

## 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  $\pm 2\%$ .

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

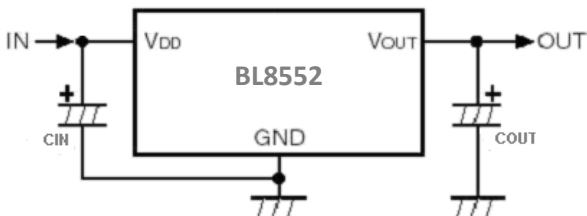
### FEATURES

- Low quiescent current: 2uA at 5V
- 60dB PSRR at 100Hz
- Low output noise: 44uVRMS
- Low dropout: 280mV at 150mA load
- Low temperature coefficient:  $\pm 100\text{ppm}/^\circ\text{C}$
- Excellent line regulation: 0.05%/V
- Highly accurate:  $\pm 2\%$

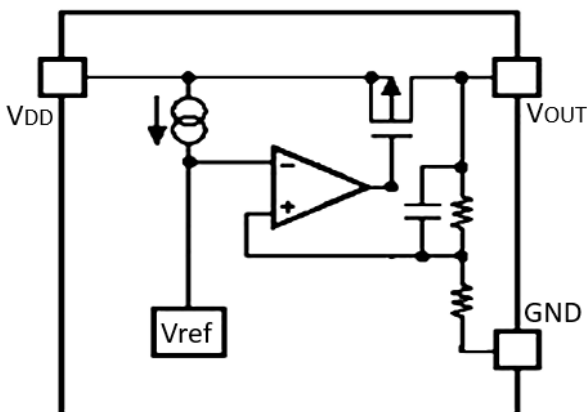
### APPLICATIONS

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

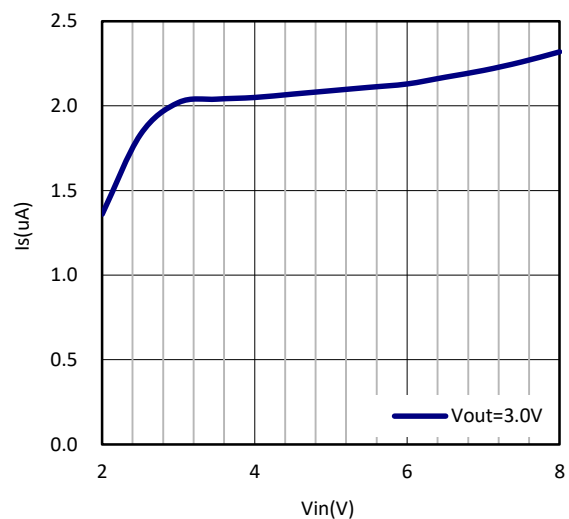
### TYPICAL APPLICATION



### BLOCK DIAGRAM



Supply Current vs. Input Voltage



## ORDERING INFORMATION

BL8552 [1](#)[2](#)[3](#)[4](#)

Code	Description
<a href="#">1</a>	Temperature & Rohs: C: -40~85°C, Pb Free Rohs Std.
<a href="#">2</a>	Package type: B3: SOT-23-3 B5: SOT-23-5 C3: SOT-89-3
<a href="#">3</a>	Packing type: TR:Tape&Reel (Standard)
<a href="#">4</a>	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	<u>1</u>	3.0V	<u>0</u>
1.3V	3	2.2V	<u>2</u>	3.1V	<u>1</u>
1.4V	4	2.3V	<u>3</u>	3.2V	<u>2</u>
1.5V	5	2.4V	<u>4</u>	3.3V	<u>3</u>
1.6V	6	2.5V	<u>5</u>	3.4V	<u>4</u>
1.7V	7	2.6V	<u>6</u>	3.5V	<u>5</u>
1.8V	8	2.7V	<u>7</u>	3.6V	<u>6</u>
1.9V	9	2.8V	<u>8</u>		
2.0V	<u>0</u>	2.9V	<u>9</u>		

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, "A" stands for week 27, "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 <sub>J</sub> )		125°C
Ambient temperature (T <sub>A</sub> )		-40°C~85°C
Power dissipation	SOT-23-3, SOT-23-5	250mW
	SOT-89-3	500mW
Storage temperature (T <sub>S</sub> )		-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<sub>IN</sub>=1uF, C<sub>OUT</sub>=1uF, T<sub>A</sub>=25°C, unless otherwise specified.

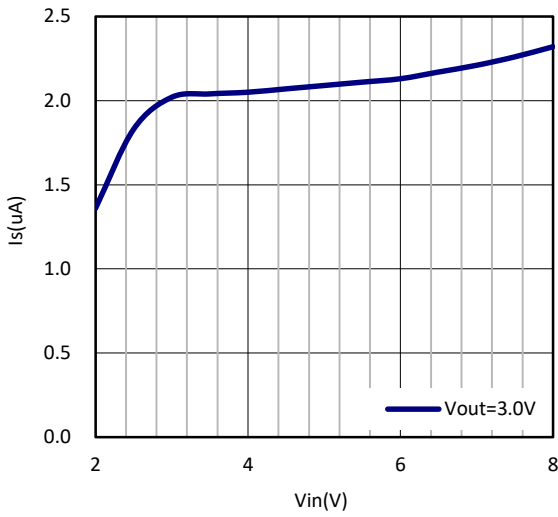
Symbol	Parameter	Conditions	Min	Typ	Max	Units	
V <sub>DD</sub>	Input voltage				8	V	
V <sub>OUT</sub>	Output voltage	V <sub>OUT</sub> > 1.5V	V <sub>DD</sub> =Set V <sub>OUT</sub> +1V 1mA ≤ I <sub>OUT</sub> ≤ 10mA	V <sub>OUT</sub> X0.98	V <sub>OUT</sub>	V <sub>OUT</sub> X1.02	V
		V <sub>OUT</sub> ≤ 1.5V		V <sub>OUT</sub> - 0.03	V <sub>OUT</sub>	V <sub>OUT</sub> +0. 03	V
I <sub>OUT</sub> (Max.) (Note 4)	Maximum output current	V <sub>DD</sub> -V <sub>OUT</sub> =1V	300			mA	
V <sub>DROP</sub>	Dropout voltage	I <sub>OUT</sub> =150mA V <sub>OUT</sub> =3.0V		280		mV	
$\frac{\Delta V_{out}}{\Delta V_{in} \cdot V_{out}}$	Line regulation	I <sub>OUT</sub> =10mA 4V ≤ V <sub>DD</sub> ≤ 6V		0.05	0.2	%/V	
$\Delta V_{out}$	Load regulation	V <sub>DD</sub> =Set V <sub>OUT</sub> +1V 1mA ≤ I <sub>OUT</sub> ≤ 300mA		150		mV	
I <sub>S</sub>	Supply current	V <sub>DD</sub> =Set V <sub>OUT</sub> +1V V <sub>OUT</sub> floating		2	3	uA	
$\frac{\Delta V_{out}}{\Delta T \cdot V_{out}}$	Output voltage temperature coefficient	I <sub>OUT</sub> =10mA		± 100		ppm/°C	
PSRR	Ripple rejection	f=100Hz, Ripple=0.5Vp-p, V <sub>DD</sub> =Set V <sub>OUT</sub> +1V		60		dB	
en	Output noise	BW=10Hz~100KHz		44		uVrms	

**Note:**

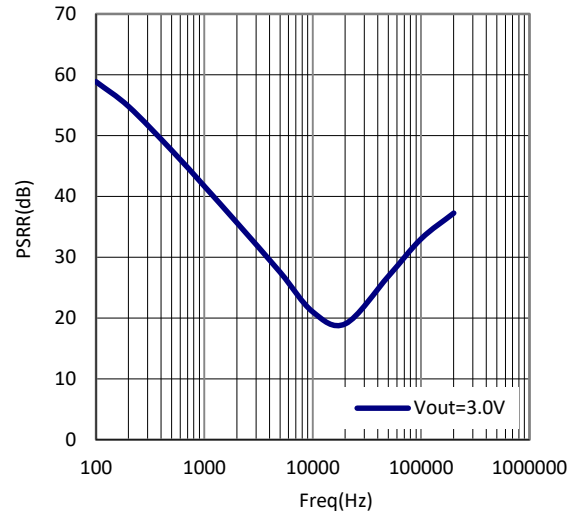
The maximum power rating of each package is a constant, so along with the change of I<sub>LOAD</sub>, the V<sub>DD</sub>-V<sub>OUT</sub> should be controlled to a certain range to ensure the normal operation.

## TYPICAL PERFORMANCE CHARACTERISTICS

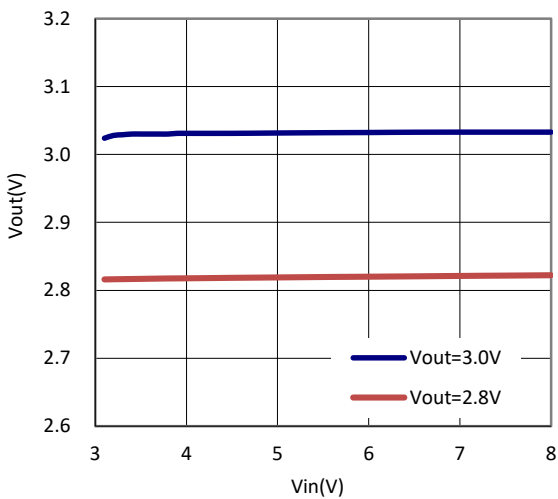
### Supply Current vs. Input Voltage



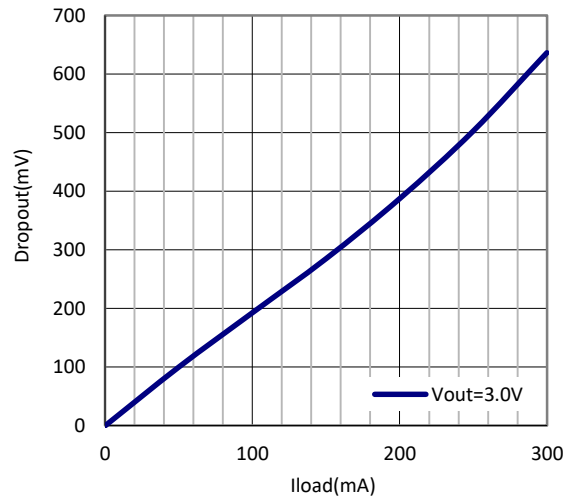
### PSRR



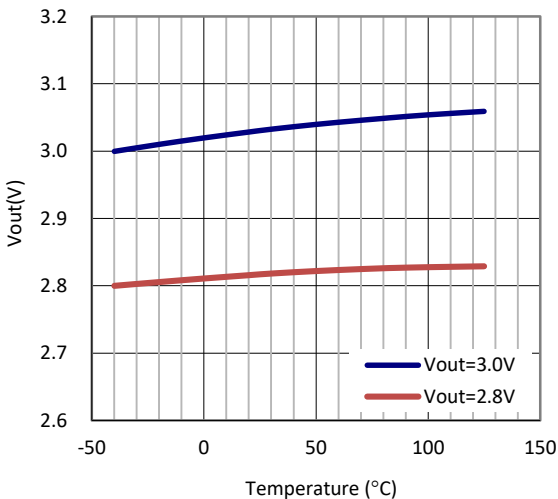
### Output Voltage vs. Input Voltage



### Dropout Voltage vs. Output Current



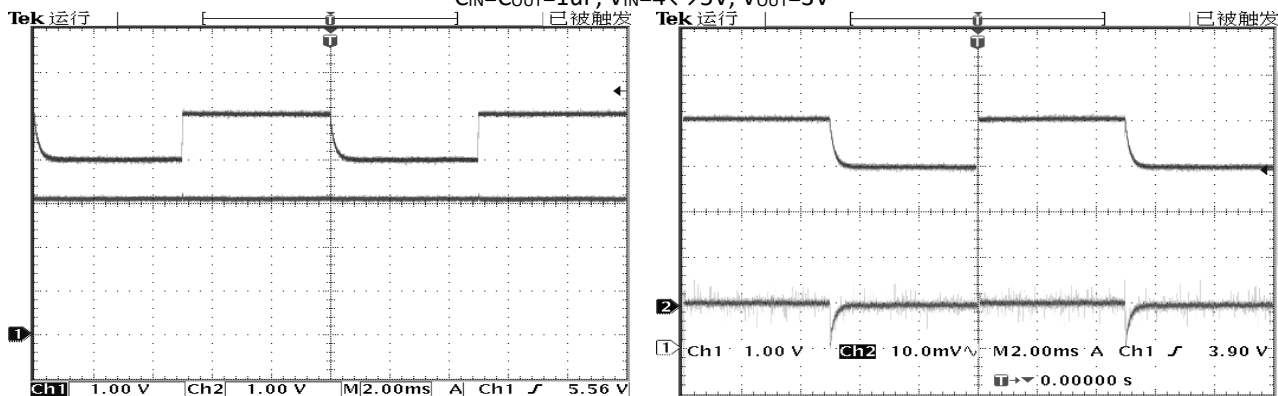
### Output Voltage vs. Temperature



## TEST WAVEFORMS

### Line Transient Response

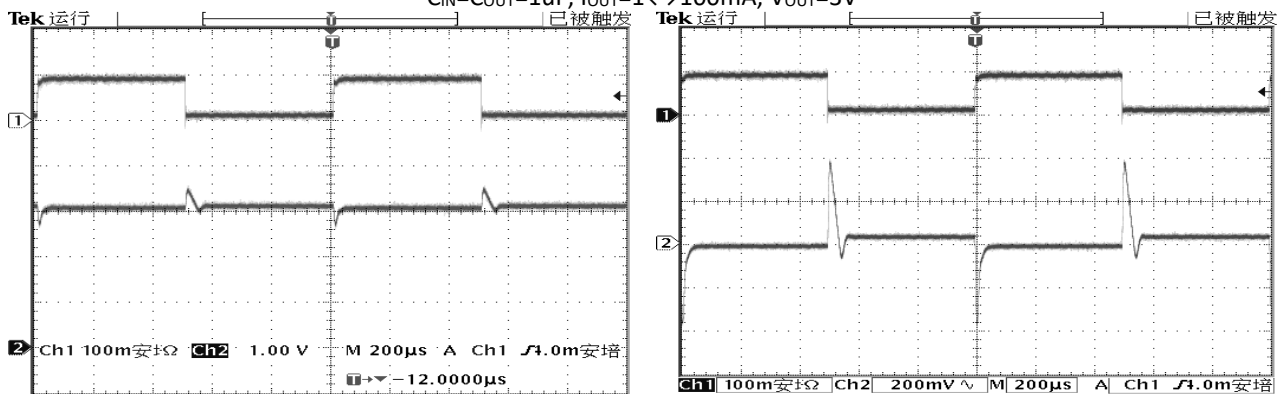
$C_{IN}=C_{OUT}=1\mu F$ ,  $V_{IN}=4\leftrightarrow 5V$ ,  $V_{OUT}=3V$



Ch1: Input Voltage, Ch2: Output Voltage

### Load Transient Response

$C_{IN}=C_{OUT}=1\mu F$ ,  $I_{OUT}=1\leftrightarrow 100mA$ ,  $V_{OUT}=3V$

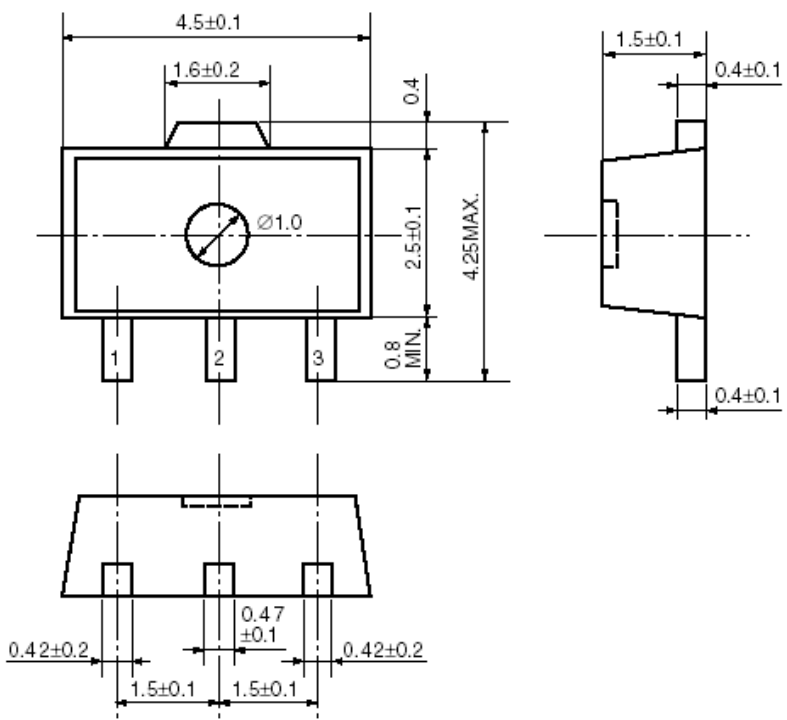


Ch1: Output Current, Ch2: Output Voltage

## PACKAGE OUTLINE

Package	SOT23-3	Devices per reel	3000pcs
Package specification:			
<p>Technical drawing of the SOT23-3 package. It includes three views: a top view, a side view, and a cross-sectional view. Dimensions are provided in millimeters with tolerances. Key dimensions include: overall length <math>2.400 \pm 0.05</math>, overall width <math>1.900 \pm 0.05</math>, lead length <math>0.400 \pm 0.03</math>, lead thickness <math>0.080 \pm 0.02</math>, and lead width <math>0.100^{+0.05}_{-0.01}</math>. Lead radii are specified as <math>4 \times R0.1 \text{ MAX}</math>. Lead angles are <math>2 \times 7^\circ</math>. A lead thickness of <math>0.2 \text{ MIN}</math> is also indicated.</p>			
Unit: mm			

Package	SOT23-5	Devices per reel	3000pcs
Package specification:			
<p>Technical drawing of the SOT23-5 package. It includes three views: a top view, a side view, and a perspective view. Dimensions are provided in millimeters with tolerances. Key dimensions include: overall length <math>2.9 \pm 0.2</math>, overall width <math>2.8 \pm 0.3</math>, lead length <math>1.1^{+0.2}_{-0.1}</math>, lead thickness <math>0.15^{+0.1}_{-0.05}</math>, and lead width <math>0.2 \text{ MIN}</math>. Lead radii are <math>R0.08</math>. Lead angles are <math>2 \times 7^\circ</math>. Lead thickness of <math>0 \text{ to } 0.1</math> is also shown. Lead spacing dimensions are <math>1.9 \pm 0.2</math> (total) and <math>0.95</math> (individual).</p>			
Unit: mm			

Package	SOT89-3	Devices per reel	1000pcs
Package specification:  <p>The drawing shows three views of the SOT89-3 package. The top view shows a rectangular body with a diameter of <math>\varnothing 1.0</math> mm. The overall width is <math>4.5 \pm 0.1</math> mm, and the width of the top lead is <math>1.6 \pm 0.2</math> mm. The height of the top lead is <math>0.4</math> mm. The distance from the top lead to the bottom leads is <math>2.5 \pm 0.1</math> mm. The total height of the package is <math>4.25</math> mm MAX. The bottom leads are labeled 1, 2, and 3. The distance from the center of the package to the center of lead 1 is <math>0.8</math> mm MIN. The side view shows a height of <math>1.5 \pm 0.1</math> mm for the top lead and a width of <math>0.4 \pm 0.1</math> mm. The bottom view shows a width of <math>0.42 \pm 0.2</math> mm for each lead, a distance of <math>1.5 \pm 0.1</math> mm between leads 1 and 2, and a distance of <math>1.5 \pm 0.1</math> mm between leads 2 and 3. The distance from the center of the package to the center of lead 2 is <math>0.47 \pm 0.1</math> mm.</p>			
Unit: mm			

单击下面可查看定价，库存，交付和生命周期等信息

[>>BELLING\(上海贝岭\)](#)