

Features

- High Input Voltage Range: up to 12V
- Maximum Output Current: 250mA
- Low Quiescent current: 2 μ 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 μ 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

XC6201P302MR

PACKAGE TYPE

PR: SOT-89-3

MR: SOT-23-5

OUTPUT VOLTAGE

12: 1.2V

15: 1.5V

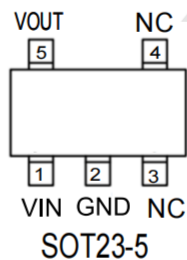
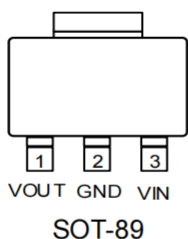
18: 1.8V

30: 3.0V

33: 3.3V

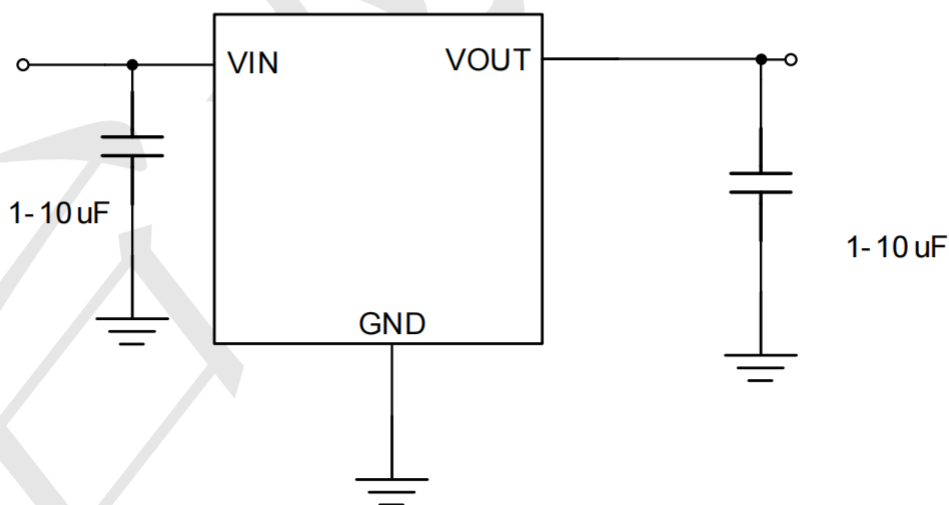
50: 5.0V

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_A=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

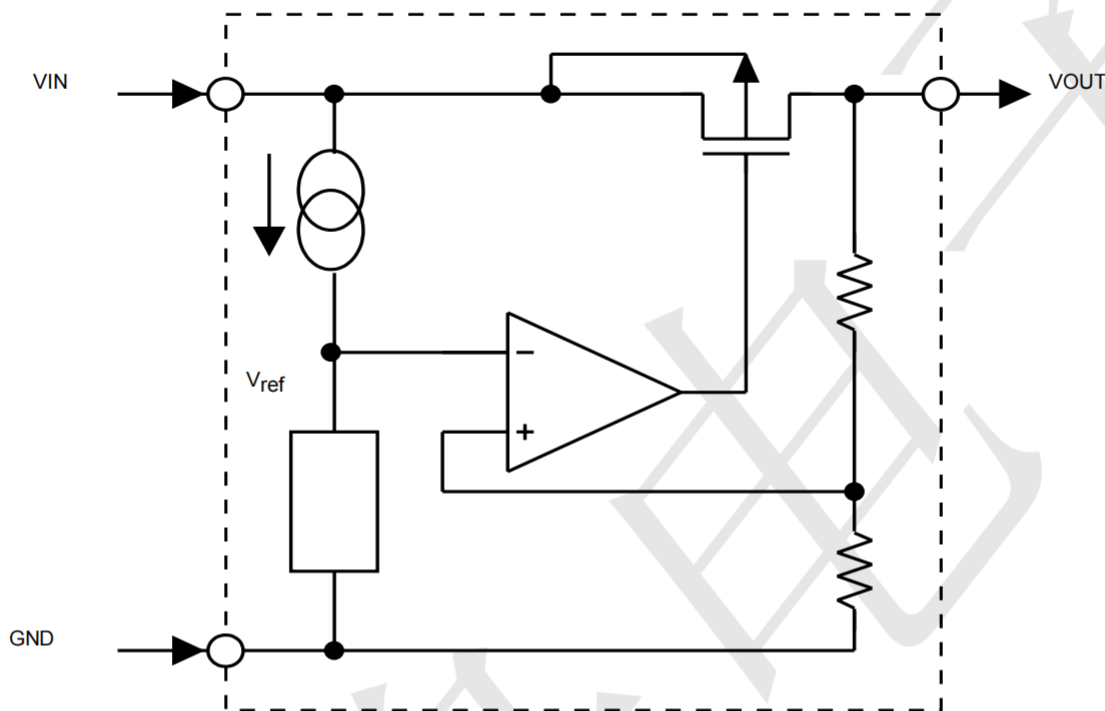
Parameter	Value	Unit
Supply Voltage	15	V
Maximum Output Current	300	mA
Operating Ambient Temperature	-40 ~ +85	°C

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

(V_{IN}=V_{OUT}+2, C_{IN}=10μF, C_{OUT}=10μF, T_A=25°C, unless otherwise noted.)

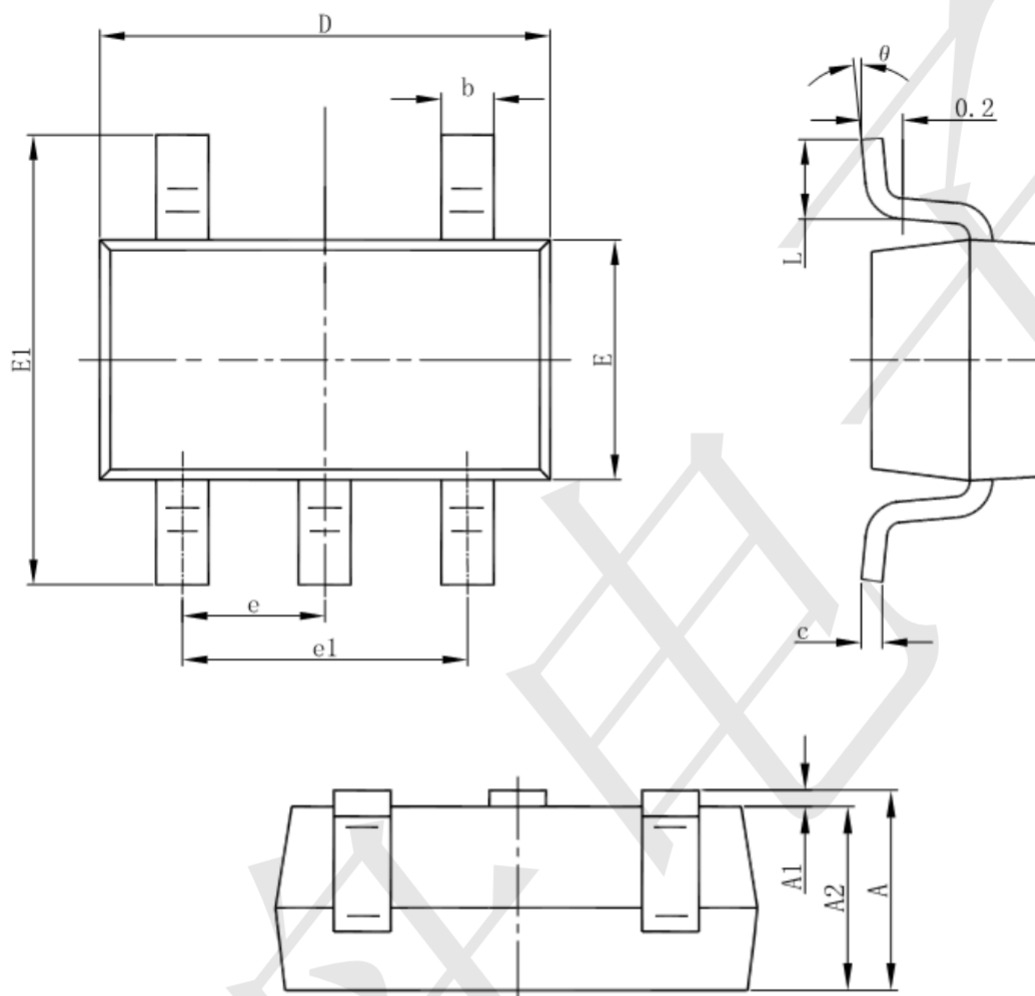
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	V _{IN}		--	--	12	V
Output Voltage Accuracy	ΔV _{OUT}	I _{OUT} =10mA	-2	--	+2	%
Max. Output Current	I _{OUT}		300	--	--	mA
Quiescent Current	I _Q	I _{OUT} =0mA	--	1.5	3	μA
Dropout Voltage ^{Note1}	V _{DROP}	2.8V ≤ V _{OUT} < 3.0V, I _{OUT} =10mA	--	30	55	mV
		3.0V ≤ V _{OUT} < 3.3V, I _{OUT} =100mA	--	210	300	
		3.3V ≤ V _{OUT} < 3.6V, I _{OUT} =100mA	--	195	300	
		3.6V ≤ V _{OUT} < 4.0V, I _{OUT} =100mA	--	180	300	
		4.0V ≤ V _{OUT} < 4.4V, I _{OUT} =100mA	--	170	300	
		4.4V ≤ V _{OUT} < 5.0V, I _{OUT} =100mA	--	160	300	
		5.0V ≤ V _{OUT} < 9.0V, I _{OUT} =100mA	--	150	300	
		9.0V ≤ V _{OUT} , I _{OUT} =100mA	--	130	300	
Line Regulation	ΔV _{LINE}	V _{IN} =V _{OUT} +2 to 20V, I _{OUT} =1mA	--	--	0.2	%/V
Load Regulation	ΔV _{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°C ≤ T _A ≤ 85°C	--	100	--	ppm/°C

Block Diagram



Package informantion

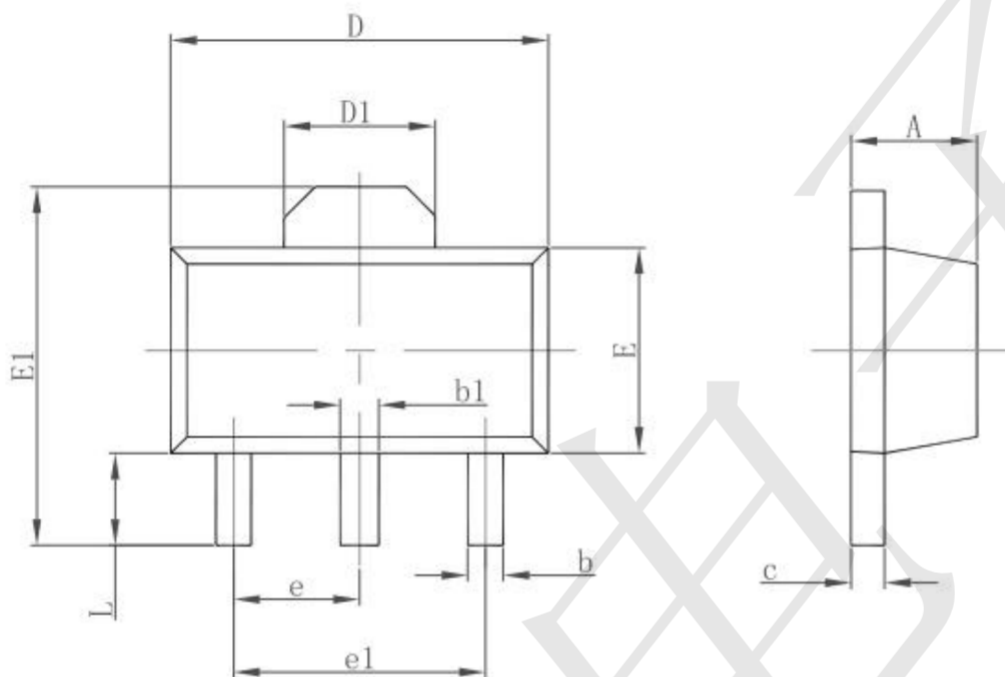
SOT23-5



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
θ	0°	8°	0°	8°

Package informantion

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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