BL8066

2A Linear Regulator

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 ±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: ±2%
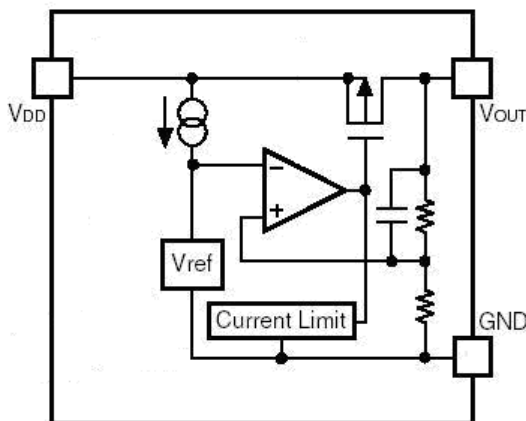- Low ESR Ceramic Capacitor Compatible

APPLICATIONS

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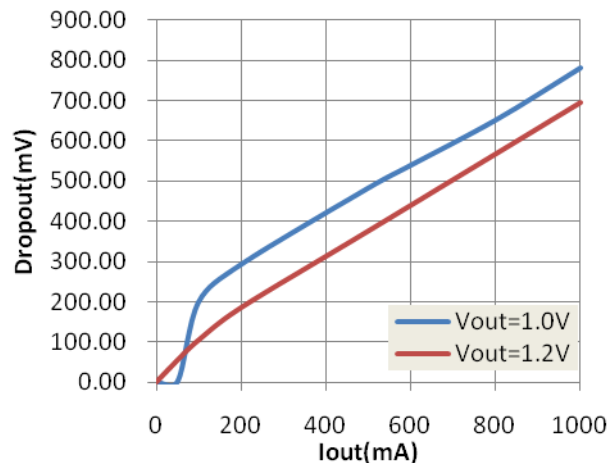- Wireless Devices
- Instrumentation

TYPICAL APPLICATION
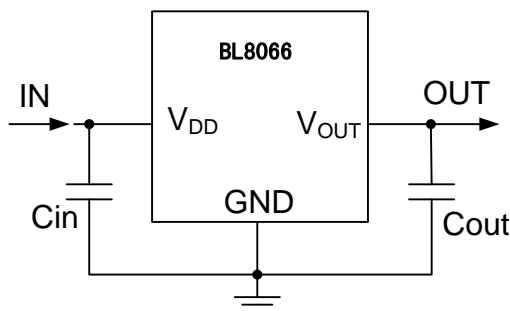
NOTE: Input capacitor (Cin=4.7uF) and Output capacitor (Cout=10uF) are recommended in all application circuit (Low ESR ceramic capacitor is available).

BLOCK DIAGRAM

Dropout Voltage vs Output Current

BL8066

MARKING DESCRIPTION

Product Classification	BL8066CB5TR☐☐
JB: Product Code	
X: Output Voltage	SOT-23-5
YW: Date Code	

SOT-23-5

```
    5        4
   ┌──────────┐  1 V DD
   │          │  2 GND
   │  JBXYW   │  3 CE
   │          │  4 NC
   └──────────┘  5 V OUT
    1    2    3
```

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

BL8066 ①②③④

Code	Description
①	Temperature & Rohs: C: -40~85°C, Pb Free Rohs Std.
②	Package type: B5: SOT-23-5
③	Packing type: TR: Tape&Reel (Standard)
④	Output voltage: e.g. 25=2.5V; 33=3.3V

PIN CONFIGURATION

Items	Description
V$_{DD}$	Input terminal and Supply pin for internal circuit.
GND	Ground
CE	Chip Enable
NC	No Connection
V$_{OUT}$	Output terminal

ABSOLUTE MAXIMUM RATING

Parameter	Value
Max Input Voltage	8V
Operating Junction Temperature (T_J)	125°C
Ambient Temperature (T_A)	-40°C~85°C
Power Dissipation	SOT-23-5: 250mW
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}=4.7uF, C_{OUT}=10uF, T_A=25°C, unless otherwise specified.

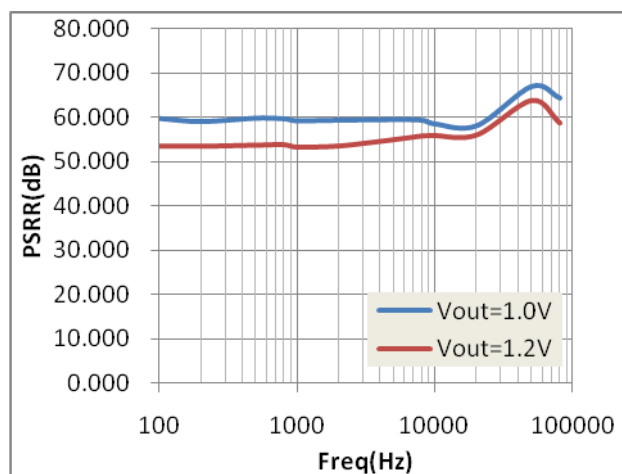| Symbol	Parameter		Conditions	Min	Typ	Max	Units
V_{DD}	Input Voltage					6	V
V_{OUT}	Output Voltage	V_{OUT}>1.5	V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤10mA	V_{OUT} X0.98	V_{OUT}	V_{OUT} X1.02	V
		V_{OUT}<=1.5		V_{OUT} -0.03		V_{OUT} +0.03	
I_{OUT} (Max.) Note 6	Maximum Output Current		V_{DD}-V_{OUT}=1V	2.5			A
V_{DROP}	Dropout Voltage		V_{OUT} =3.3V, I_{OUT}=1.5A		430	650	mV
$\dfrac{\Delta Vout}{\Delta Vin \cdot Vout}$	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
$\dfrac{\Delta Vout}{\Delta T \cdot Vout}$	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.
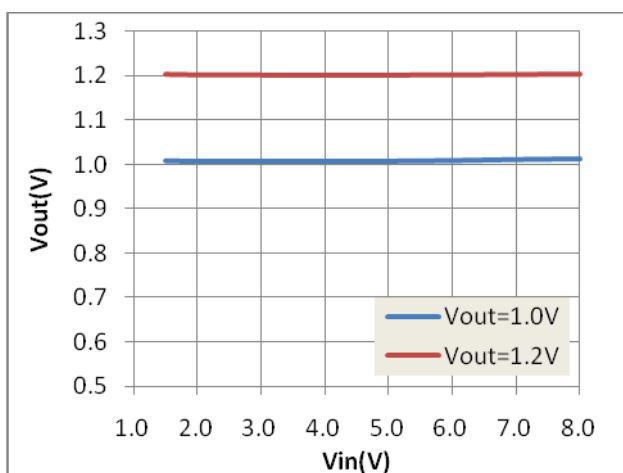
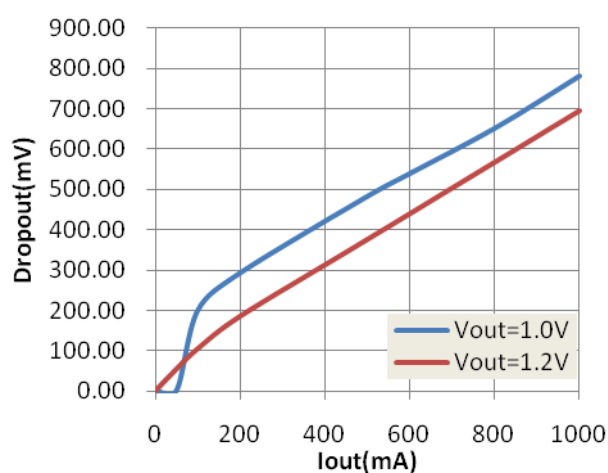## TYPICAL PERFORMANCE CHARACTERISTICS

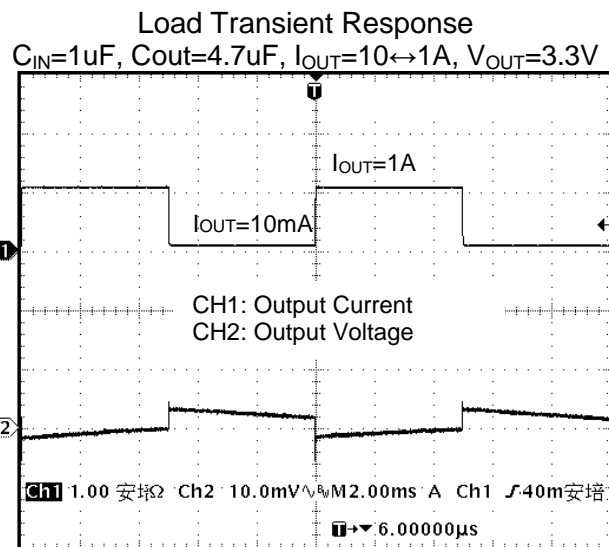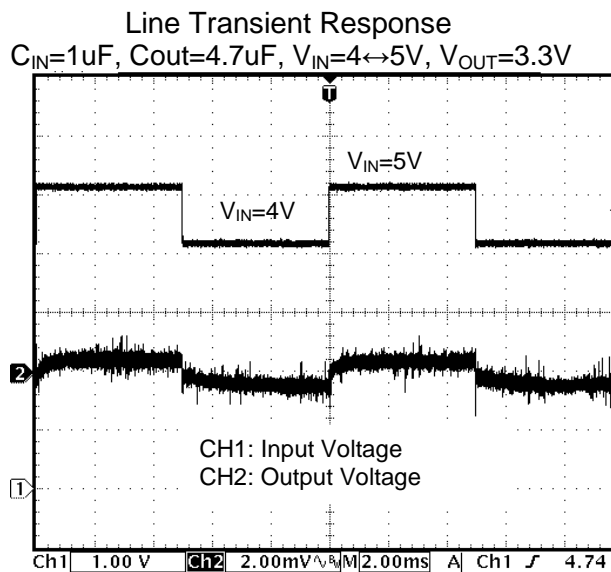Supply Current vs. Input Voltage
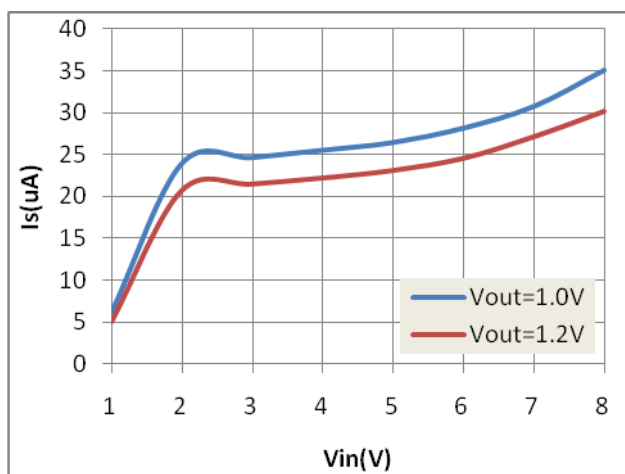
Ripple Rejection vs. Frequency

Output Voltage vs. Input Voltage

Dropout Voltage vs. Output Current

BL8066

TEST WAVEFORMS

Line Transient Response
C_{IN}=1uF, Cout=4.7uF, V_{IN}=4↔5V, V_{OUT}=3.3V

V_{IN}=5V

V_{IN}=4V

CH1: Input Voltage
CH2: Output Voltage

Ch1 1.00 V Ch2 2.00mV∿ᴮᵂ M2.00ms A Ch1 ∫ 4.74

Load Transient Response
C_{IN}=1uF, Cout=4.7uF, I_{OUT}=10↔1A, V_{OUT}=3.3V

I_{OUT}=1A

I_{OUT}=10mA

CH1: Output Current
CH2: Output Voltage

Ch1 1.00 安培Ω Ch2 10.0mV∿ᴮᵂ M2.00ms A Ch1 ∫ 40m安培

T→▼6.00000µs

PACKAGE LINE

Package	SOT-23-5	Devices per reel	3000Pcs	Unit	mm

Package Dimension: