

### Features

- High Input Voltage Range: up to 12V
- Maximum Output Current: 250mA
- Low Quiescent current: 2 $\mu$ A
- Low Dropout: 200mV ( typ )@100mA (3.3V)
- Low Output Voltage Accuracy:  $\pm$ 2%
- Low Power Consumption
- Low Temperature Coefficient
- Available Packages: SOT89-3、SOT-23-5

### Applications

- Battery powered portable devices
- Smart phone, tablet
- Hi resolution camera sensor power
- Wireless modules
- RF, PLL, VCO clock power

### General Description

The XC6201P is a low-dropout (LDO) voltage regulators with enable function offering the benefits of high input voltage, low-dropout voltage, low-power consumption, and miniaturized packaging.

The features of low quiescent current as low as 2.0  $\mu$ A and zero disable current is ideal for powering the battery equipment to a longer service life. The XC6201P

is stable with the ceramic output capacitor over its wide input range from 2V to 12V and the entire range of output load current.

### Ordering Information

**XC6201P502MR**

PACKAGE TYPE

PR: SOT-89-3

MR: SOT-23-5

OUTPUT VOLTAGE

12: 1.2V

15: 1.5V

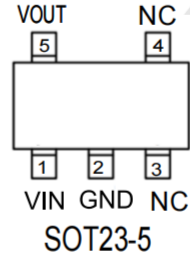
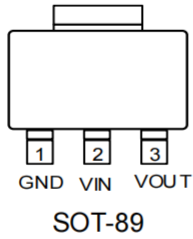
18: 1.8V

30: 3.0V

33: 3.3V

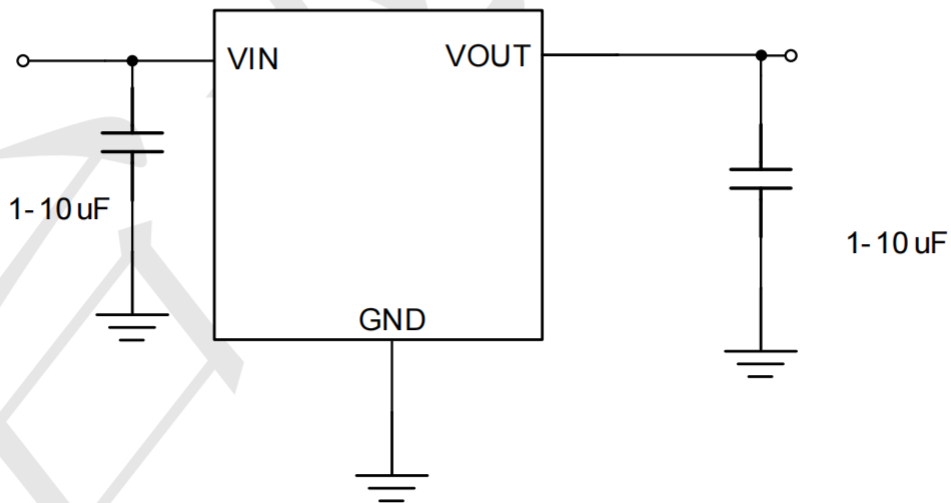
50: 5.0V

### Pin Distribution



Pin Name	Pin Function
NC	NO Connected
GND	Ground
VOUT	Output Voltage
VIN	Power Input Voltage

### Typical Application Circuit



### Absolute Maximum Rating (T<sub>A</sub>=25°C unless otherwise noted)

Parameter		Value	Unit
Supply Voltage		-0.3~+15	V
Power Dissipation	SOT-23-5	250	mW
	SOT-89	500	mW
Thermal Resistance, Junction-to-Ambient	SOT-23-5	200	°C/W
	SOT-89	500	°C/W
Operating Ambient Temperature		-40 ~ +85	°C
Storage temperature range		-50 ~ +125	°C
ESD Voltage	HBM	2	KV

### Recommended Operating Conditions

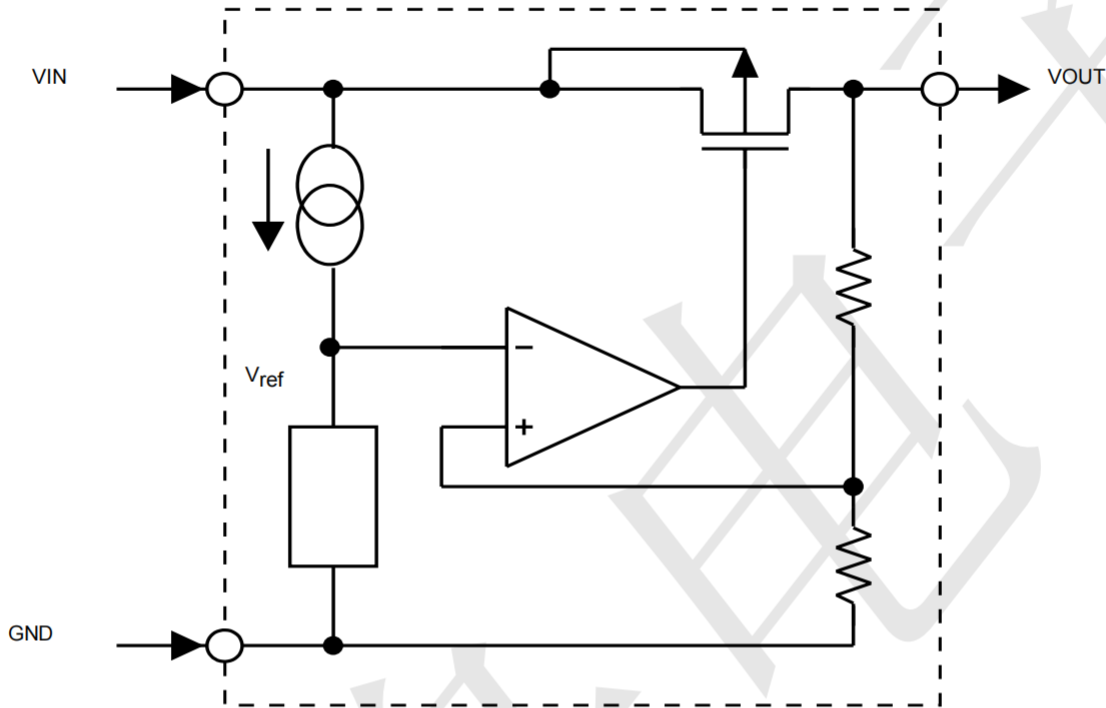
Parameter	Value	Unit
Supply Voltage	15	V
Maximum Output Current	300	mA
Operating Ambient Temperature	-40 ~ +85	°C

### Electrical Characteristics (T = 25°C unless otherwise noted)

( $V_{IN}=V_{OUT}+2$ ,  $C_{IN}=10\mu F$ ,  $C_{OUT}=10\mu F$ ,  $T_A=25^\circ C$ , unless otherwise noted.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{IN}$		--	--	12	V
Output Voltage Accuracy	$\Delta V_{OUT}$	$I_{OUT}=10mA$	-2	--	+2	%
Max. Output Current	$I_{OUT}$		300	--	--	mA
Quiescent Current	$I_Q$	$I_{OUT}=0mA$	--	1.5	3	$\mu A$
Dropout Voltage <sup>Note1</sup>	$V_{DROP}$	$2.8V \leq V_{OUT} < 3.0V$ , $I_{OUT}=10mA$	--	30	55	mV
		$3.0V \leq V_{OUT} < 3.3V$ , $I_{OUT}=100mA$	--	210	300	
		$3.3V \leq V_{OUT} < 3.6V$ , $I_{OUT}=100mA$	--	195	300	
		$3.6V \leq V_{OUT} < 4.0V$ , $I_{OUT}=100mA$	--	180	300	
		$4.0V \leq V_{OUT} < 4.4V$ , $I_{OUT}=100mA$	--	170	300	
		$4.4V \leq V_{OUT} < 5.0V$ , $I_{OUT}=100mA$	--	160	300	
		$5.0V \leq V_{OUT} < 9.0V$ , $I_{OUT}=100mA$	--	150	300	
		$9.0V \leq V_{OUT}$ , $I_{OUT}=100mA$	--	130	300	
Line Regulation	$\Delta V_{LINE}$	$V_{IN}=V_{OUT}+2$ to 20V, $I_{OUT}=1mA$	--	--	0.2	%/V
Load Regulation	$\Delta V_{LOAD}$	$1mA < I_{OUT} < 300mA$	--	37	100	mV
Short Current	$I_{SHORT}$	$V_{OUT}=0V$	--	250	--	mA
Limit Current	$I_{LIMIT}$	$V_{IN}=V_{OUT} + 2V$ , $I_{OUT}=1mA$	--	530	--	mA
Power Supply Rejection Ratio	PSRR	$V_{OUT}=3V$ , $I_{OUT}=100mA$ , $f=1KHz$	--	33	--	dB
Thermal Shutdown Temperature	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta T_A}$	$V_{IN}=V_{OUT}+2V$ , $I_{OUT}=10mA$ $-40^\circ C \leq T_A \leq 85^\circ C$	--	100	--	ppm/ $^\circ C$

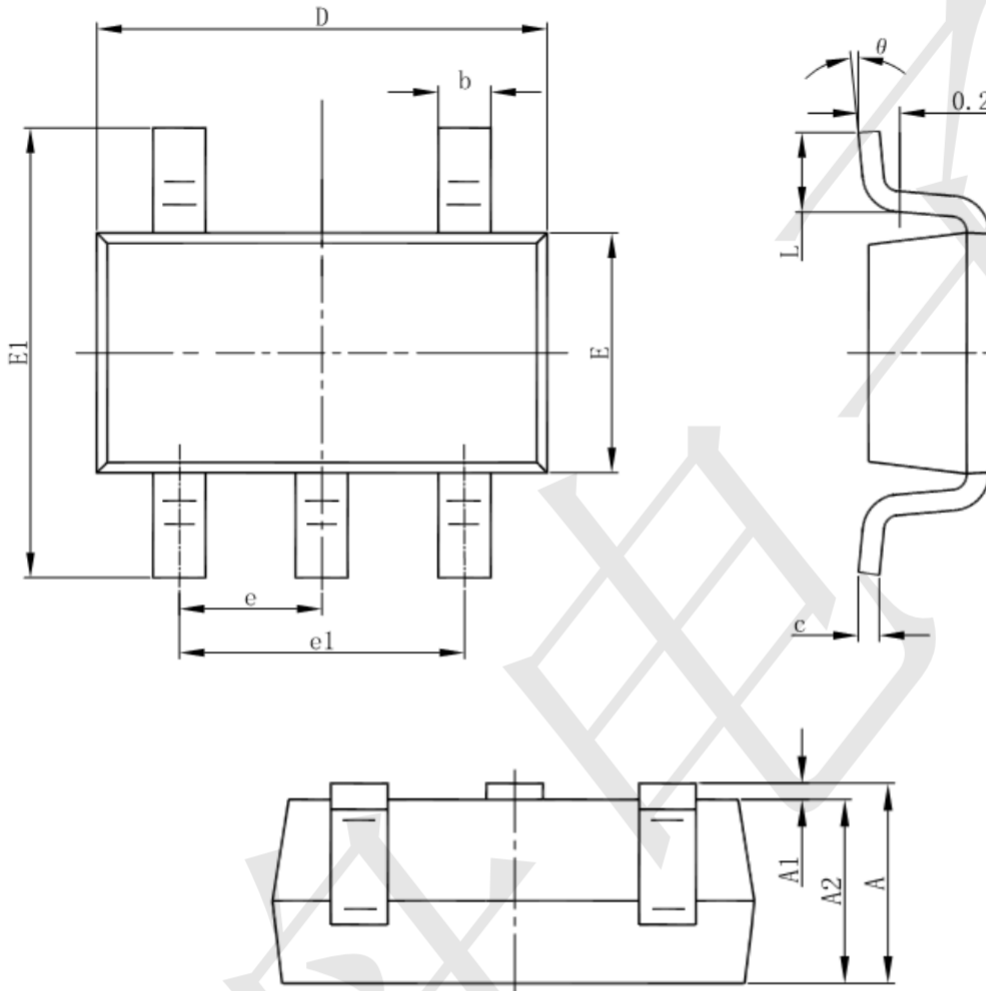
**Block Diagram**





### Package information

SOT23-5

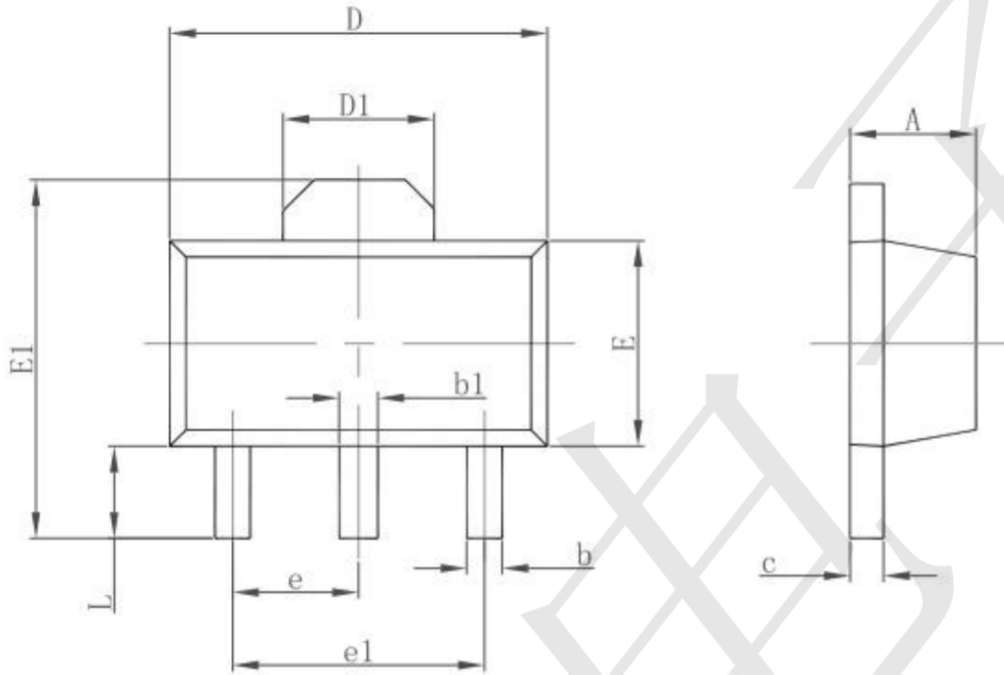


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)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



**Package information**

SOT89-3



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

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