上海贝岭 SHANGHAI BELLING

BL8552

300mA Low Consumption Linear Regulator

DESCRIPTION

BL8552 series are a group of positive voltage output, high precise, and high PSRR 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.

BL8552 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%.

BL8552 series are available in SOT-23-3, SOT-23-5 and SOT-89-3 packages, which are lead (Pb)- free.

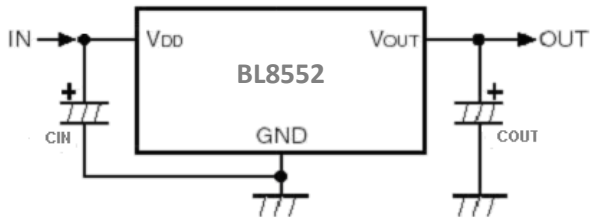
FEATURES

- Low quiescent current: 2uA at 5V
- 60dB PSRR at 100Hz
- Low output noise: 44uVRMS
- Low dropout: 280mV at 150mA load
- Low temperature coefficient: ±100ppm/°C
- Excellent line regulation: 0.05%/V
- Highly accurate: ±2%

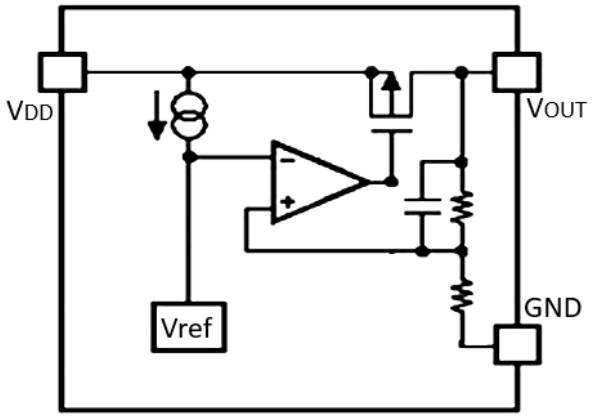
APPLICATIONS

- Reference voltage source
- Battery powered equipment
- Hand-hold equipment
- Wireless LAN
- GPS receivers

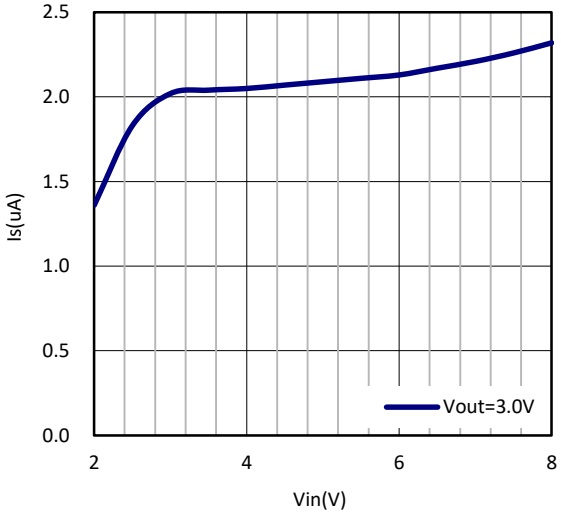
TYPICAL APPLICATION



BLOCK DIAGRAM



Supply Current vs. Input Voltage



ORDERING INFORMATION

BL8552 ①②③④

Code	Description
①	Temperature & Rohs: C: -40~85°C, Pb Free Rohs Std.
②	Package type: B3: SOT-23-3 B5: SOT-23-5 C3: SOT-89-3
③	Packing type: TR:Tape&Reel (Standard)
④	Output voltage: e.g. 12=1.2V 25=2.5V 36=3.6V

MARKING DESCRIPTON

E: Product code

X: Output voltage code

VOUT	Code	VOUT	Code	VOUT	Code
1.2V	2	2.1V	$\overline{1}$	3.0V	$\underline{0}$
1.3V	3	2.2V	$\overline{2}$	3.1V	$\underline{1}$
1.4V	4	2.3V	$\overline{3}$	3.2V	$\underline{2}$
1.5V	5	2.4V	$\overline{4}$	3.3V	$\underline{3}$
1.6V	6	2.5V	$\overline{5}$	3.4V	$\underline{4}$
1.7V	7	2.6V	$\overline{6}$	3.5V	$\underline{5}$
1.8V	8	2.7V	$\overline{7}$	3.6V	$\underline{6}$
1.9V	9	2.8V	$\overline{8}$		
2.0V	$\overline{0}$	2.9V	$\overline{9}$		

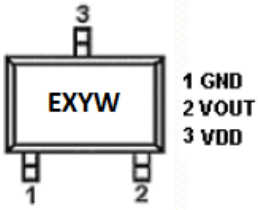
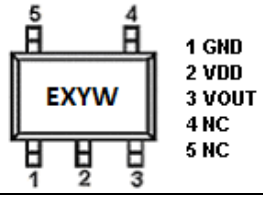
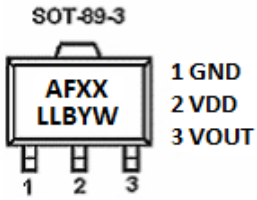
XX: Output voltage:

e.g. 12=1.2V, 25=2.5V, 36=3.6V.

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.

MARKING INFORMATION

Product classification		BL8552CB3TR□□
Marking		SOT-23-3
EXYW	E: Product code X: Output voltage YW: Date code	
Product classification		BL8552CB5TR□□
Marking		SOT-23-5
EXYW	E: Product code X: Output voltage YW: Date code	
Product classification		BL8552CC3TR□□
Marking		SOT-89-3
AFXX LLBYW	AF: Product code XX: Output voltage LL: LOT NO. B: FAB code YW: Date code	
GND	Ground	
VOUT	Output voltage	
VDD	Supply voltage input	

ABSOLUTE MAXIMUM RATING

Parameter		Value
Max input voltage		10V
Operating junction temperature (T_J)		125°C
Ambient temperature (T_A)		-40°C~85°C
Power dissipation	SOT-23-3, SOT-23-5	250mW
	SOT-89-3	500mW
Storage temperature (T_S)		-40°C~150°C
Lead temperature & time		260°C, 10 Sec

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	Max. 8V
Ambient temperature	-40°C~85°C

ELECTRICAL CHARACTERISTICS

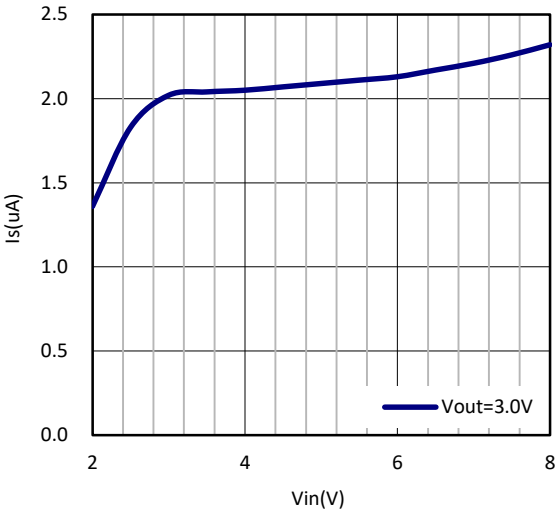
Test conditions: C_{IN}=1uF,C_{OUT}=1uF,T_A=25°C, unless otherwise specified.

Symbol	Parameter		Conditions	Min	Typ	Max	Units
V_{DD}	Input voltage					8	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}	V_{OUT}+0.03	V
I_{OUT} (Max.) (Note 4)	Maximum output current		V_{DD}-V_{OUT}=1V	300			mA
V_{DROP}	Dropout voltage		I_{OUT}=150mA V_{OUT}=3.0V		280		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}≤300mA		150		mV
Is	Supply current		V_{DD}=Set V_{OUT}+1V V_{OUT} floating		2	3	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

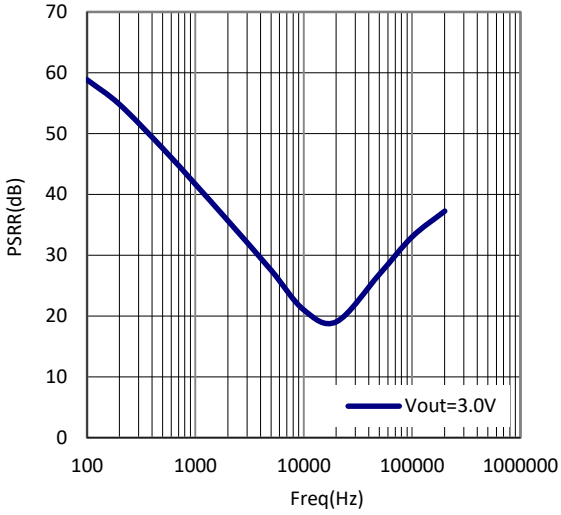
Note:
The maximum power rating of each package is a constant, so along with the change of I_{LOAD}, the V_{DD}-V_{OUT} should be controlled to a certain range to ensure the normal operation.

TYPICAL PERFORMANCE CHARACTERISTICS

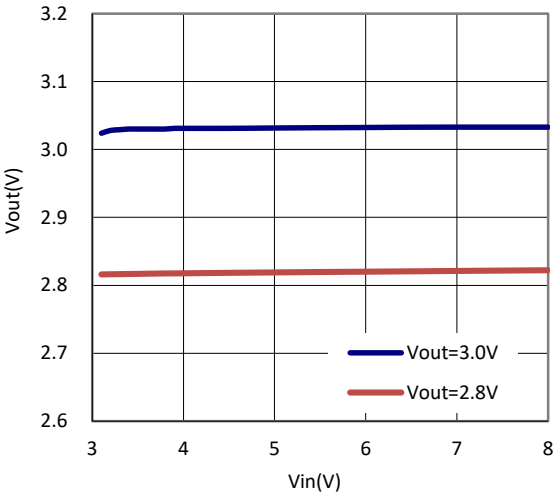
Supply Current vs. Input Voltage



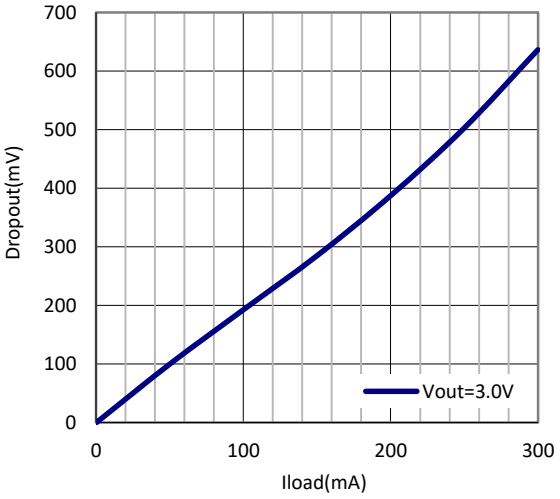
PSRR



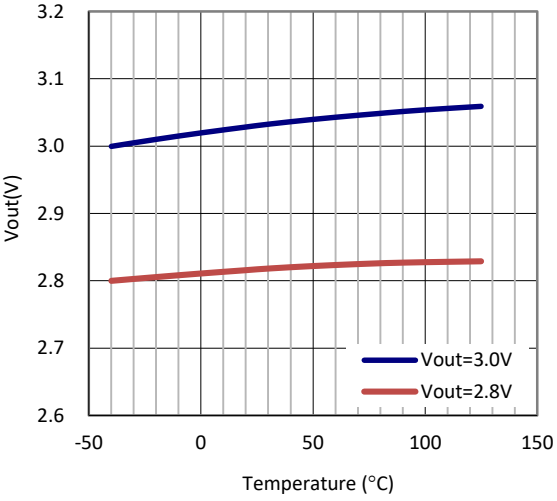
Output Voltage vs. Input Voltage



Dropout Voltage vs. Output Current



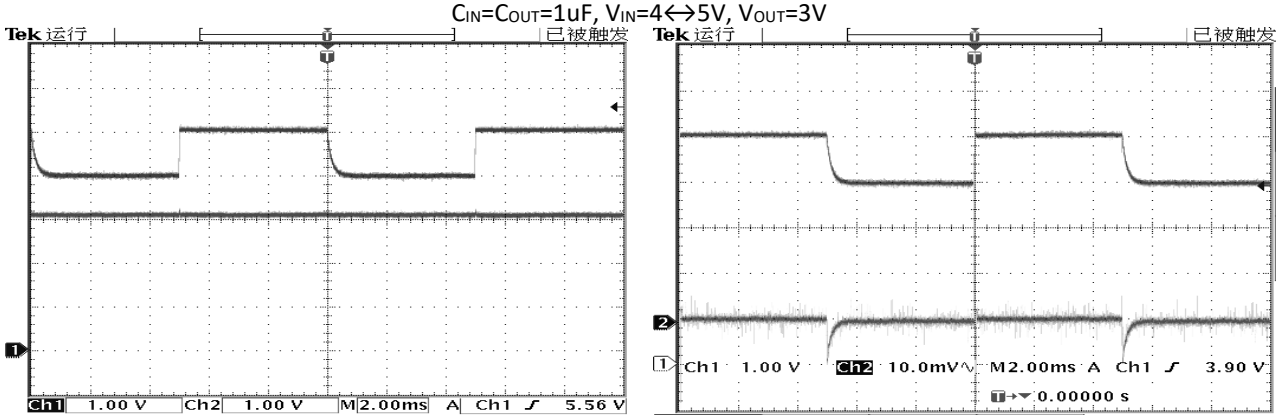
Output Voltage vs. Temperature



TEST WAVEFORMS

Line Transient Response

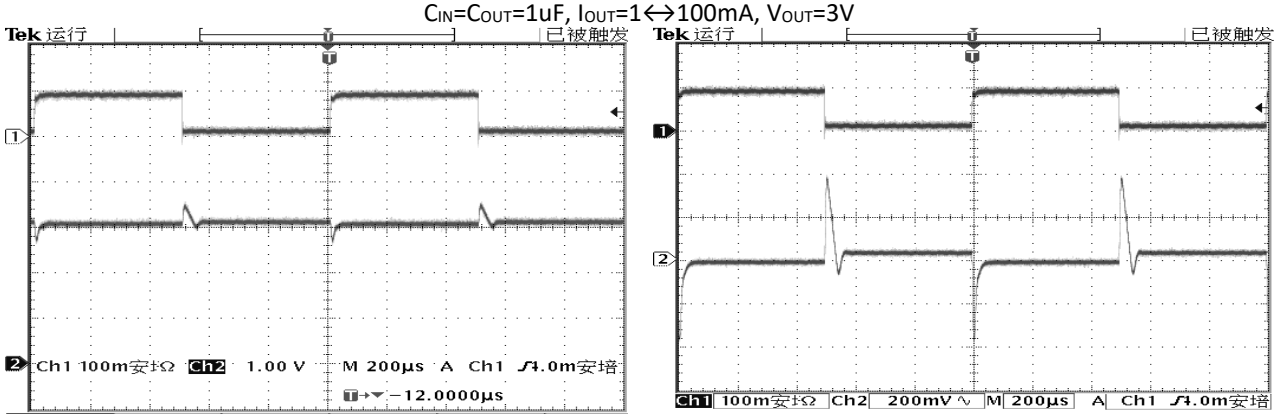
C_{IN}=C_{OUT}=1uF, V_{IN}=4↔5V, V_{OUT}=3V



Ch1: Input Voltage, Ch2: Output Voltage

Load Transient Response

C_{IN}=C_{OUT}=1uF, I_{OUT}=1↔100mA, V_{OUT}=3V

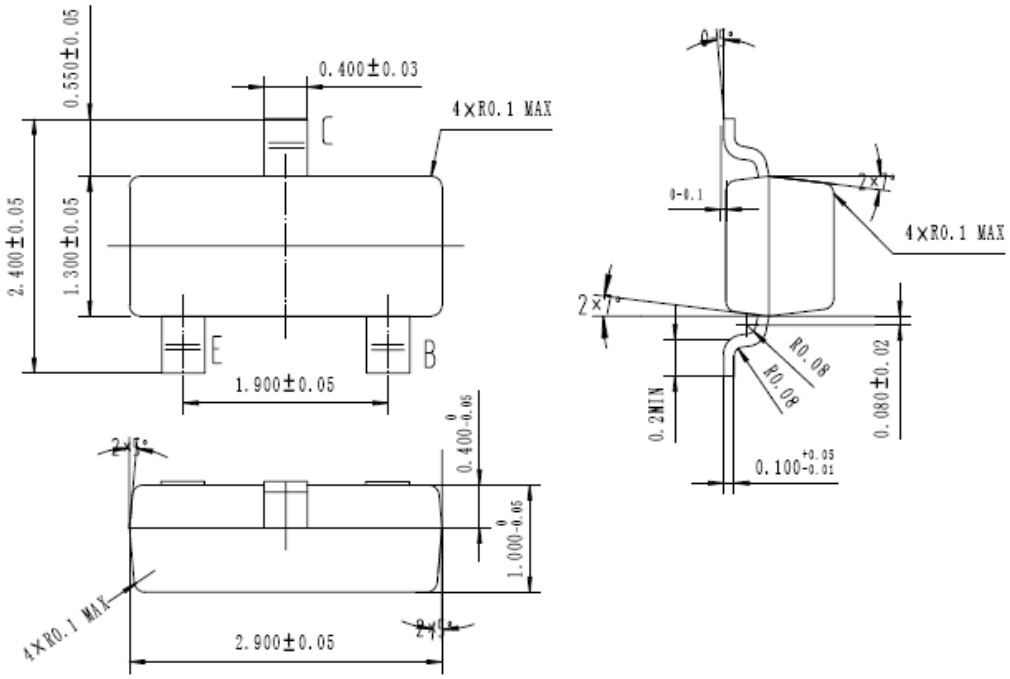


Ch1: Output Current, Ch2: Output Voltage

PACKAGE OUTLINE

Package	SOT23-3	Devices per reel	3000pcs

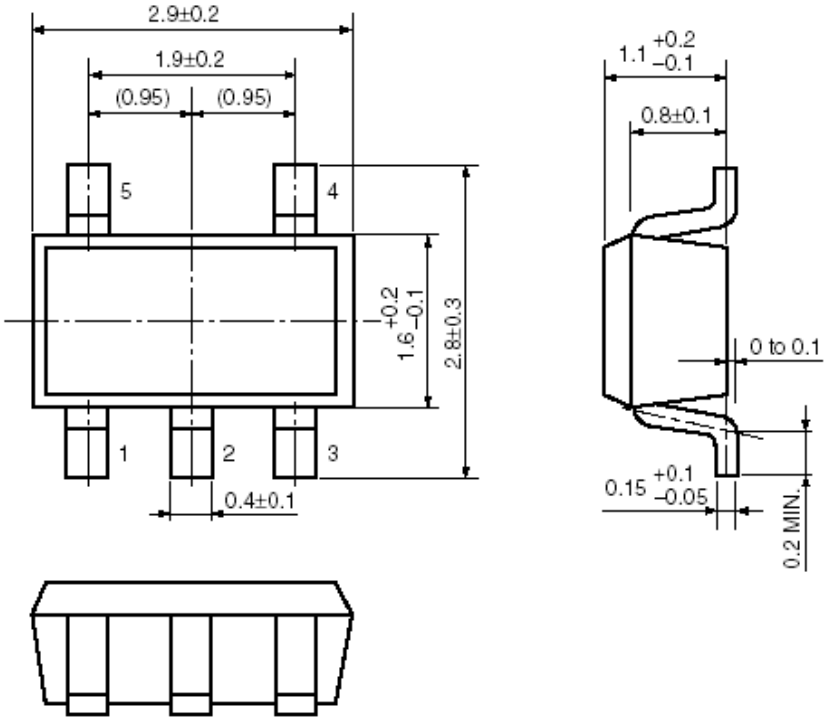
Package specification:



Unit: mm

Package	SOT23-5	Devices per reel	3000pcs

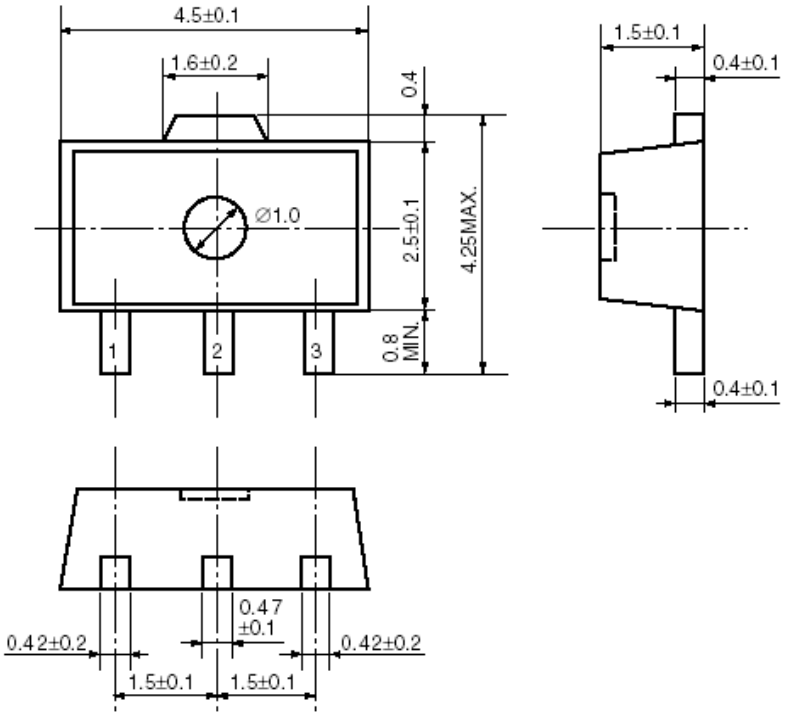
Package specification:



Unit: mm

Package	SOT89-3	Devices per reel	1000pcs

Package specification:



Unit: mm