上海贝岭 SHANGHAI BELLING

BL8074G

800mA Ultra-Low Vin Low Dropout Voltage Linear Regulator

DESCRIPTION

BL8074G series are a group of positive voltage output, high precise, and low power consumption voltage regulator. Voltages are selectable in 100mV steps within a range of 1.2V to 5.0V. It also can be customized on command.

BL8074G series have excellent load and line transient response and good temperature characteristics, which can assure the stability of chip and power system. And it uses trimming technique to guarantee output voltage accuracy within ±2%.

BL8074G series are available in SOT89-3 package, which is lead(Pb)-free.

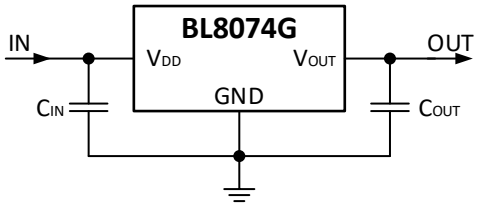
FEATURES

- Low quiescent current: 100uA (Typ.)
- Low dropout voltage:
  35mV@I_{OUT}=100mA, V_{OUT}=3.3V(Typ.)
  250mV@I_{OUT}=800mA, V_{OUT}=3.3V(Typ.)
- High PSRR: 65dB@100Hz (Typ.)
- Maximum output current: 800mA
- Low temperature coefficient: ±100ppm/°C
- Output voltage range: 1.2V~5.0V
- Highly accurate: ±2%
- Thermal shutdown
- Overcurrent protection

APPLICATIONS

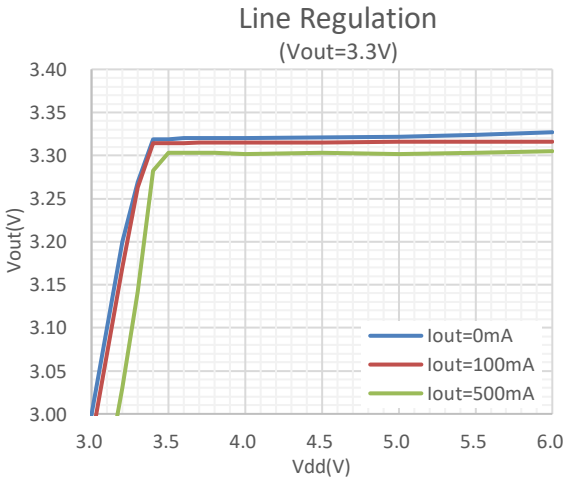
- Reference voltage source
- Battery powered equipment
- PC peripherals
- Wireless devices
- Instrumentation

TYPICAL APPLICATION



Note: *Input capacitor (C_{IN}=4.7uF) and output capacitor (C_{OUT}=4.7uF) are recommended in all application circuit.*

ELECTRICAL CHARACTERISTICS

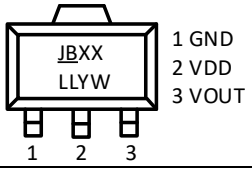


ORDERING INFORMATION

BL8074G 1 2 3 4 5

Code	Description
1	Temperature&Rohs: C: -40~85°C, Pb Free Rohs Std.
2	Package type: C3: SOT89-3
3	Packing type: TR:Tape&Reel (Standard)
4	Output voltage: e.g., 12=1.2V 18=1.8V 25=2.5V 33=3.3V 50=5.0V
5	Voltage accuracy: 1=±1%(Customized) Blank(default)=±2%

PIN CONFIGURATION

Product classification		BL8074GCC3TR☐☐
JBXX LLYW	JB: Product code XX: Output voltage LL: Lot No. YW: Date code	SOT89-3 
VDD	Supply voltage input	
GND	Ground pin	
VOUT	Output voltage	

XX: Output Voltage, e.g., 18=1.8V, 33=3.3V.

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, "$\bar{A}$" stands for week 27, "$\bar{Z}$" 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.

ABSOLUTE MAXIMUM RATING

Parameter		Value
Max input voltage		6V
Max operating junction temperature (T_J)		125°C
Max Output current		800mA
Power dissipation	SOT89-3	800mW
Package thermal resistance (θ_{JC})	SOT89-3	25°C/W
Storage temperature (T_S)		-65°C to 150°C
Lead temperature & time		260°C, 10s
ESD (HBM)		>2000V

Note:

1) Package Thermal Resistance value can be affected by PCB design, outside radiator, ambient airflow, operating power, etc. It is just shown for reference.

2) Exceed these limits to damage to the device.

3) Exposure to absolute maximum rating conditions may affect device reliability.

RECOMMENDED WORK CONDITIONS

Parameter	Value
Input voltage range	Max. 6V
Ambient temperature	-40°C to 85°C

ELECTRICAL CHARACTERISTICS

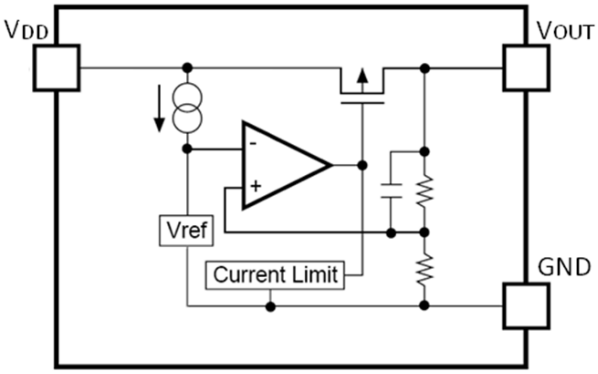
Test condition: C_{IN}=4.7uF, C_{OUT}=4.7uF, T_A=25°C, unless otherwise specified.

Symbol	Parameter		Conditions	Min	Typ	Max	Units
V_{DD}	Input voltage			1.5*		6	V
V_{OUT}	Output voltage	V_{OUT}>1.5V	V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤10mA	V_{OUT} X0.98	V_{OUT}	V_{OUT} X1.02	V
		V_{OUT}≤1.5V		V_{OUT} -0.03		V_{OUT} +0.03	
I_{OUT} (Max.) **	Maximum output current		V_{DD}-V_{OUT}=1V	0.8			A
V_{DROP}	Dropout voltage		V_{OUT} =3.3V, I_{OUT}=800mA		250	350	mV
$\frac{\Delta Vout}{\Delta Vdd \cdot Vout}$	Line regulation		I_{OUT}=10mA, 4V≤V_{DD}≤6V		0.05	0.2	%/V
$\Delta Vout$	Load regulation		V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤800mA		30	60	mV
I_Q	Supply current		V_{DD}=Set V_{OUT}+1V, V_{OUT} floating		100	150	uA
$\frac{\Delta Vout}{\Delta T \cdot Vout}$	Output voltage temperature coefficient		I_{OUT}=10mA		±100		ppm/°C
PSRR	Ripple rejection		f=100Hz, ripple=0.5Vp-p, V_{DD}=Set V_{OUT}+1V		65		dB
T_{SD}	Thermal shutdown temp		V_{DD}=Set V_{OUT}+1V, I_{OUT}=10mA		170		°C
T_{SH}	Thermal shutdown hysteresis		V_{DD}=Set V_{OUT}+1V, I_{OUT}=10mA		35		°C

Note: **I_{OUT}=350mA@V_{DD}=1.5V, V_{OUT}=1.2V*

***The maximum power rating of each package is a constant, so along with the change of I_{LOAD}, the V_{DD}-V_{OUT} should be controlled to a certain range to ensure the normal operation.*

BLOCK DIAGRAM



EXPLANATION

BL8074G series is a group of positive voltage output, low noise, low power consumption, low dropout voltage regulator.

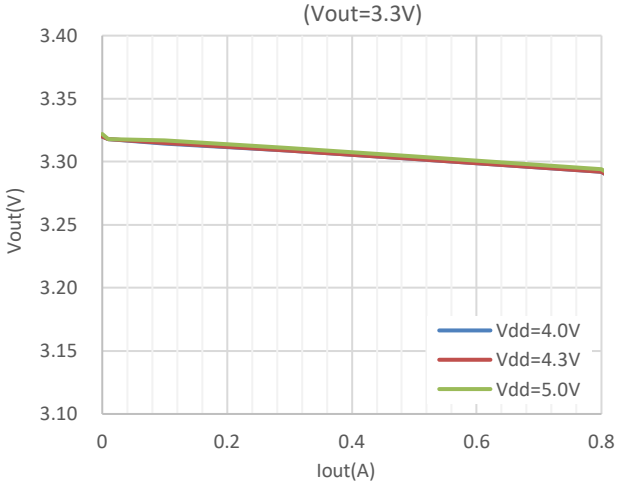
BL8074G can provide output value in the range of 1.2V~5.0V every 0.1V step. It also can be customized on command.

BL8074G includes high accuracy voltage reference, error amplifier, current limit circuit and output driver module.

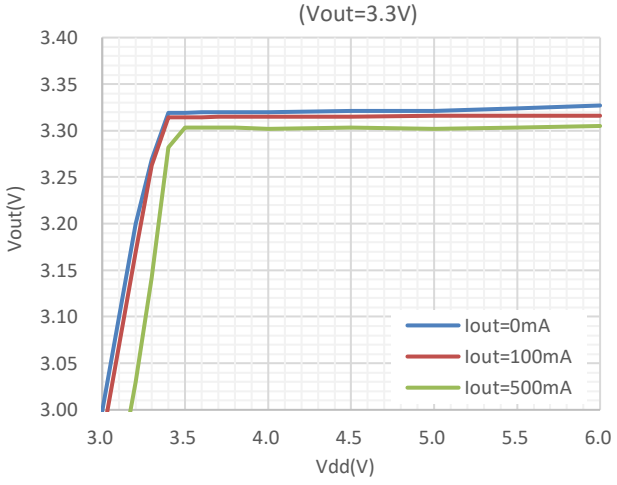
BL8074G has excellent load and line transient response and good temperature characteristics, which can assure the stability of chip and power system. And it uses trimming technique to guarantee output voltage accuracy within ±2%.

TYPICAL PERFORMANCE CHARACTERISTICS

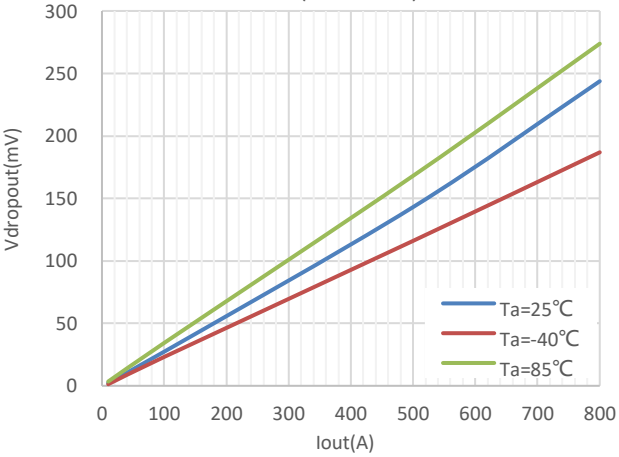
Load Regulation
(Vout=3.3V)



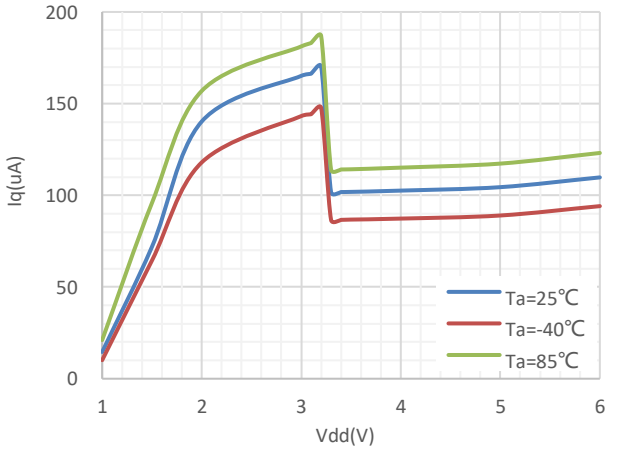
Line Regulation
(Vout=3.3V)



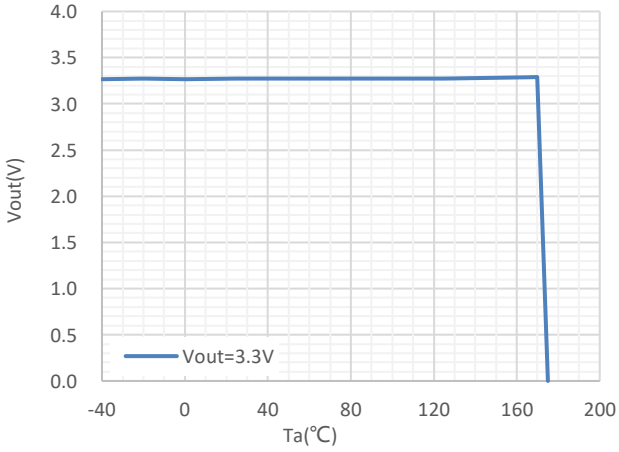
Dropout Voltage
(Vout=3.3V)



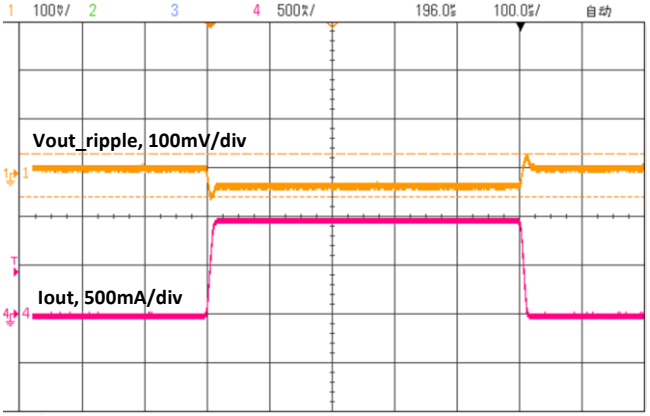
I_Q
(Vout=3.3V)



Vout vs. Temp
(Vdd=5V, Iout=10mA)



Load Transient Response
(Vdd=5V, Vout=3.3V, Iout=10mA-800mA, Trise=10us)

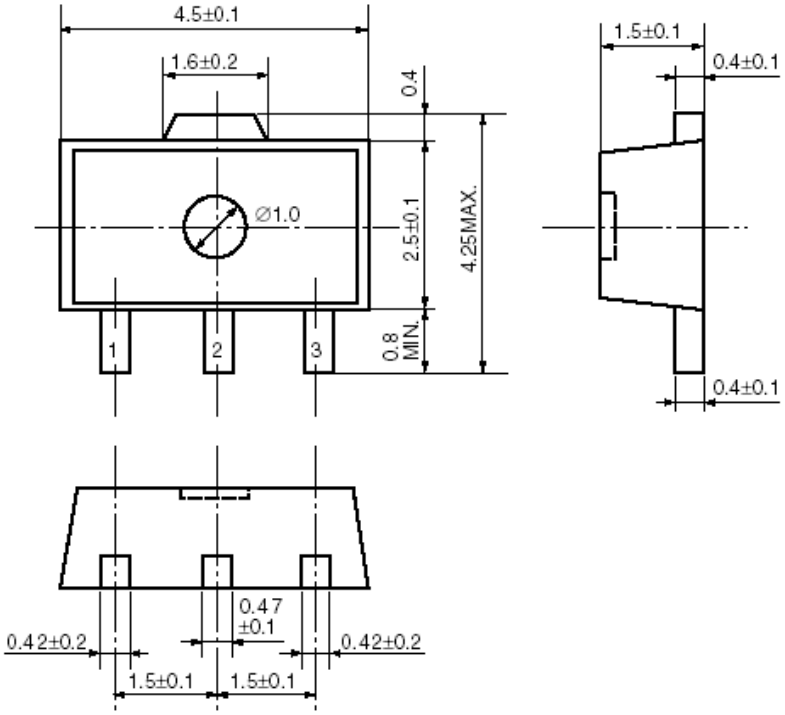


CH1: Vout_ripple, CH4: Iout

PACKAGE OUTLINE

Package	SOT89-3	Devices per reel	1000pcs

Package dimension:



Unit: mm