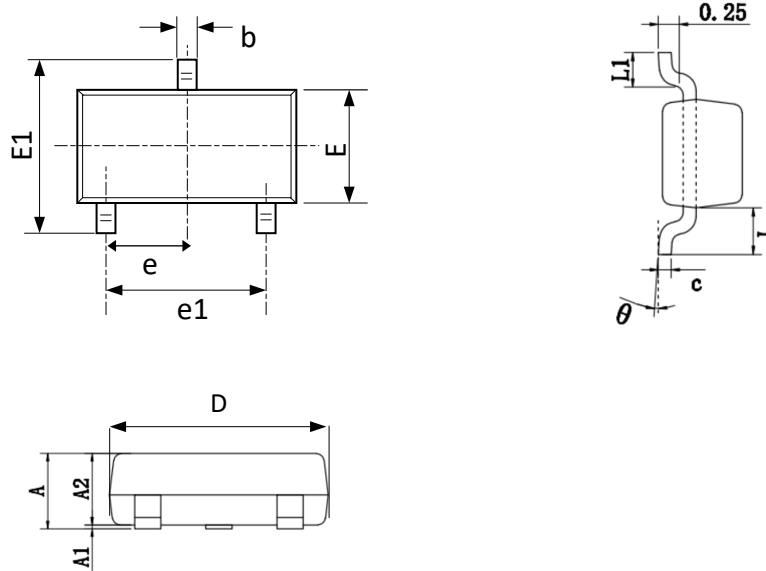
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{IN}	Operating Input Voltage		1.8		5.5	V
V_{OUT}	Output Voltage	$V_{IN}=5\text{V}$, $I_{OUT}=10\text{mA}$	$98\% \cdot V_{OUT}$	V_{OUT}	$102\% \cdot V_{OUT}$	V
I_{SHORT}	Short Current	$V_{IN}=5\text{V}$		150		mA
I_{LIMIT}	Current Limit			530		mA
I_{GND}	Quiescent Current	$V_{IN}=5\text{V}$		6		μA
V_{DROP}	Dropout Voltage ^(Note 1)	$I_{OUT}=10\text{mA}$, $V_{IN}=V_{OUT}-0.1\text{V}$		80		mV
		$I_{OUT}=100\text{mA}$, $V_{IN}=V_{OUT}-0.1\text{V}$		180		mV
ΔV_{LOAD}	Load Regulation	$V_{IN}=5\text{V}$, $1\text{mA} \leq I_{OUT} \leq 300\text{mA}$		25		mV
ΔV_{Line}	Line Regulation	$I_{OUT}=1\text{mA}$, $V_{OUT}+0.5\text{V} \leq V_{IN} \leq 5\text{V}$		0.26		mV
T_{SHDN}	Thermal Shutdown Temperature	Shutdown, temperature increasing		150		$^{\circ}\text{C}$
		Reset, temperature decreasing		126		

Note (1): Dropout Voltage is the voltage difference between the input and the output at which the output voltage drops 2% below its nominal value.

BLOCK DIAGRAM



PACKAGE DIMENSION: SOT23



Unit: mm

DIMENSIONS IN MILLIMETERS			
SYMBOL	MINIMUM	NOMINAL	MAXIMUM
A	-	-	1.15
A1	0.00	-	0.10
A2	0.90	0.95	1.05
b	0.30	0.35	0.40
c	0.152 TYP		
D	2.85	2.90	2.95
e	0.95 TYP		
e1	1.80	1.90	2.00
E	1.25	1.30	1.35
E1	2.25	2.40	2.55
L1	0.30	-	0.50
L	0.55 REF		
θ	0°	-	8°