

300mA,Low Dropout Linear Regulator

Features

- Quiescent Current: 6 μ A
- Input Voltage Range: Max:6V
- Output Current: 300mA
- Low Dropout Voltage: 180mV@100mA
- Output Voltage: 3.3V
- Output Voltage Accuracy: $\pm 2\%$ (Typ.)
- Low Power Consumption
- Available Packages: SOT23-3

Applications

- Mobile Phones
- Battery powered equipment
- Portable gameconsoles
- Reference voltage sources

Description

The HL6206A33 Series are highly precise, low power consumption, 3 terminal, positive voltage regulators manufactured using CMOS technologies.

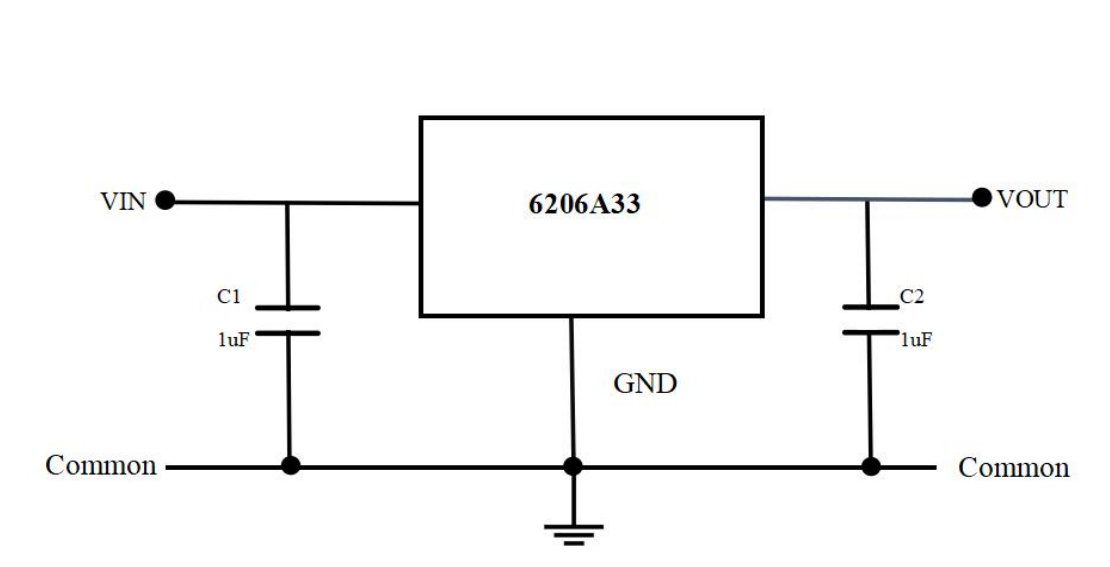
The HL6206A33 Series consists of a current limiter circuit a driver transistor, a precision reference voltage and an error correction circuit

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.

PART NUMBER	PACKAGE	BODY SISE(NOM)
HL6206A33	SOT23-3	2.9mm*2.8mm

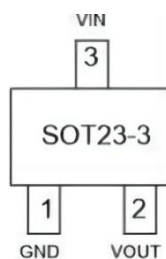
Typical Application



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Pin Configuration and Functions



名称	SOT23-3	描述
	HL6206A33	
GND	1	芯片地
VOUT	2	输出引脚
VIN	3	输入引脚

Absolute Maximum Ratings

Parameter	Description	Min	Max	Unit
Input Voltage	VIN to GND	-0.3	6	V
	VOUT to GND	-0.3	5	V
	VIN to VOUT	-0.3	5	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	200		°C/W
Power Dissipation	SOT23-3	600		mW

Note:

exceeding the range specified by the rated parameters 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
V _{ESD}	Human Body Model(HBM)	6	KV

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.

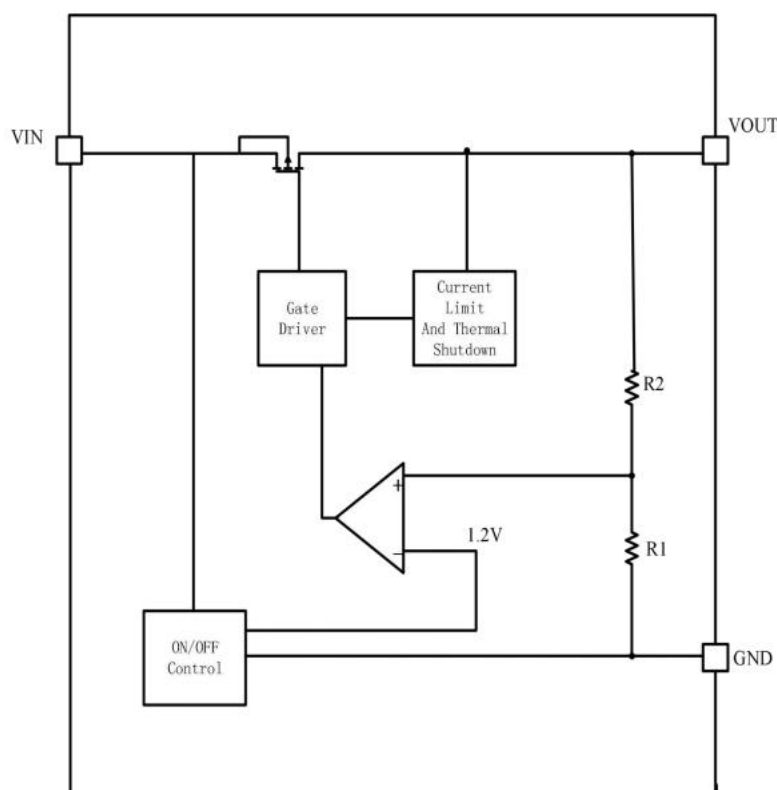
Electrical Characteristics

(At $T_A=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{IN}	Operating Input Voltage		1.2	—	6	V
V_{OUT}	Output Voltage	$V_{IN}=5\text{V}$, $I_{OUT}=10\text{mA}$	—	3.306	—	V
Short Current	ISHORT	$V_{OUT}=0\text{V}$, $V_{IN}=V_{OUT}+2\text{V}$		150		mA
I_{LIMIT}	Current Limit	$V_{OUT}=V_{OUT}\times 98\%$, $V_{IN}=V_{OUT}+2\text{V}$		530		mV
I_{GND}	Quiescent Current	$V_{IN}=5\text{V}$, $I_{OUT}=0\text{A}$, $GND=0\text{V}$	—	6	—	uA
V_{DROP}	Dropout Voltage ⁽¹⁾	$I_{OUT}=10\text{mA}$, $V_{IN}=V_{OUTNOM}-0.1\text{V}$	—	80	—	mV
		$I_{OUT}=100\text{mA}$, $V_{IN}=V_{OUTNOM}-0.1\text{V}$	—	180	—	mV
ΔV_{OUT}	Load Regulation	$V_{IN}=5\text{V}$, $0\text{mA}\leq I_{OUT}\leq 300\text{mA}$	—	25	—	mA
ΔV_{OUT}	Line Regulation	$I_{OUT}=1\text{mA}$, $V_{OUTNOM}+0.5\text{V}\leq V_{IN}\leq 5\text{V}$	—	0.26	—	mV
TOTSD	Thermal Shutdown Temperature		—	150	—	$^{\circ}\text{C}$
THYOTSD	Thermal Shutdown Hysteresis		—	27	—	$^{\circ}\text{C}$
V_n	Output Noise Voltage	$V_{IN}=5\text{V}$, $BW=10\text{Hz}$ to 100kHz , $I_{OUT}=1\text{mA}$		152		μV_{rms}
PSRR	Power Supply Rejection Ratio	$V_{IN}=5\text{V}$, $I_{OUT}=100\text{mA}@1\text{kHz}$	—	78	—	dB

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.

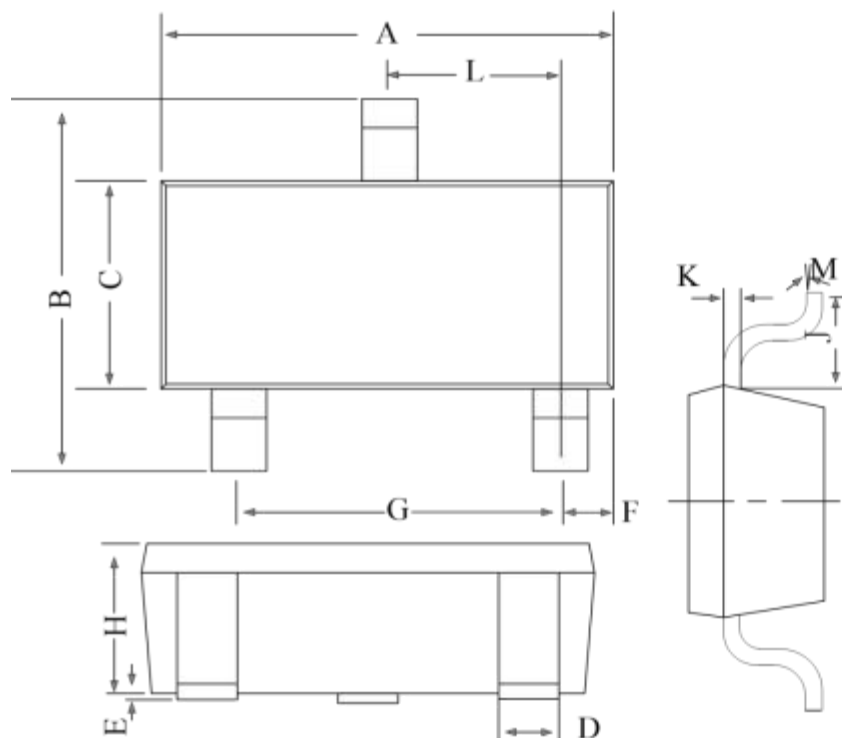
Functional Block Diagram



Functional Block Diagram

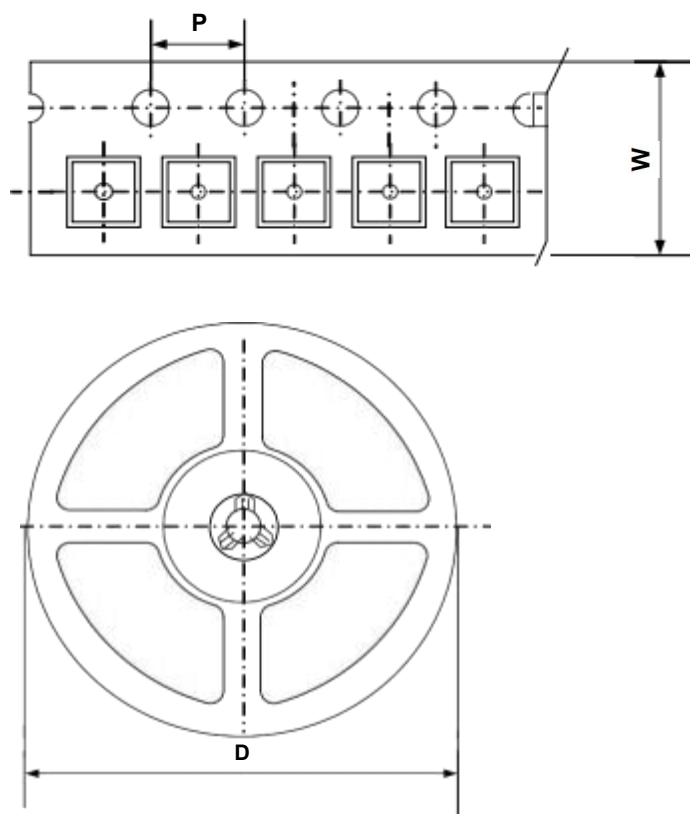
Package Outline

SOT23-3



REF.	Millimeter	
	Min.	Max.
A	2.82	2.92
B	2.65	2.95
C	1.56	1.60
D	0.35	0.55
E	0	0.1
F	0.45	0.55
G	1.90	REF.
H	1.0	1.3
K	0.10	0.20
J	0.40	—
L	0.85	1.15
M	0°	10°

Packing Information



Type	W(mm)	P(mm)	D(mm)	Qty (pcs)
SOT23-3	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs