上海贝岭
SHANGHAI BELLING

BL8559

2A Linear Regulator

GENERAL DESCRIPTION

BL8559 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 3.6V. It also can be customized on command.

BL8559 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%.

BL8559 series are available in SOT-223 package, which is lead (Pb)- free.

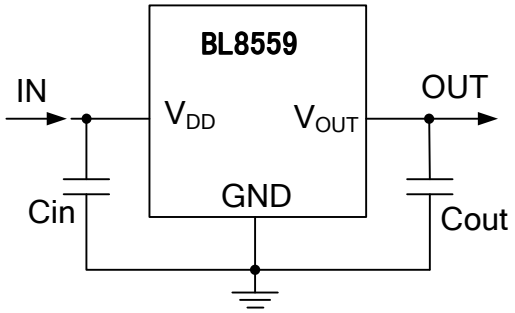
FEATURES

- Low Quiescent Current: 26uA at 5V
- High PSRR: 60dB range to 1KHz
- Low Output Noise: 44uVRMS
- Low Dropout: 430mV at 1.5A load
- Maximum output current: 2.5A
- Highly Accurate: ±2%
- Low ESR Ceramic Capacitor Compatible

APPLICATIONS

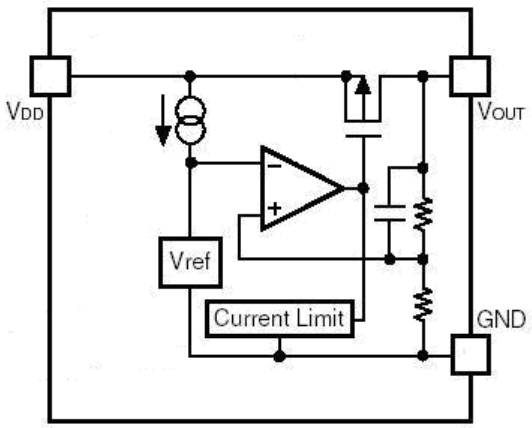
- Reference Voltage Source
- Battery Powered Equipment
- PC Peripherals
- Wireless Devices
- Instrumentation

TYPICAL APPLICATION

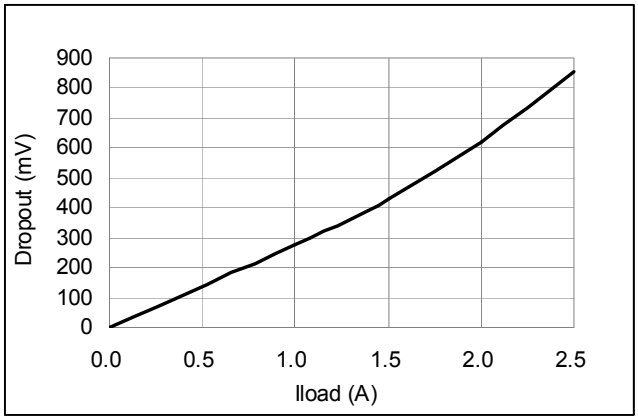


NOTE: Input capacitor (Cin=1uF) and Output capacitor (Cout=4.7uF) are recommended in all application circuit (Low ESR ceramic capacitor is available).

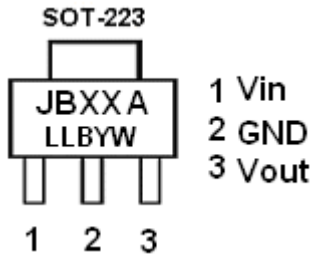
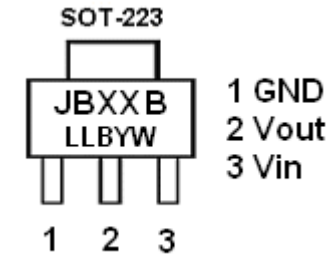
BLOCK DIAGRAM



Dropout Voltage vs Output Current



MARKING DESCRIPTION

Product Classification	BL8559CLATR□□
JB: Product Code XX: Output Voltage A: A Type Pin Assignment LL: Lot. No. B: Fab Code YW: Date Code	
Product Classification	BL8559CLBTR□□
JB: Product Code XX: Output Voltage B: B Type Pin Assignment LL: Lot. No. B: Fab Code YW: Date Code	

XX: Output voltage code, e.g. 25=2.5V, 33=3.3V;
Y: The Year of manufacturing, "9" stands for year 2009, "0" stands for year 2010;
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.

ORDERING INFORMATION

BL8559 [1][2][3][4]

Code	Description
[1]	Temperature & Rohs: C: -40~85°C, Pb Free Rohs Std.
[2]	Package type: LA: SOT-223, A Type LB: SOT-223, B Type
[3]	Packing type: TR: Tape&Reel (Standard)
[4]	Output voltage: e.g. 25=2.5V; 33=3.3V;

PIN CONFIGURATION

Items	Description
GND	Ground
V_{OUT}	Output terminal
V_{DD}	Input terminal and Supply pin for internal circuit.

ABSOLUTE MAXIMUM RATING

Parameter	Value
Max Input Voltage	8V
Operating Junction Temperature (T_J)	125°C
Ambient Temperature (T_A)	-40°C~85°C
Package Thermal Resistance:	SOT-223: 20°C/W
Storage Temperature (T_S)	-40°C~150°C
Lead Temperature & Time	260°C, 10 Sec

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	Max. 6V
Ambient Temperature	-40°C~85°C

ELECTRICAL CHARACTERISTICS

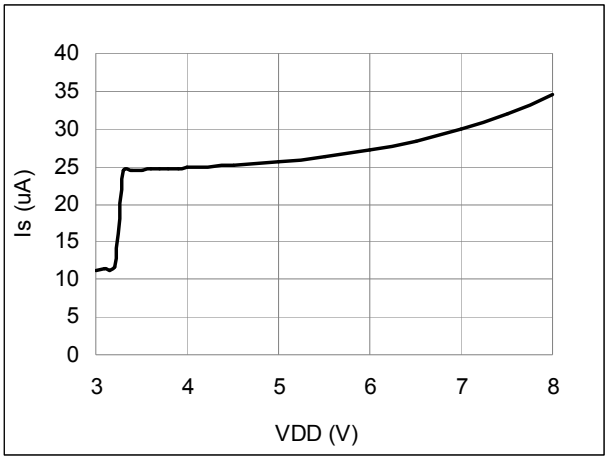
Test Conditions: C_{IN}=1uF,C_{OUT}=4.7uF,T_A=25°C, unless otherwise specified.

Symbol	Parameter		Conditions	Min	Typ	Max	Units
V_{DD}	Input Voltage					6	V
V_{OUT}	Output Voltage	V_{OUT}>1.5	V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤10mA	V_{OUT} X0.98	V_{OUT}	V_{OUT} X1.02	V
		V_{OUT}<=1.5		V_{OUT} -0.03		V_{OUT} +0.03	
I_{OUT} (Max.) *Note 6*	Maximum Output Current		V_{DD}-V_{OUT}=1V	2.5			A
V_{DROP}	Dropout Voltage		I_{OUT}=1.5A		430		mV
$\frac{\Delta Vout}{\Delta Vin \cdot Vout}$	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}≤2.5A		15		mV
Is	Supply Current		V_{DD}=Set V_{OUT}+1V V_{OUT} Floating		26	50	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		60		dB
en	Output Noise		BW=10Hz~100KHz		44		uVrms

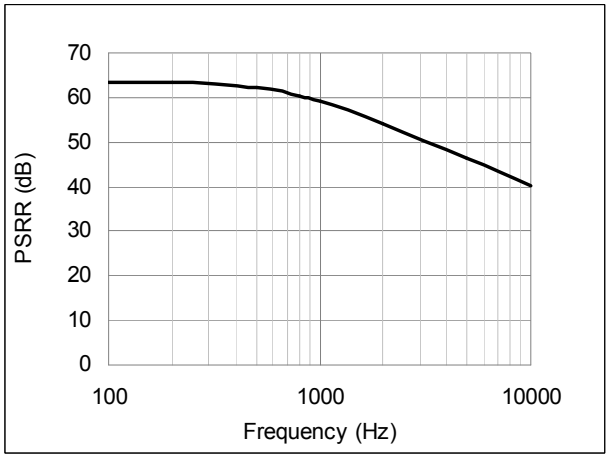
Note 6: The maximum power rating of each package is a constant, so along with the change of I_{LOAD}, the V_{DD}-V_{OUT} should be controlled to a certain range to ensure the normal operation.

TYPICAL PERFORMANCE CHARACTERISTICS

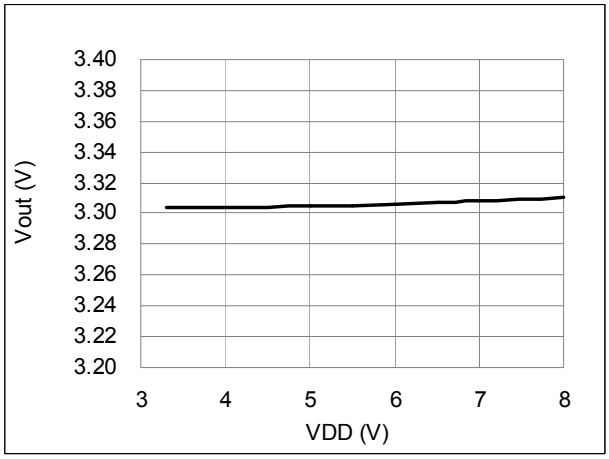
Supply Current vs. Input Voltage



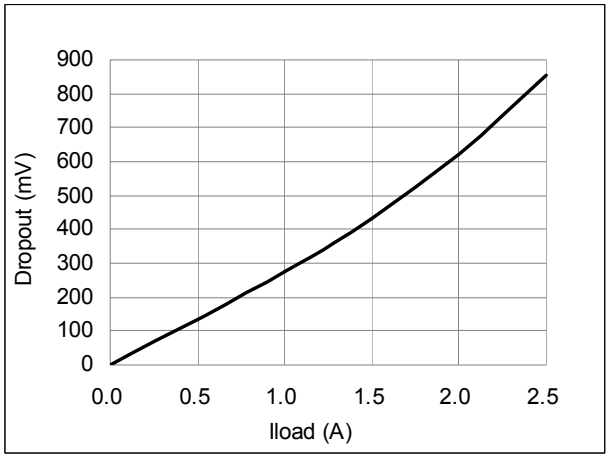
Ripple Rejection vs. Frequency



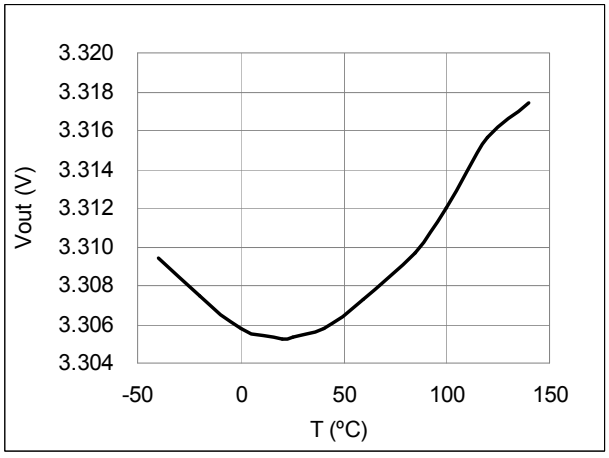
Output Voltage vs. Input Voltage



Dropout Voltage vs. Output Current



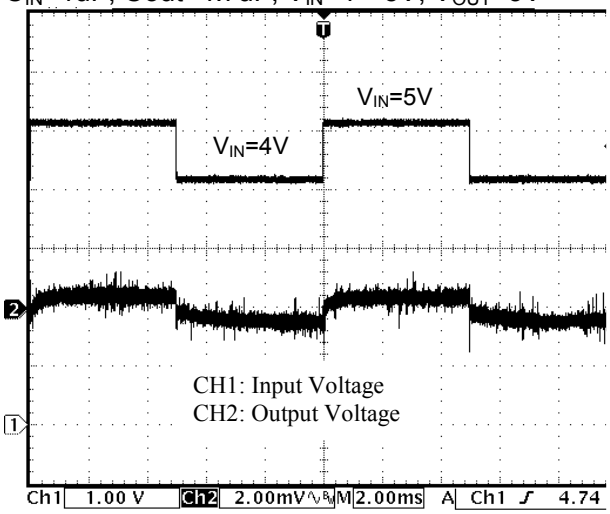
Output Voltage vs. Temperature



TEST WAVEFORMS

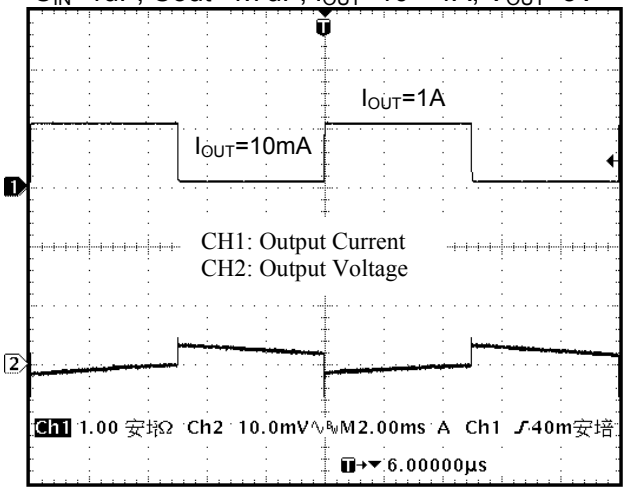
Line Transient Response

C_{IN}=1uF, Cout=4.7uF, V_{IN}=4↔5V, V_{OUT}=3V



Load Transient Response

C_{IN}=1uF, Cout=4.7uF, I_{OUT}=10↔1A, V_{OUT}=3V



PACKAGE LINE

Package	SOT-223	Devices per reel	2500Pcs	Unit	mm

Package dimension：