

General Description

The XC6220B Series are a group of voltage regulators manufactured by CMOS technology with high ripple rejection, ultra-fast transient and low dropout voltage, which large output currents even when the difference of the input-output voltage is small. Each of the XC6220B of a high-precision voltage reference, error correction circuit, and a current limited output driver. Thus the series very suitable for the battery-powered equipments, wireless communication applications, industry equipments and so on.

Features

- 25 μ A Ground Current at no Load
- $\pm 2\%$ Output Accuracy
- 900mA Output Current
- Wide Operating Input Voltage Range: 1.2V to 5.5V
- Dropout Voltage: 0.45V at 800mA/ V_{OUT} 3.3V
- Support Fixed Output Voltage 1.2V, 1.5V, 1.6V, 1.8V, 2.5V, 2.8V, 3.0V, 3.3V, 3.6V
- Stable with Ceramic or Tantalum Capacitor
- Current Limit Protection
- Over Temperature Protection
- SOT23-5 Packages

Applications

- Battery powered systems
- Portable instrumentations
- PC peripherals
- CD/DVD-ROM, CD/RW
- Wireless devices
- Battery charger

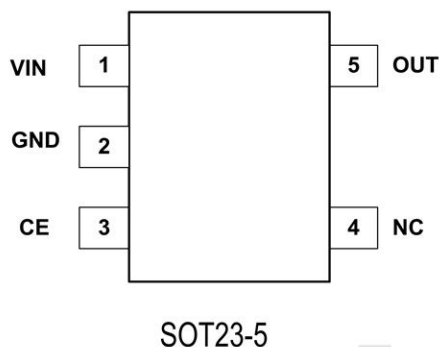
Ordering Information

XC6220B301MR

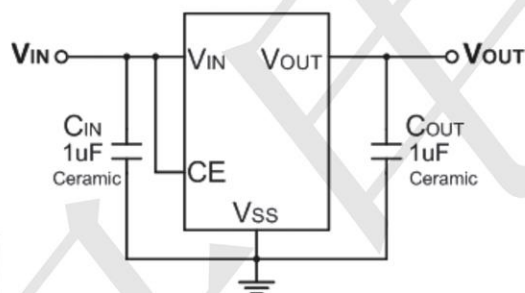
MR: SOT23-5 Package

Output voltage: 12=1.2V
15=1.5V
18=1.8V
30=3.0V
33=3.3V
36=3.6V

PIN CONFIGURATION



Typical Application Circuit



ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		V_{IN}	$V_{SS}-0.3 \sim V_{SS}+7$	V
Output Current		I_{OUT}	1000	mA
Output Voltage		V_{OUT}	$V_{SS}-0.3 \sim V_{IN}+0.3$	V
Power Dissipation	SOT23-5	P_d	250	mW
Operating Temperature		T_{opr}	-40~+85	°C
Storage Temperature		T_{stg}	-40~+125	°C
Soldering Temperature & Time		T_{solder}	260°C, 10s	

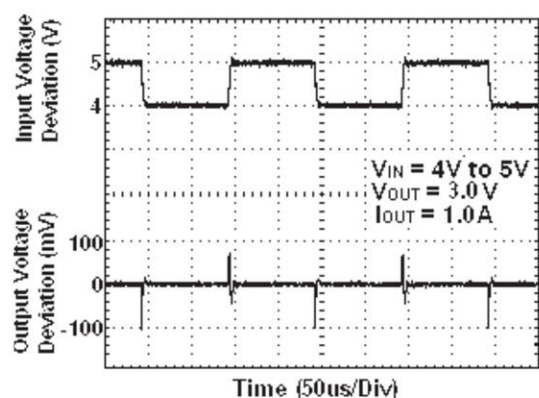
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

($V_{IN}=V_{OUT}+1\text{V}$, $C_{IN}=C_{OUT}=4.7\mu\text{F}$, $T_A=25^\circ\text{C}$)

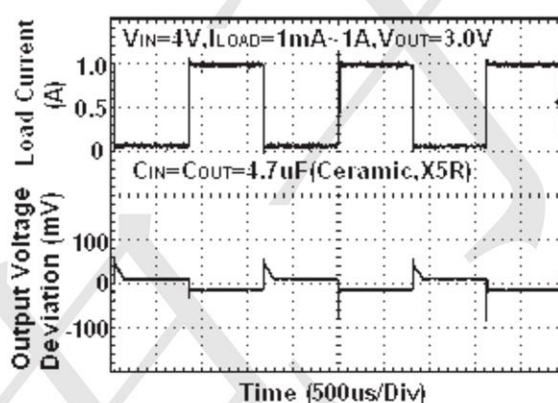
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT}=100\text{mA}$	V_{OUT} *0.98	V_{OUT} (Note 1)	V_{OUT} *1.02	V
Supply Current	I_{SS}				25	μA
Shutdown Current	I_{SHDN}	$V_{CE}=V_{SS}$		0.1	1.0	μA
Output Current	I_{OUT}	—		900		mA
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT}=300\text{mA}$		150		mV
	V_{dif2}	$I_{OUT}=800\text{mA}$		400		mV
Load Regulation	ΔV_{OUT}	$V_{IN}=V_{OUT}+1\text{V}$, $1\text{mA}\leq I_{OUT}\leq 1.0\text{A}$		30		mV
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} * V_{OUT}}$	$I_{OUT}=100\text{mA}$ $V_{OUT}+1\text{V}\leq V_{IN}\leq 6\text{V}$		0.02	0.2	%/V
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{\Delta T * V_{OUT}}$	$I_{OUT}=100\text{mA}$ $-40^\circ\text{C}\leq T\leq +85^\circ\text{C}$		50		ppm/ °C
Short Current	I_{Short}	$V_{OUT}=V_{SS}$		200		mA
Input Voltage	V_{IN}	—	2.0		6.0	V
Power Supply Rejection Rate	1KHz	PSRR $I_{OUT}=100\text{mA}$		70		dB
	10KHz			50		
CE "High" Voltage	$V_{CE"H"}$		0.6			V
CE "Low" Voltage	$V_{CE"L"}$				0.3	V
Thermal Shutdown Temperature	T_{SD}			150		°C
Thermal Shutdown Temperature Hysteresis	ΔT_{SD}			30		°C

Typical Characteristics

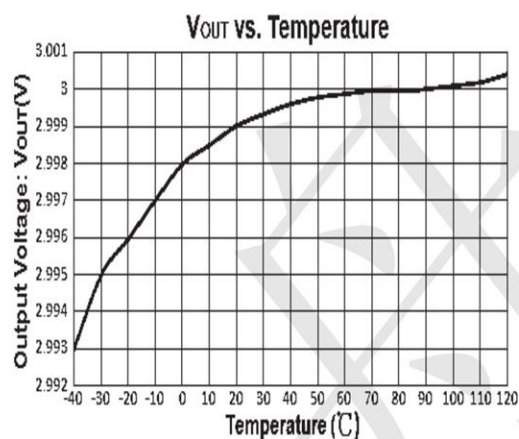
(1) Input Transient Response



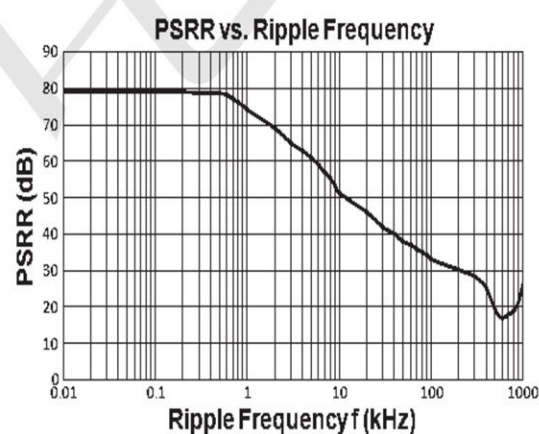
(2) Load Transient Response



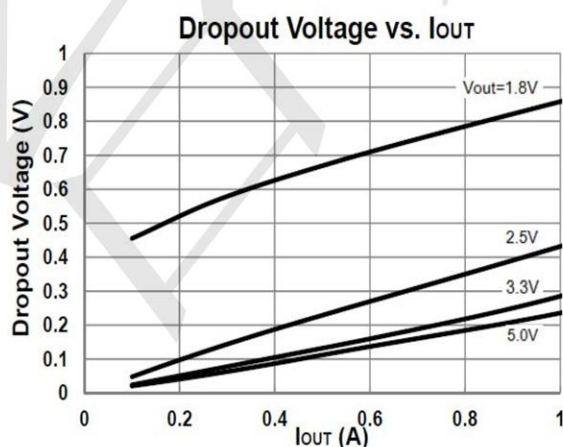
(3) Output Voltage vs. Temperature



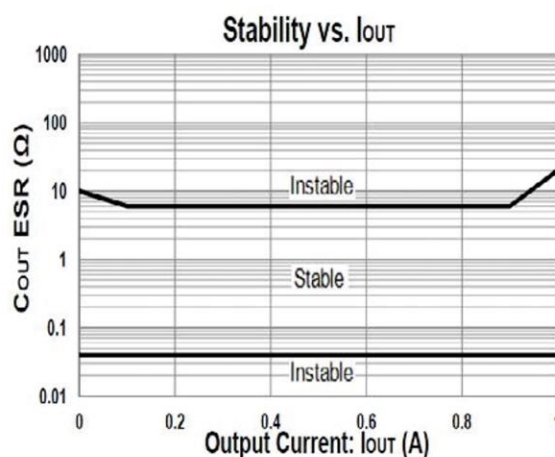
(4) Power Supply Rejection Ratio



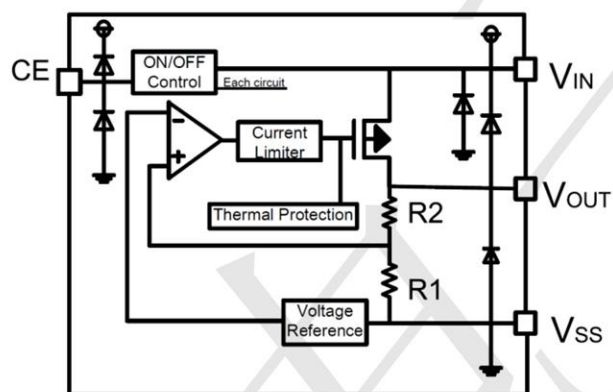
(5) Dropout Voltage vs. Output Current



(6) Region of Stable C_{OUT} ESR vs. Load

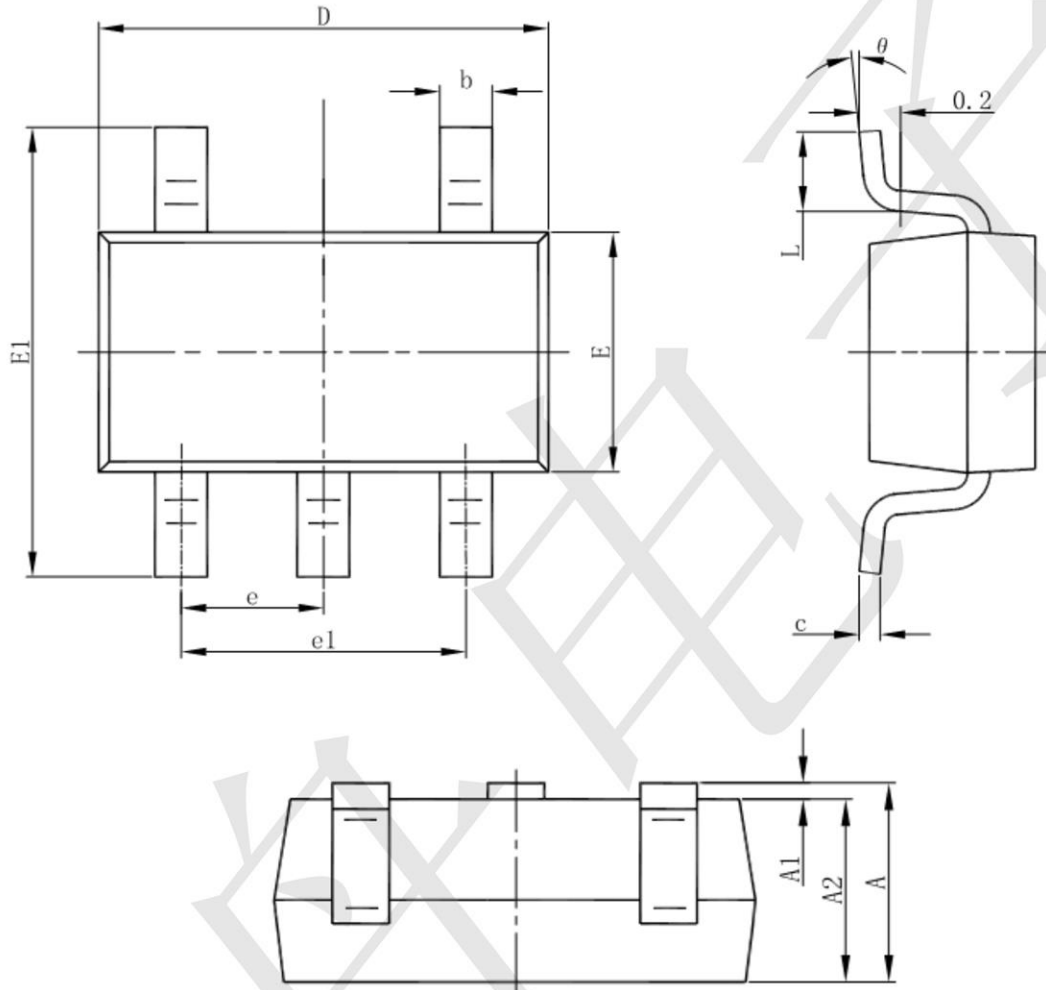


BLOCK DIAGRAM





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°