上海贝岭
SHANGHAI BELLING

BL8079G

300mA High PSRR, Fast Response Linear Regulator

DESCRIPTION

BL8079G series is a group of positive voltage output, low power consumption, low dropout voltage regulator.

BL8079G can provide output value adjustable from 0.8V to 5.0V.

BL8079G includes high accuracy voltage reference, error amplifier, current limit circuit and output driver module with discharge capability.

BL8079G has excellent load and line transient response and good temperature characteristics, which can assure the stability of chip and power system. It uses trimming technique to guarantee output voltage accuracy within ±2%. And it also provides fold back short-circuit protection, thermal shutdown and output current limit function.

BL8079G is available in SOT23-5 package which is lead-free.

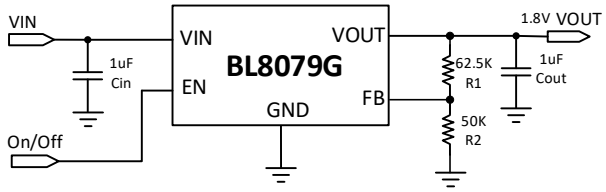
FEATURES

- Low power consumption: 65uA (Typ.)
- Maximum output current: 300mA
- Low dropout voltage: 170mV@I_{OUT}=300mA, V_{OUT}=3.3V
- Build-in chip enable and discharge circuit
- Input voltage range: 2~6V
- Adjustable output from 0.8V to 5.0V
- Output voltage accuracy: ±2%
- Output current limit
- Short circuit protection
- Over temperature protection

APPLICATIONS

- Power source for cellular phones and various kind of PCSs
- Battery powered equipment
- Power management of MP3, PDA, DSC, Mouse, PS2 games
- Reference voltage source
- Regulation after switching power

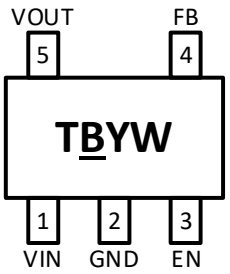
TYPICAL APPLICATION



Note:

1) $V_{OUT}=V_{FB}*(1+\frac{R1}{R2})$, V_{FB}=0.8V

PIN OUT & MARKING



SOT23-5

TB: Product code

YW: Date code (Year & Week)

ORDERING INFORMATION

Part No.	Package	Tape&Reel
BL8079GCB5TR	SOT23-5	3000pcs/reel

ABSOLUTE MAXIMUM RATING

Parameter		Value
Max input voltage		8V
Operating junction temperature (T_J)		125°C
Ambient temperature (T_A)		-40°C to 85°C
Power dissipation	SOT23-5	400mW
Package thermal resistance (θ_{JA})		220°C/W
Package thermal resistance (θ_{JC})		100°C/W
Storage temperature (T_S)		-40°C to 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

Parameter	Value
Input voltage range	2V to 6V
Ambient temperature	-40°C to 85°C

ELECTRICAL CHARACTERISTICS

Test condition: C_{IN}=1uF, C_{OUT}=1uF, T_A=25°C, unless otherwise stated.

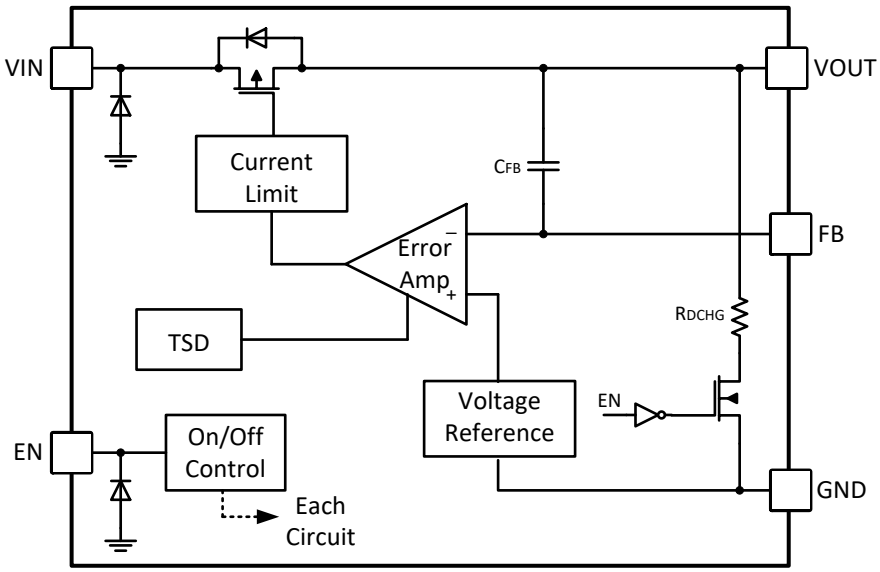
Symbol	Parameter	Conditions	Min	Typ	Max	Units
V_{IN}	Input voltage		2		6	V
V_{FB}	Regulated feedback voltage	V_{IN}=3.3V, I_{OUT}=10mA	0.784	0.8	0.816	V
V_{DROP}	Dropout voltage(1)	V_{OUT}=1.2V, I_{OUT}=300mA		600	800	mV
		V_{OUT}=1.8V, I_{OUT}=300mA		310	400	mV
		V_{OUT}=3.3V, I_{OUT}=300mA		170	220	mV
$\frac{\Delta Vout}{\Delta Vin \cdot Vout}$	Line regulation	I_{OUT}=10mA, 2.5V≤V_{IN}≤6V		0.05	0.2	%/V
$\Delta Vout$	Load regulation	V_{IN}=4.3V, V_{OUT}=3.3V 10mA≤I_{OUT}≤300mA		10	30	mV
I_Q	Supply current	V_{IN}=V_{OUT} +1V, V_{IN}=V_{EN}		65	100	uA
$I_{STANDBY}$	Supply current (standby)	V_{IN}=V_{OUT} +1V, V_{EN}=GND		0.1	1.0	uA
$\frac{\Delta Vout}{\Delta T \cdot Vout}$	Output voltage temperature coefficient	I_{OUT}=10mA		±100		ppm/°C
PSRR	Ripple rejection	F=1KHz, Ripple=1Vp-p V_{IN}=V_{OUT} +1V		65		dB
I_{LIM}	Current limit	V_{IN}=4.3V, V_{OUT}=3.3V	300			mA
I_{SHORT}	Short current limit	V_{OUT}=0V		200		mA
R_{DIS}	Discharge resistor	EN=0, V_{OUT}=3V		2K		Ω
V_{EN_H}	EN input voltage "H"		1.5		V_{IN}	V
V_{EN_L}	EN input Voltage "L"		0		0.3	V
T_{SD}	Thermal shutdown temp			160		°C
T_{SH}	Thermal shutdown hysteresis			30		°C

Note: *1) V_{DROP}= V_{IN}-V_{OUT} when V_{OUT} drops below 98% of the normal V_{OUT}.*

PIN DESCRIPTION

Pin #	Name	Description
1	VIN	Supply voltage input. Supply voltage can range from 2V to 6V.
2	GND	Ground pin.
3	EN	Enable pin. This pin has an internal pull-down resistor. A logic low reduces the supply current to less than 1μA. Connect to VIN for normal operation.
4	FB	Feedback pin. This is used to set the output voltage of the device.
5	VOUT	Output voltage.

BLOCK DIAGRAM



EXPLANATION

BL8079G series is a group of positive voltage output, low noise, low power consumption, low dropout voltage regulator.

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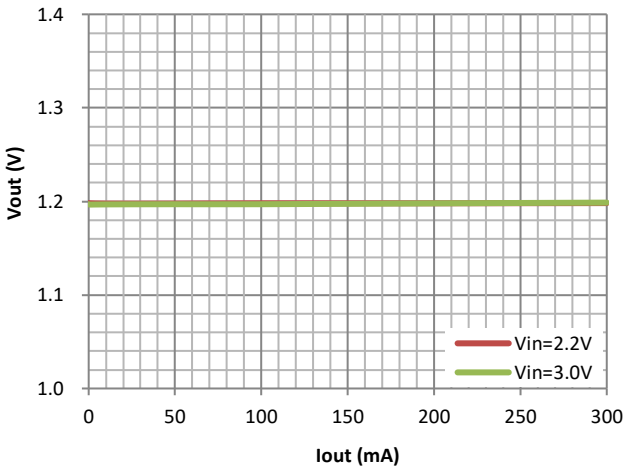
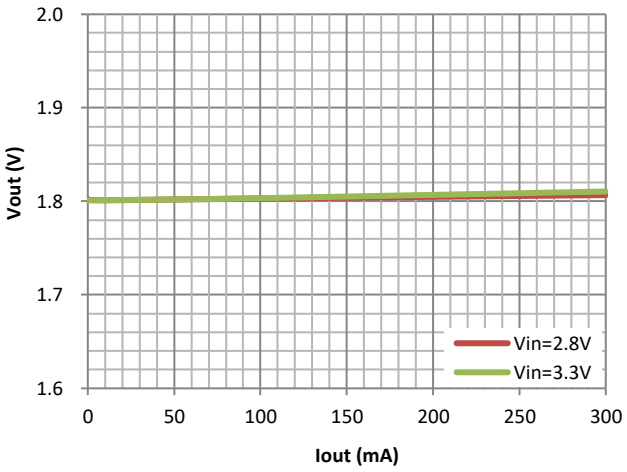
TYPICAL PERFORMANCE CHARACTERISTICS

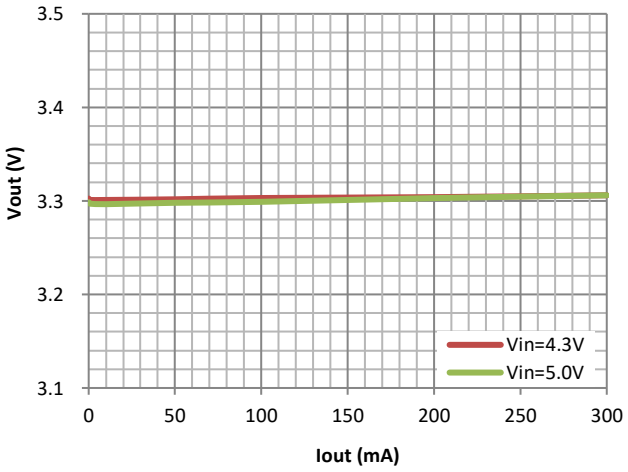
Load Regulation (Vout=1.2V)



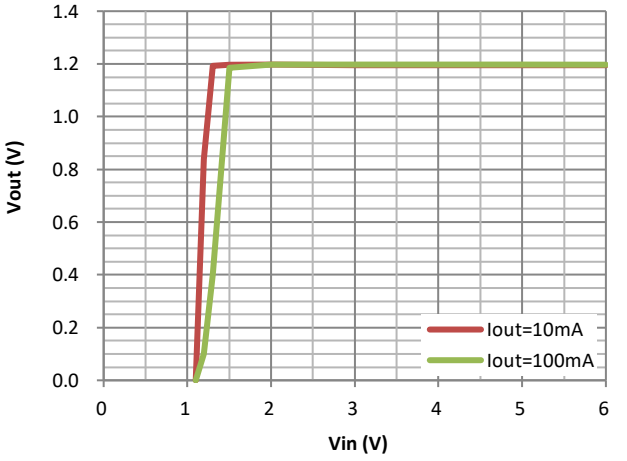
Load Regulation (Vout=1.8V)



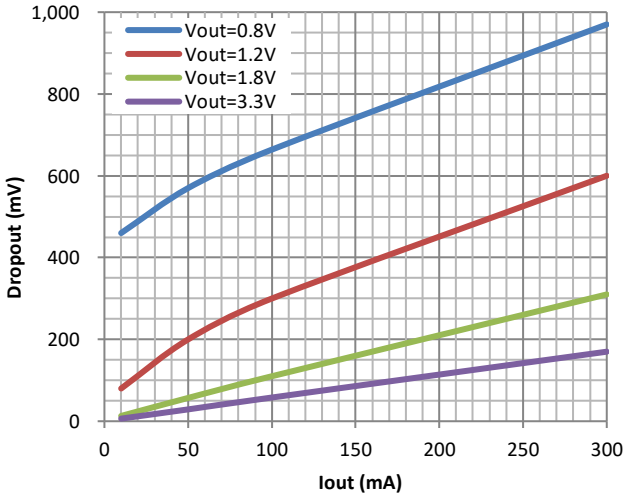
Load Regulation (Vout=3.3V)



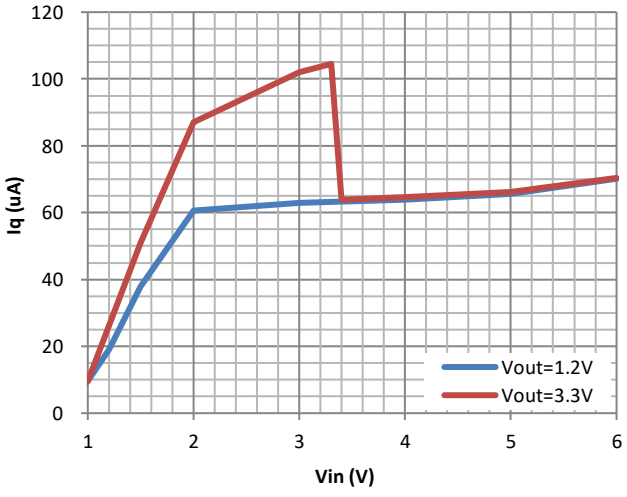
Line Regulation (Vout=1.2V)



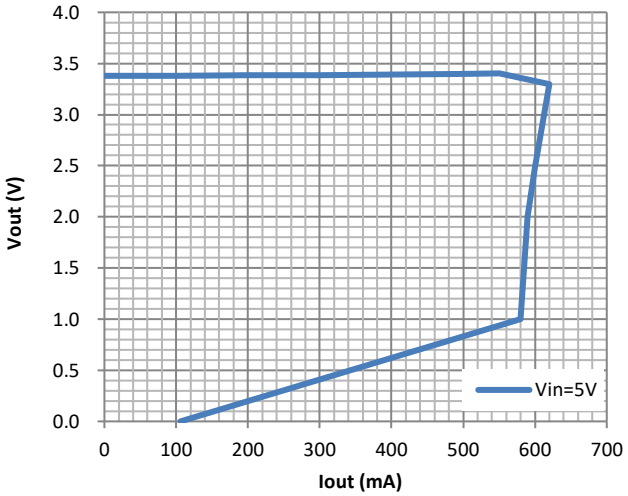
Dropout Voltage



Iq

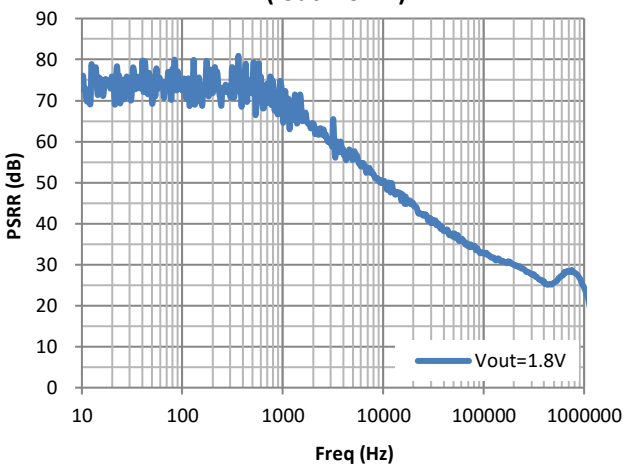


Current limit



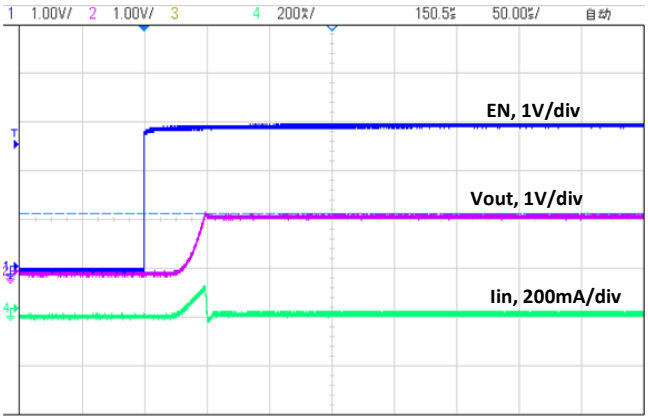
PSRR

(Iout=10mA)



EN Chip Enable Response

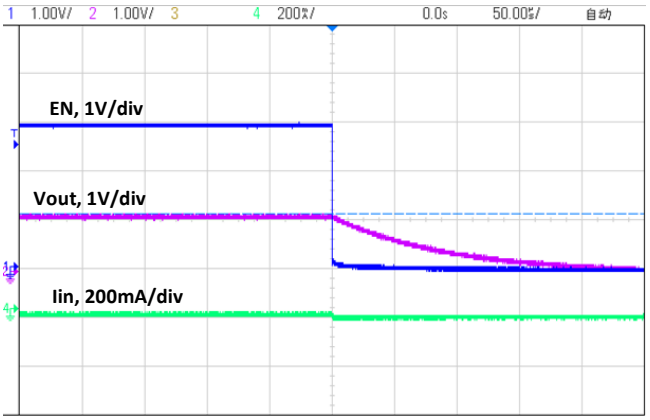
(EN=0V to 3V, Vin=5V, Vout=1.2V, Iout=10mA)



CH1: EN, CH2: Vout, CH4: Iin

EN Chip Enable Response

(EN=3V to 0V, Vin=5V, Vout=1.2V, Iout=10mA)

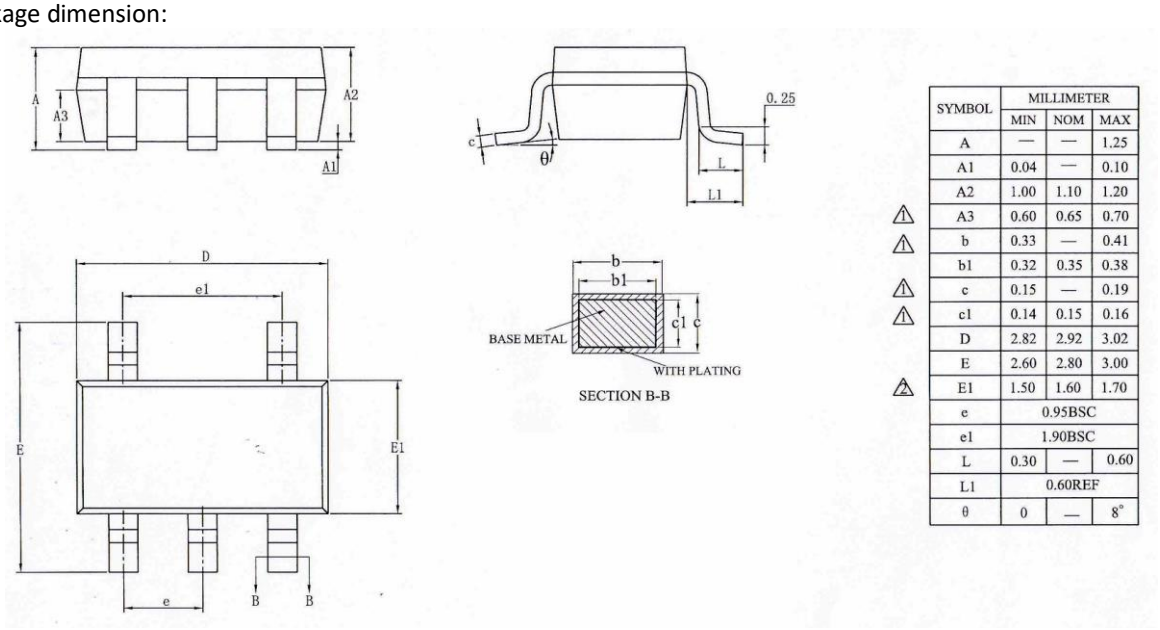


CH1: EN, CH2: Vout, CH4: Iin

PACKAGE OUTLINE

Package	SOT23-5	Devices per reel	3000pcs

Package dimension:

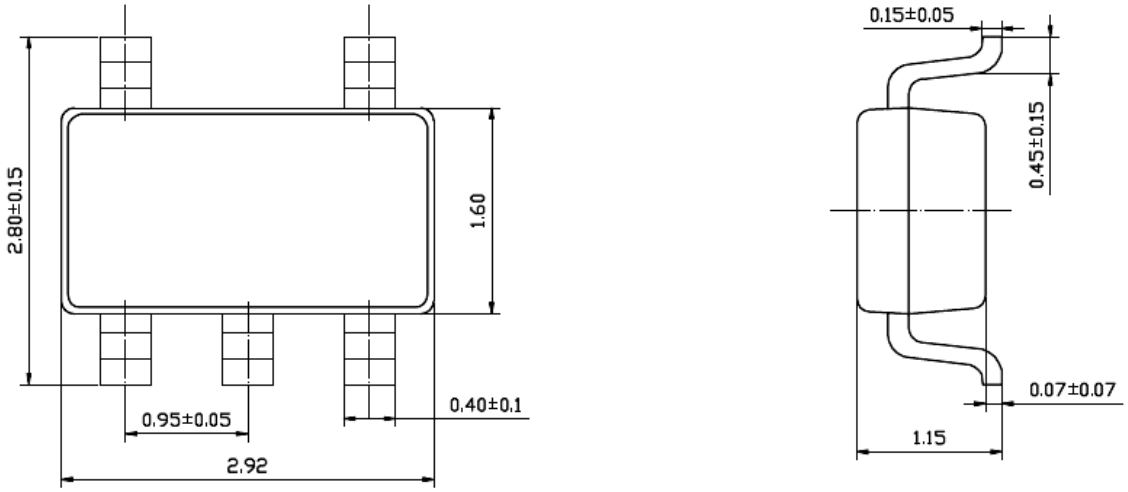


SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	—	—	1.25
A1	0.04	—	0.10
A2	1.00	1.10	1.20
⚠1 A3	0.60	0.65	0.70
⚠1 b	0.33	—	0.41
b1	0.32	0.35	0.38
⚠1 c	0.15	—	0.19
⚠1 c1	0.14	0.15	0.16
D	2.82	2.92	3.02
E	2.60	2.80	3.00
⚠2 E1	1.50	1.60	1.70
e	0.95BSC		
e1	1.90BSC		
L	0.30	—	0.60
L1	0.60REF		
θ	0	—	8°

Unit: mm

Package	SOT23-5	Devices per reel	3000pcs

Package dimension:



Unit: mm