

General Description

The XR6206 is low power consumption and low current in the standby mode. The XR6206 is ideally suited for standby micro-control-unit systems, especially for always-on applications like portable and other battery-operated systems. The XR6206 retains all the features that are common to low dropout regulators including a low dropout PMOS pass device, short circuit protection, and thermal shutdown. The XR6206 is available with several fixed output voltages ranging from 1.5V to 5.0V.

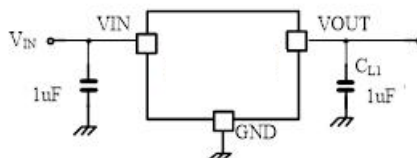
Applications

- Battery power equipment
- Reference voltage sources
- Portable equipment
- Mobile phones
- Notebook computers

Features

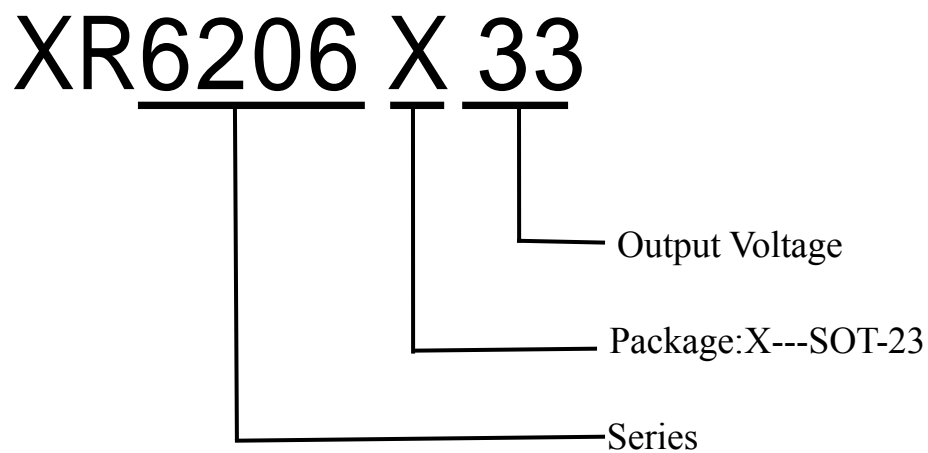
- Input voltage range up to 6V
- Output voltage tolerances of $\pm 2\%$
- Output current of 300 mA
- Ultra Low Quiescent Current ($I_Q = 500\text{nA}$)
- ESD protected

Typical Application Circuit



Ceramic Capacitor Stable

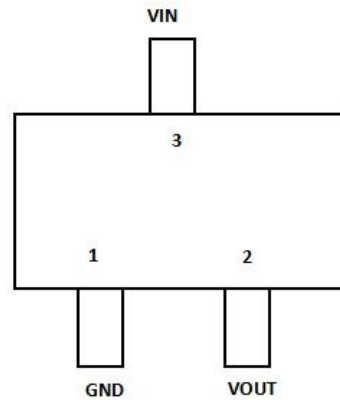
Selection Guide



Product series	Output voltage	Package
XR6206X30	3.0V	SOT-23
XR6206X33	3.3V	SOT-23

NOTE : If you need other voltage and package, please contact our sales staff.

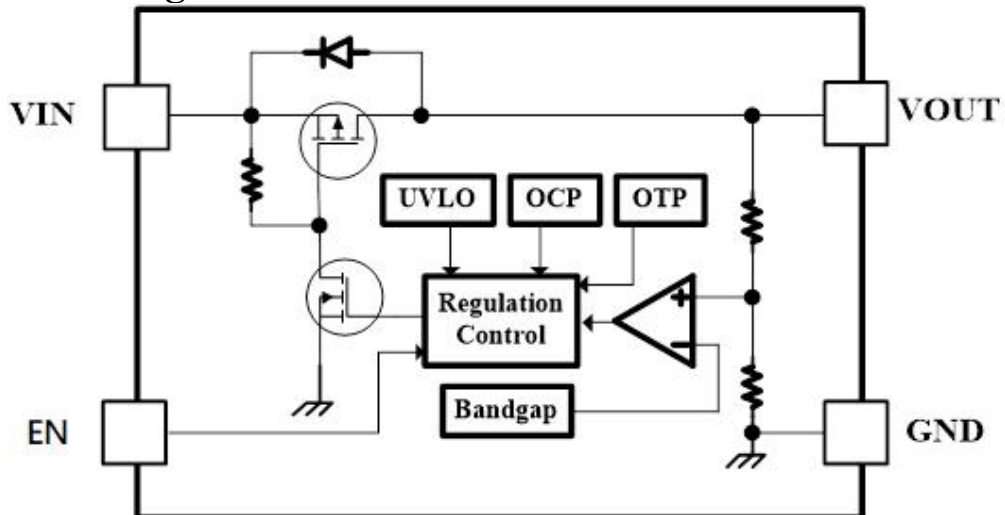
Pin Configuration



Pin Assignment

Pin Name	Pin No. SOT23	Pin Function
GND	1	Ground
VOUT	2	Output Voltage Pin
VIN	3	Input Voltage pin.

Function Block Diagram



Absolute Maximum Ratings

- V_{IN} ----- -0.3V to +6.5V
- Junction Temperature----- 125°C
- Lead Temperature (Soldering, 10 sec.)----- 300°C
- Storage Temperature ----- -65°C to 150°C

Recommended Operating Conditions

- Input Voltage, V_{IN} ----- +2.5V to +5.5V
- Junction Temperature ----- -40°C to 125°C

Electrical Characteristics

$V_{IN} = V_{OUT} + 1V$, $I_{OUT} = 1mA$, $C_{IN} = C_{OUT} = 1\mu F$, $T_J = 25^\circ C$, unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Output Voltage Accuracy	ΔV_{OUT}		-2%		2%	V
Input Voltage	V_{IN}				6	V
Output Current	I_{OUT}	$V_{IN} = V_{OUT} + 1V$		300		mA
Load Regulation	ΔV_{LOAD}	$I_{OUT} = 1mA$ to 150mA			1	%
		$I_{OUT} = 1mA$ to 300mA			3	
Dropout Voltage	V_{DROP}	$I_{OUT} = 100mA$, $V_{OUT} = 3.3V$		130		mV
		$I_{OUT} = 300mA$, $V_{OUT} = 3.3V$		400		mV
Line Regulation	ΔV_{LINE}	$V_{IN} = V_{OUT} + 1V$ to 5.5V		0.6	1.5	%
Quiescent Current	I_Q	$T_J = 25^\circ C$		0.5	1	uA
Power-supply rejection ratio	PSRR	$f = 1kHz$		60		dB
Over Current Protection	I_{limit}		360	560		mA

Typical Characteristics

$V_{IN} = V_{OUT} + 1V$, $I_{OUT} = 1mA$, $V_{OUT} = 3.3V$, $C_{IN} = C_{OUT} = 1\mu F$, $T_J = 25C$, unless otherwise specified

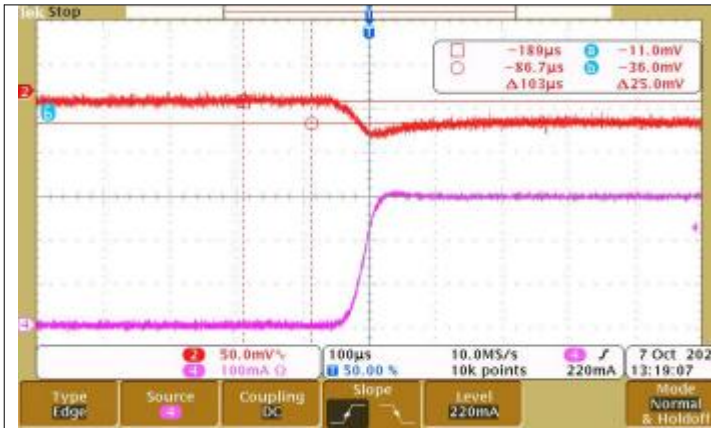


Fig 1. Load Transient (1mA to 300mA)

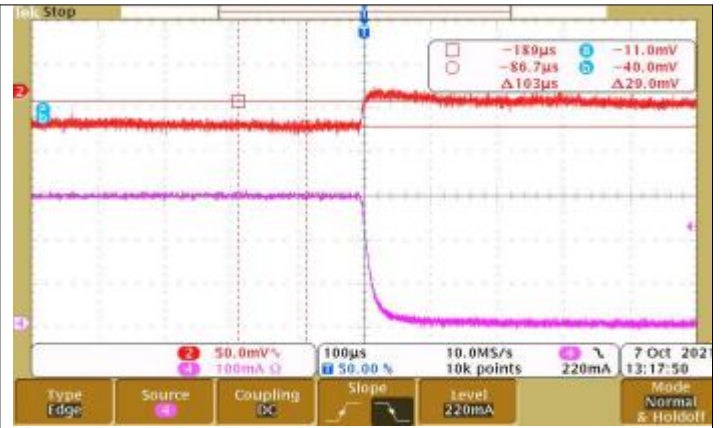


Fig 2. Load Transient (300mA to 1mA)

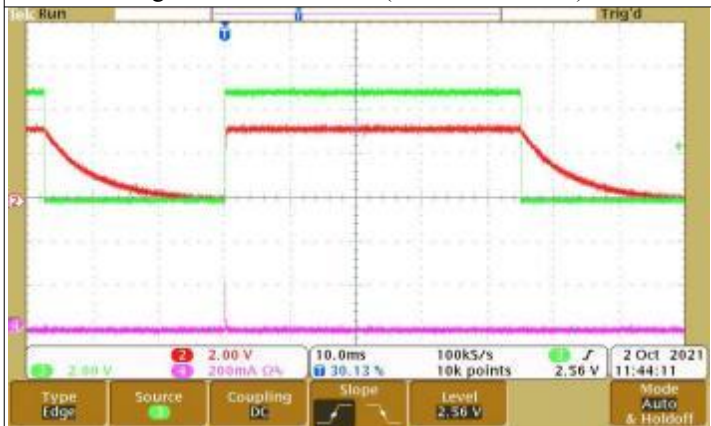


Fig 3. EN Start up (no load)

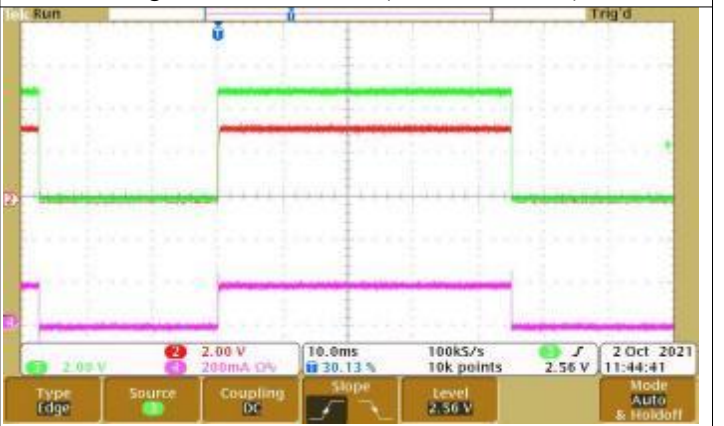


Fig 4. EN Start up (200mA load)

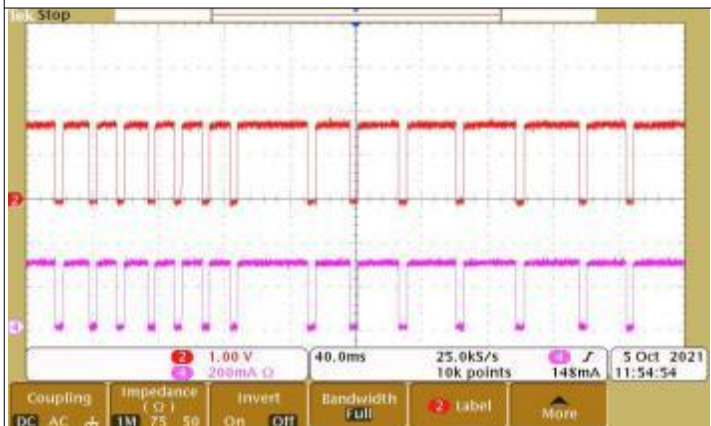


Fig 5. V_{IN} 5V, V_{OUT} 1.8V, heavy load

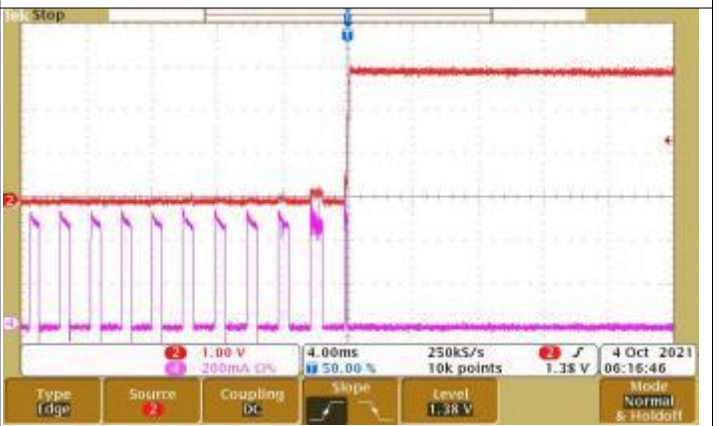


Fig 6. V_{OUT} short to GND and release

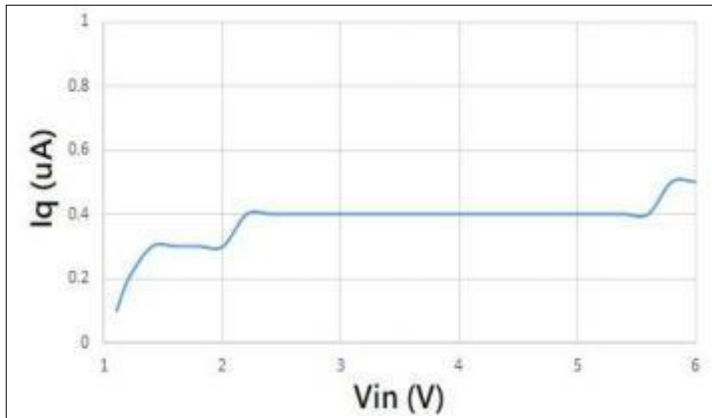


Fig 7. I_Q vs V_{IN} ($I_{OUT} = 0mA$)

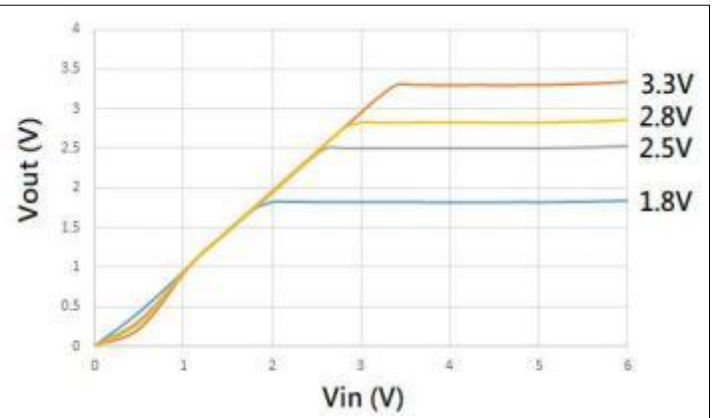


Fig 8. V_{OUT} vs V_{IN} ($I_{OUT} = 1mA$)

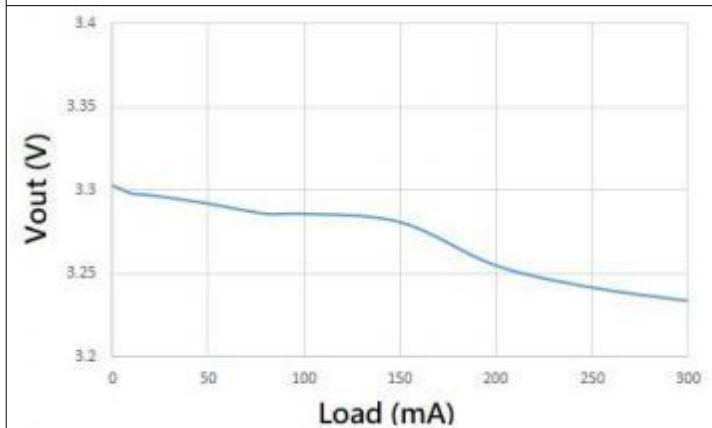


Fig 9. V_{OUT} vs Load

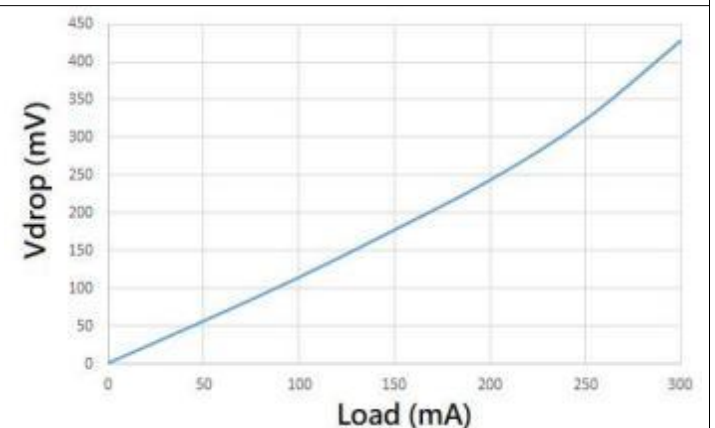


Fig 10. V_{DROP} vs Load

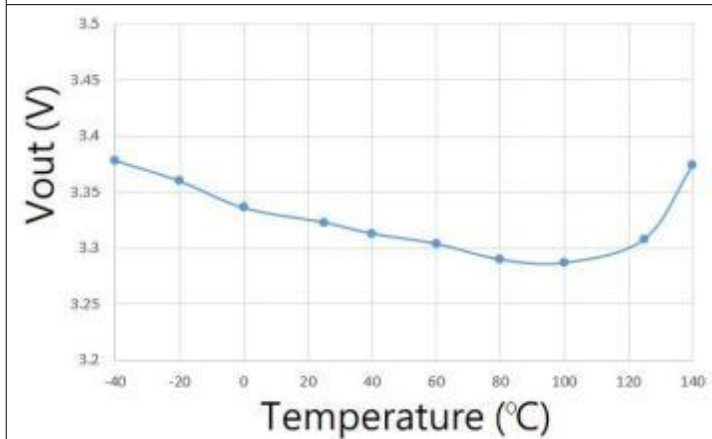


Fig 11. V_{OUT} vs Temperature ($I_{OUT} = 1mA$)

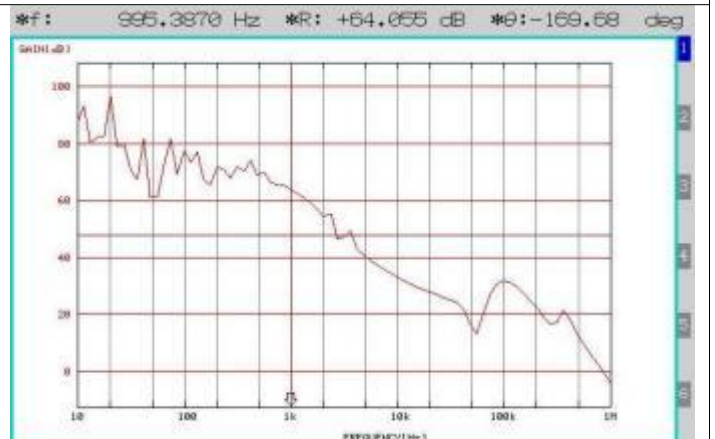
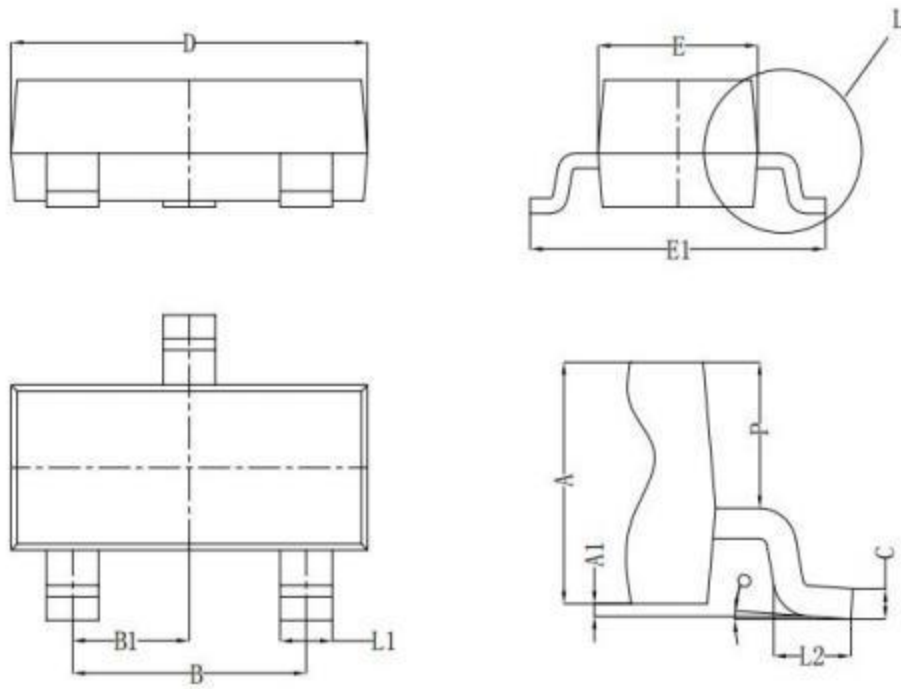


Fig 12. PSRR vs Frequency ($V_{IN} = 4.8V$, $V_{OUT} = 1.8V$)

SOT-23 Package Outline



Symbol	Dim in mm		
	Min	Nor	Max
A	0.900	1.000	1.100
A1	0.000	0.050	0.100
L1	0.350	0.400	0.500
C	0.100	0.110	0.120
D	2.800	2.900	3.000
E	1.250	1.300	1.350
E1	2.250	2.400	2.550
B	1.800	1.900	2.000
B1	0.950 TYP		
L2	0.200	0.350	0.450
P	0.550	0.575	0.600