上海贝岭 SHANGHAI BELLING

BL8062

250mA Low Consumption Linear Regulator

DESCRIPTION

BL8062 series is a group of positive voltage output, low power consumption, low dropout voltage, three terminal regulator. It can provide 200mA output current when input / output voltage differential drops to 418mV (V_{OUT}=3.3V), And it also provides foldback short-circuit protection and output current limit function. The very low power consumption of BL8062 (I_Q=3uA) can greatly improve natural life of batteries.

BL8062 can provide output value in the range of 1.2V~5.0V in 0.1V steps. It also can customize on command.

BL8062 includes high accuracy voltage reference, error amplifier, current limit circuit and output driver module.

BL8062 has well load transient response and good temperature characteristic, And it uses trimming technique to guarantee output voltage accuracy within±2%.

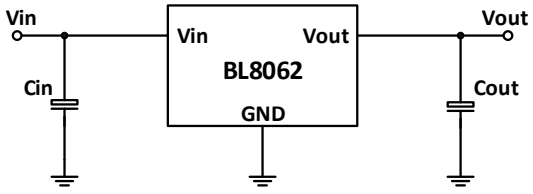
FEATURES

- Low power consumption: 3uA(Typ.)
- Maximum output current: 250mA
- Small dropout voltage
  211mV@100mA (V_{OUT}=3.3V)
  418mV@200mA (V_{OUT}=3.3V)
- Input voltage range: 2.5V~16V
- Output voltage range: 1.2V~5.0V (customized on command in 0.1V steps)
- Highly accurate:±2%(±1% customized)
- Output current limit: 500mA
- Foldback short-circuit current: 85mA

APPLICATIONS

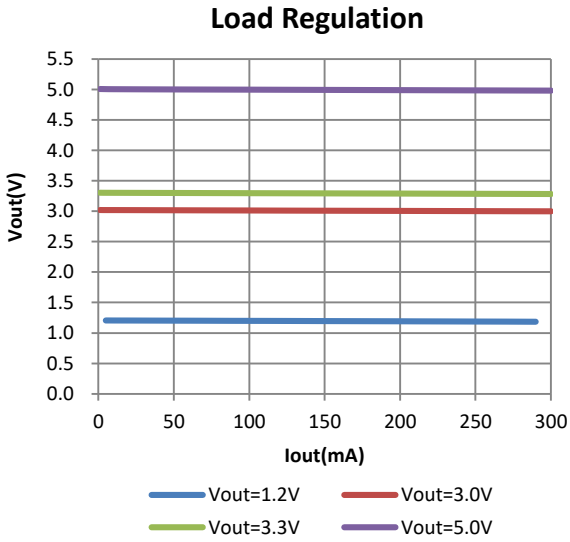
- Battery powered equipment
- Power management of MP3、PDA、DSC、mouse、PS2 games
- Reference voltage source regulation after switching power

TYPICAL APPLICATION



Note: *Input capacitor (C_{IN}=1uF) and output capacitor (C_{OUT}=1uF) are recommended in all application circuit. Ceramic capacitor is recommended.*

ELECTRICAL CHARACTERISTICS



ORDERING INFORMATION

BL8062 ①②③④⑤

Code	Description
①	Temperature&Rohs: C:-40~85°C ,Pb Free Rohs Std.
②	Package type: B3:SOT-23-3 B3B:SOT-23-3(B) C3:SOT-89-3 C3B:SOT-89-3(B)
③	Packing type: TR:Tape&Reel (Standard)
④	Output voltage: e.g. 12=1.2V 15=1.5V 50=5.0V
⑤	Voltage accuracy: 1=±1% Blank(default)=±2%

ABSOLUTE MAXIMUM RATING

Parameter		Value
Max input voltage		20V
Operating junction temperature(T_J)		-40°C -125°C
Power dissipation	SOT-23-3	250mW
	SOT-89-3	500mW
Storage temperature(T_S)		-40°C -150°C
Lead temperature & time		260°C,10S

Note:

Exceed these limits to damage to the device.
Exposure to absolute maximum rating conditions may affect device reliability.

RECOMMENDED WORK CONDITIONS

Item	Min	Recom-mended	Max.	Unit
Input voltage range			16	V
Ambient temperature	-40		85	°C

PIN CONFIGURATION

Product classification		BL8062CB3TR□□□
Marking		SOT-23-3
DXYW	D:Product code X:Output voltage YW: Date code	3 DXYW 1 2 1 GND 2 Vout 3 Vin
Product classification		BL8062CB3BTR□□□
Marking		SOT-23-3 (B)
DXYWI	D:Product code X:Output voltage YW: Date code	3 DXYWI 1 2 1 Vout 2 Vin 3 GND
Product classification		BL8062CC3TR□□□
Marking		SOT-89-3
AAXX LLBYW	AA:Product code XX: Output voltage LL: LOT NO. B:FAB code YW: Date code	AAXX LLBYW 1 2 3 1 GND 2 Vin 3 Vout
Product classification		BL8062CC3BTR□□□
Marking		SOT-89-3 (B)
AAXXI LLBYW	AA:Product code XX: Output voltage LL: LOT NO. B:FAB code YW: Date code	AAXXI LLBYW 1 2 3 1 Vout 2 GND 3 Vin

Y: The Year of manufacturing,"1" stands for year 20X1, "2" stands for year 20X2, and "8" stands for year 20X8. (X=0,1,2,….9)

W: The week of manufacturing. "A" stands for week 1,"Z" stands for week 26," $\overline{A}$ " stands for week 27," $\overline{Z}$ " stands for week 52.

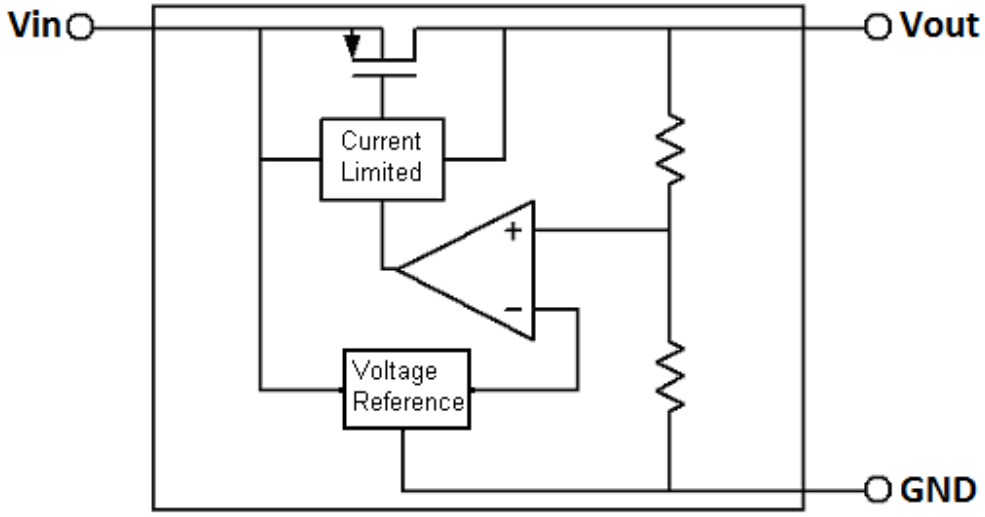
The date code of the 53rd week is the same as that of the first week of the next year. For example, the date code of the 53rd week of 2017 is the same as that of the first week of 2018, which are 1801 and 8A.

ELECTRICAL CHARACTERISTICS

(Test Conditions: C_{IN}=1uF, C_{OUT}=1uF, TA=25℃, Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min	Type	Max	Units
V_{IN}	Input voltage				16	V
V_{OUT}	Output voltage		V_{OUT} x0.98		V_{OUT} X1.02	V
I_{OUT} (Max.)	Maximum output current	V_{IN}-V_{OUT}=1V	250			mA
Dropout Voltage	Input-output voltage differential	I_{OUT}=100mA V_{OUT} = 3.3V		210	400	mV
$\frac{\Delta Vout}{\Delta Vin \cdot Vout}$	Line regulation	I_{OUT}=10mA 2V≤V_{IN}≤16V		0.2	0.3	%/V
$\Delta Vout$	Load regulation	V_{IN}=Set V_{OUT}+1V 1mA≤I_{OUT}≤100mA		20	40	mV
I_Q	Quiescent current	V_{IN}=Set V_{OUT}+1V		3	5	uA
$\frac{\Delta Vout}{\Delta T \cdot Vout}$	Output voltage temperature coefficient	I_{OUT}=10mA		100		ppm/°C

BLOCK DIAGRAM



EXPLANATION

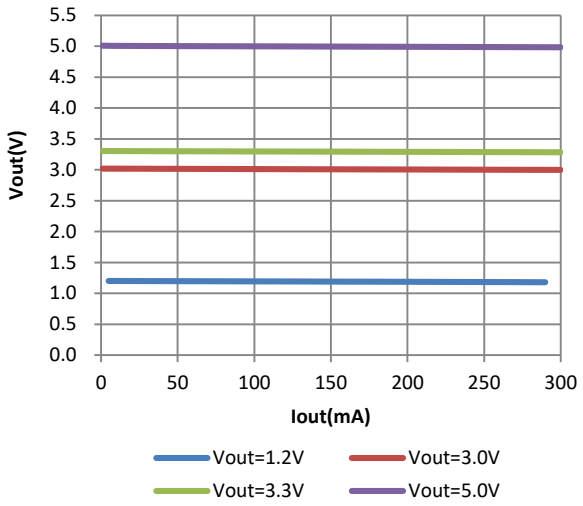
BL8062 is a series of low dropout voltage and low power consumption three pins regulator. Its application circuit is very simple, which only needs two outside capacitors. It is composed of these modules: high accuracy voltage reference, current limit circuit, error amplifier, output driver and power transistor.

Current Limit module can keep chip and power system away from danger when load current is more than 500mA.

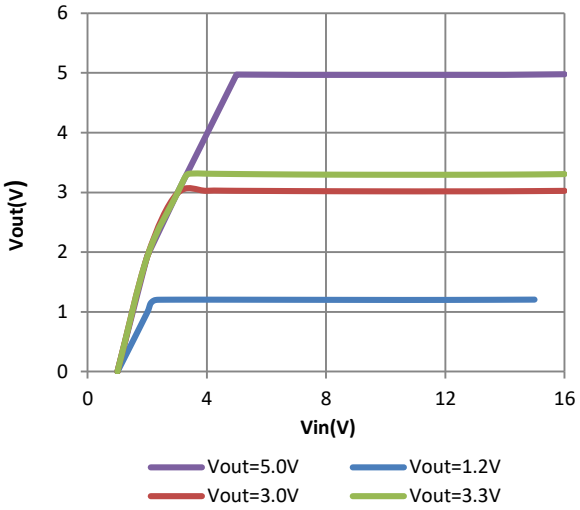
BL8062 uses trimming technique to assure the accuracy of output value within±2%, at the same time, temperature compensation is elaborately considered in this chip, which makes BL8062's temperature coefficient within 100ppm/℃。

TYPICAL PERFORMANCE CHARACTERISTICS

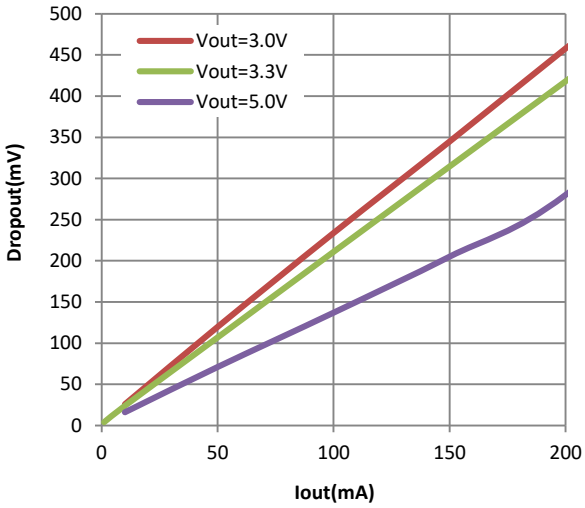
Load Regulation



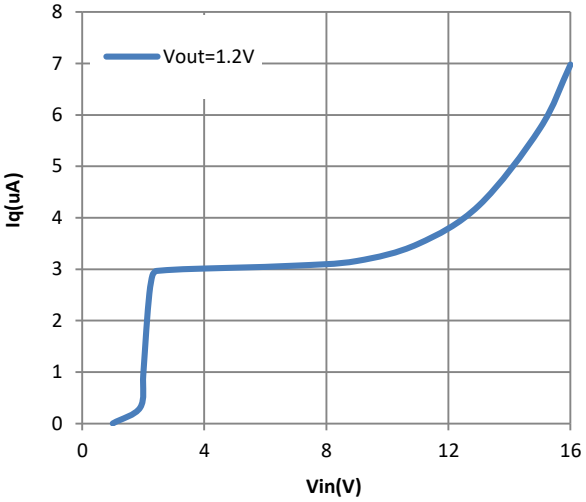
Line Regulation



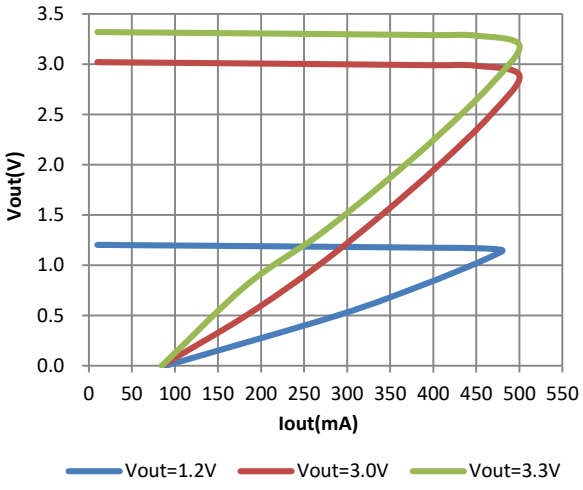
Dropout



Iq

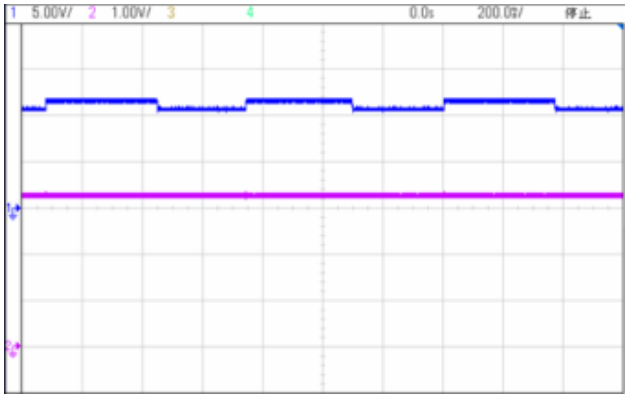


Current Limit



Line transient response

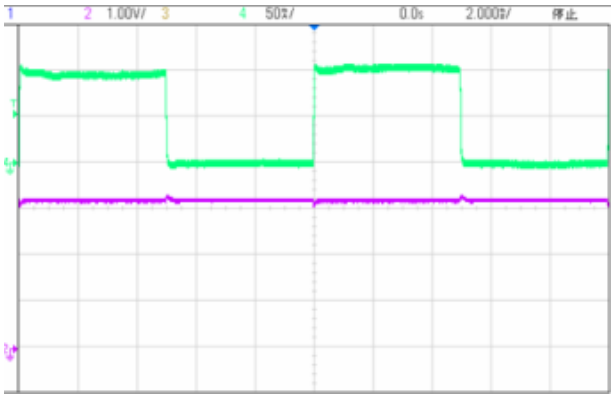
Vin=11V~12V



Ch1—Vin, Ch2—Vout

Load transient response

Iout=1mA~100mA

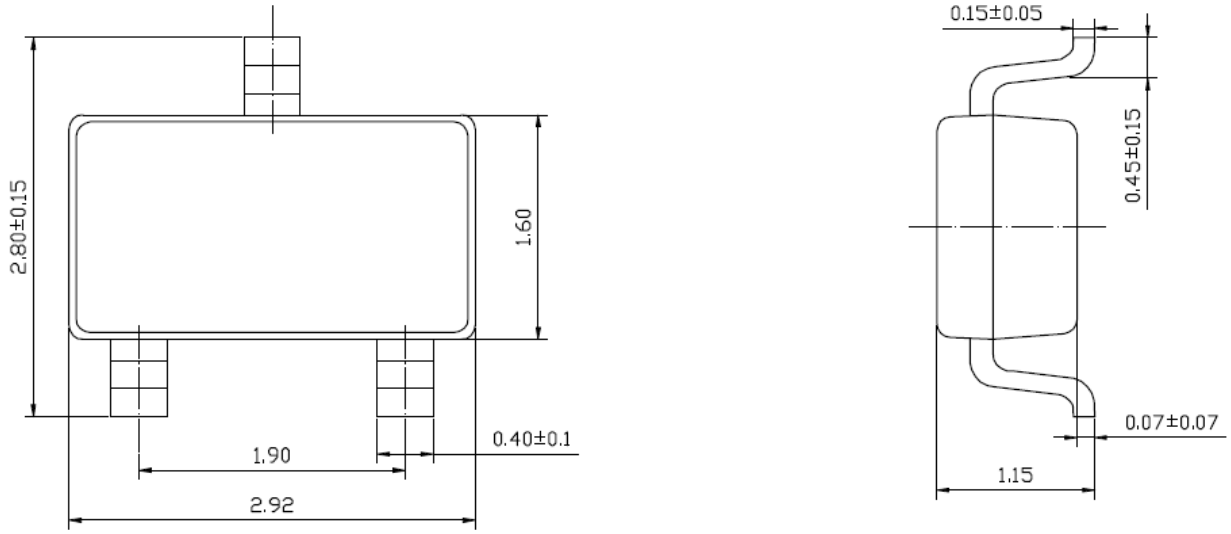


Ch2—Vout, Ch4—Iout

PACKAGE OUTLINE

Package	SOT-23-3	Devices per reel	3000Pcs	Vendor	WUXIHONGGUANG MICRO-ELECTRONICS CO., LTD

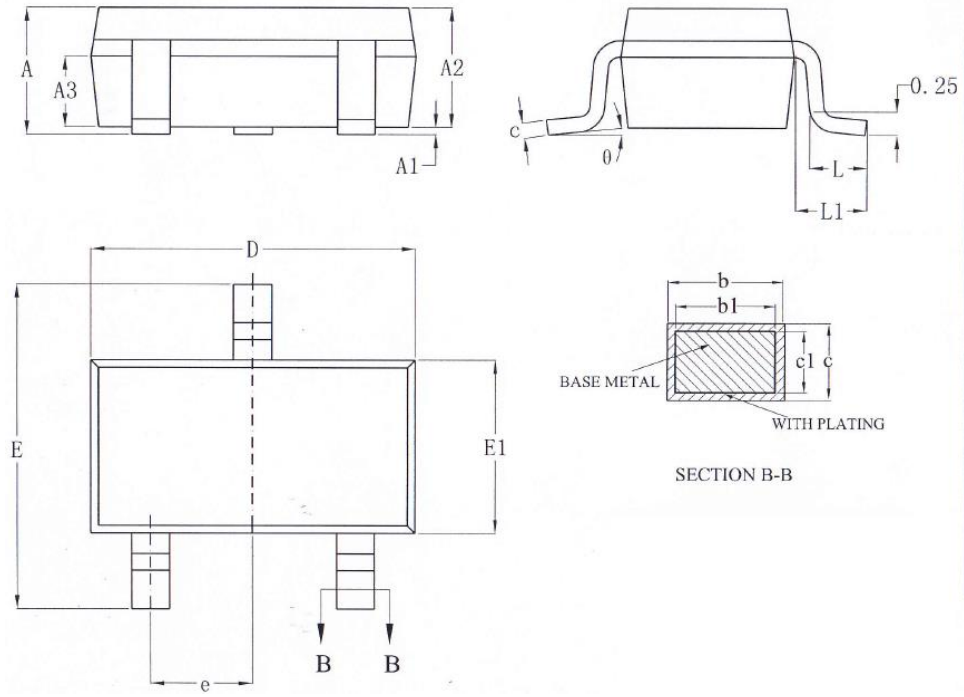
Package specification：



Unit: mm

Package	SOT-23-3	Devices per reel	3000Pcs	Vendor	Tian Shui Hua Tian Technology Co., Ltd

Package specification：

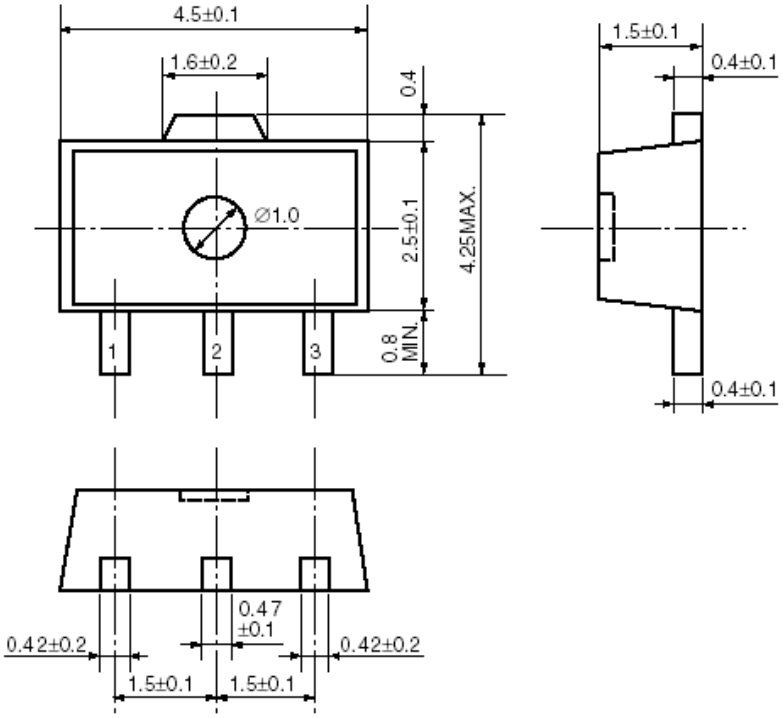


SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	—	—	1.25
A1	0.04	—	0.10
A2	1.00	1.10	1.20
A3	0.60	0.65	0.70
b	0.38	—	0.46
b1	0.37	0.40	0.43
c	0.13	—	0.17
c1	0.12	0.13	0.14
D	2.82	2.92	3.02
E	2.60	2.80	3.00
E1	1.50	1.60	1.70
e	0.95BSC		
L	0.30	—	0.60
L1	0.60REF		
θ	0	—	8°

Unit: mm

Package	SOT-89-3	Devices per reel	1000Pcs

Package Dimension:



Unit: mm