

### GENERAL DESCRIPTION

BL8066 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 1.0V to 3.6V. It also can be customized on command.

BL8066 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  $\pm 2\%$ .

BL8066 series are available in SOT-23-5 package, which is lead (Pb)- free.

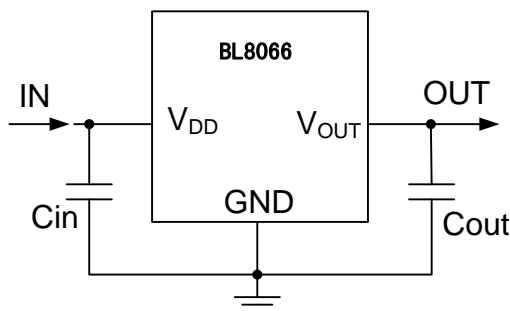
### FEATURES

- Low Quiescent Current: 26uA at 5V
- High PSRR: 60dB range to 10KHz
- Low Output Noise: 44uVRMS
- Low Dropout: 430mV at 1.5A load
- Maximum output current: 2.5A
- Highly Accurate:  $\pm 2\%$
- Low ESR Ceramic Capacitor Compatible

### APPLICATIONS

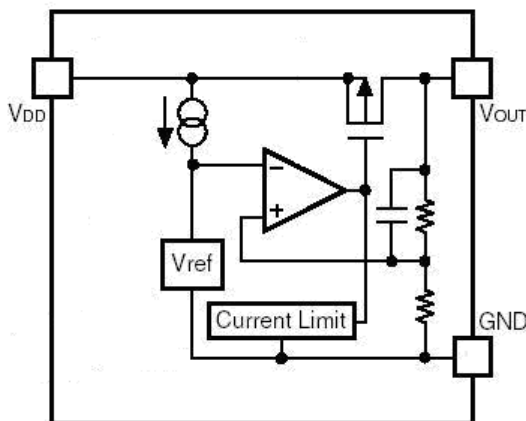
- Reference Voltage Source
- Battery Powered Equipment
- PC Peripherals
- Wireless Devices
- Instrumentation

### TYPICAL APPLICATION

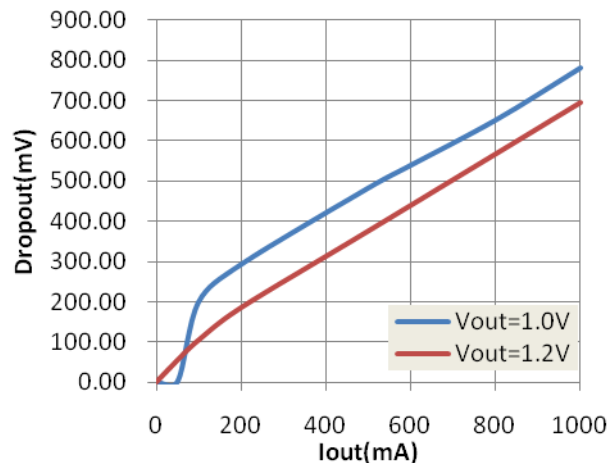


*NOTE: Input capacitor ( $C_{in}=4.7\mu F$ ) and Output capacitor ( $C_{out}=10\mu F$ ) are recommended in all application circuit (Low ESR ceramic capacitor is available).*

### BLOCK DIAGRAM



### Dropout Voltage vs Output Current



## MARKING DESCRIPTION

Product Classification	BL8066CB5TR□□
JB: Product Code	
X: Output Voltage	
YW: Date Code	

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, "A" stands for week 27, "Z" stands for week 52.

## ORDERING INFORMATION

BL8066 [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: B5: SOT-23-5
<a href="#">3</a>	Packing type: TR: Tape&Reel (Standard)
<a href="#">4</a>	Output voltage: e.g. 25=2.5V; 33=3.3V

## PIN CONFIGURATION

Items	Description
V <sub>DD</sub>	Input terminal and Supply pin for internal circuit.
GND	Ground
CE	Chip Enable
NC	No Connection
V <sub>OUT</sub>	Output terminal

## ABSOLUTE MAXIMUM RATING

Parameter	Value
Max Input Voltage	8V
Operating Junction Temperature (T <sub>J</sub> )	125°C
Ambient Temperature (T <sub>A</sub> )	-40°C~85°C
Power Dissipation	SOT-23-5: 250mW
Storage Temperature (T <sub>S</sub> )	-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

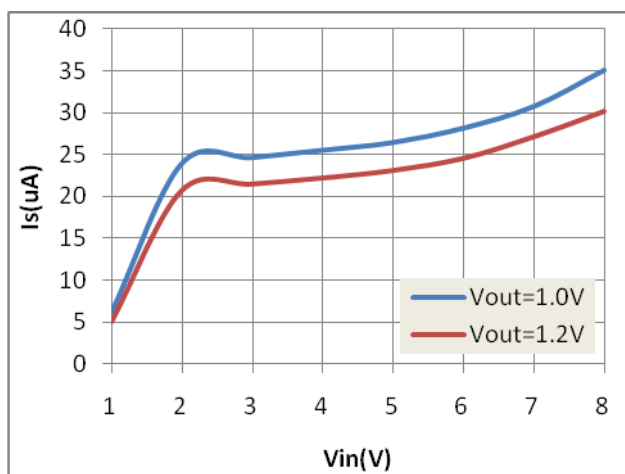
Test Conditions: C<sub>IN</sub>=4.7uF, C<sub>OUT</sub>=10uF, T<sub>A</sub>=25°C, unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V <sub>DD</sub>	Input Voltage				6	V
V <sub>OUT</sub>	Output Voltage	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> -0.03		V <sub>OUT</sub> +0.03	
I <sub>OUT</sub> (Max.) Note 6	Maximum Output Current	V <sub>DD</sub> -V <sub>OUT</sub> =1V	2.5			A
V <sub>DROP</sub>	Dropout Voltage	V <sub>OUT</sub> =3.3V, I <sub>OUT</sub> =1.5A		430	650	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
ΔV <sub>out</sub>	Load Regulation	V <sub>DD</sub> =Set V <sub>OUT</sub> +1V 1mA≤I <sub>OUT</sub> ≤2.5A		15		mV
I <sub>S</sub>	Supply Current	V <sub>DD</sub> =Set V <sub>OUT</sub> +1V V <sub>OUT</sub> Floating		26	50	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

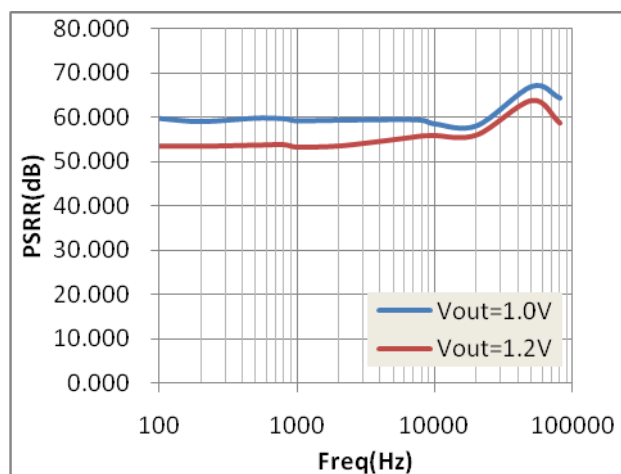
*Note 6: The maximum power rating of each package is a constant, so along with the change of I<sub>LOAD</sub>, the V<sub>DD</sub>-V<sub>OUT</sub> should be controlled to a certain range to ensure the normal operation.*

## TYPICAL PERFORMANCE CHARACTERISTICS

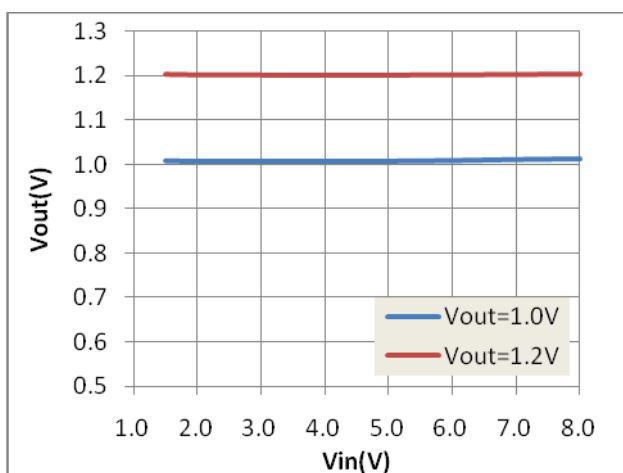
Supply Current vs. Input Voltage



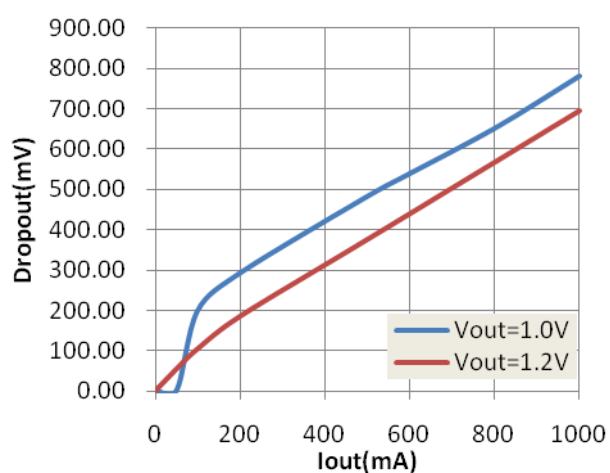
Ripple Rejection vs. Frequency



Output Voltage vs. Input Voltage

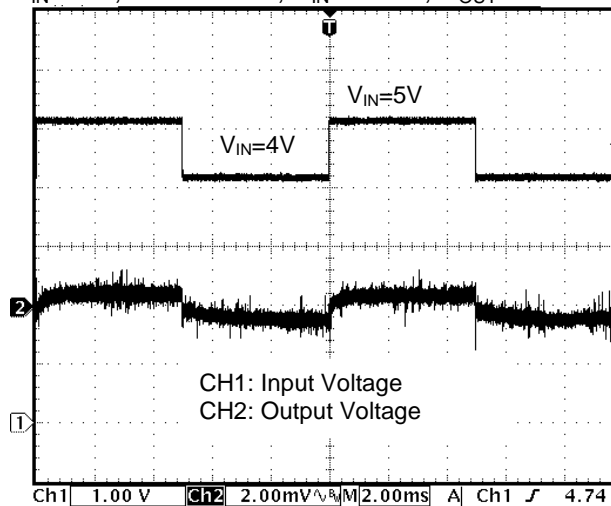


Dropout Voltage vs. Output Current

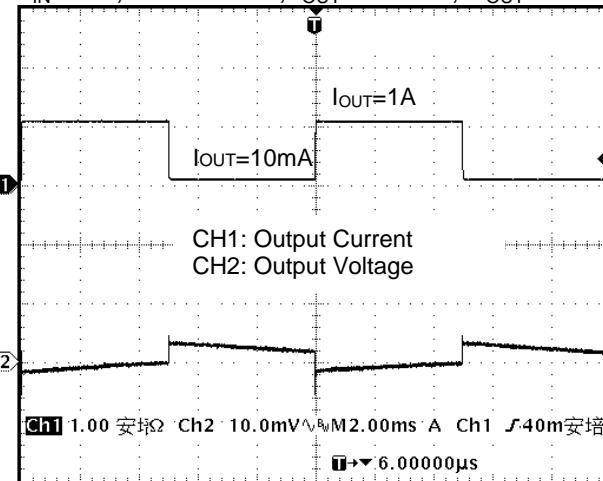


## TEST WAVEFORMS

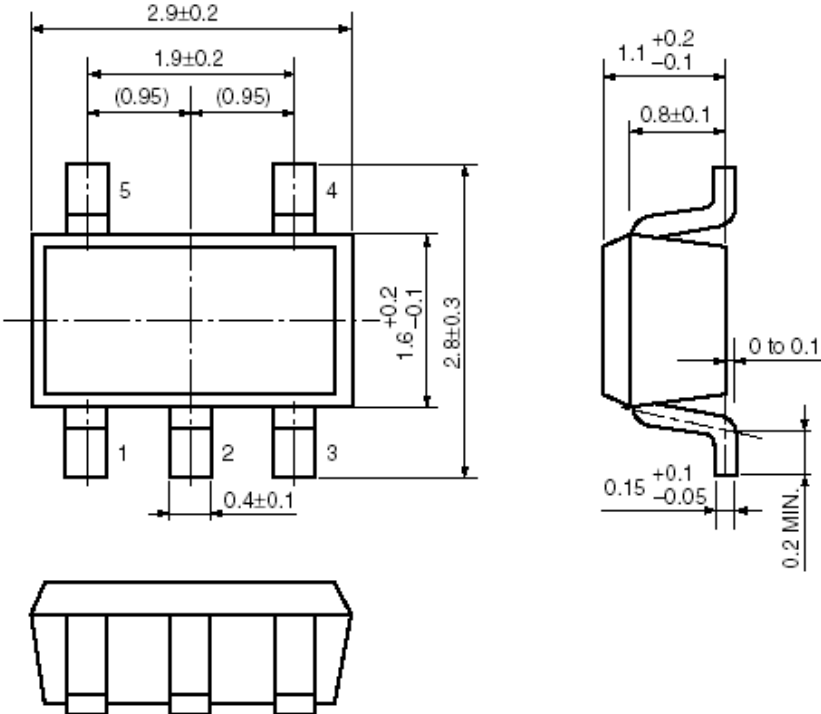
Line Transient Response  
 $C_{IN}=1\mu F$ ,  $C_{out}=4.7\mu F$ ,  $V_{IN}=4\leftrightarrow 5V$ ,  $V_{OUT}=3.3V$



Load Transient Response  
 $C_{IN}=1\mu F$ ,  $C_{out}=4.7\mu F$ ,  $I_{OUT}=10\leftrightarrow 1A$ ,  $V_{OUT}=3.3V$



## PACKAGE LINE

Package	SOT-23-5	Devices per reel	3000Pcs	Unit	mm
Package Dimension:					
 <p>The technical drawing illustrates the SOT-23-5 package dimensions in millimeters. It includes three views: a top view, a side view, and a perspective view. The top view shows a rectangular body with a width of <math>2.9 \pm 0.2</math> mm and a length of <math>1.9 \pm 0.2</math> mm. The distance between the two side leads (pins 4 and 5) is <math>0.95</math> mm, and the distance between the three bottom leads (pins 1, 2, and 3) is <math>0.4 \pm 0.1</math> mm. The side view shows a height of <math>2.8 \pm 0.3</math> mm, with a lead height of <math>1.6 \pm 0.1</math> mm and a lead thickness of <math>0.15 \pm 0.05</math> mm. The lead length is <math>1.1 \pm 0.2</math> mm, and the lead width is <math>0.8 \pm 0.1</math> mm. The lead angle is specified as <math>0</math> to <math>0.1</math> degrees. The perspective view shows the package from an isometric angle.</p>					