

GENERAL DESCRIPTION

BL8071 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 5.0V. It also can be customized on command.

BL8071 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 $\pm 2\%$.

BL8071 series are available in SOT-223 package, which are lead (Pb)- free.

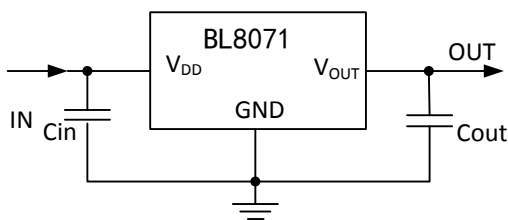
FEATURES

- Low Quiescent Current: 100uA at 5V
- High PSRR: 70dB range to 1KHz
- Low Output Noise: 44uVRMS
- Low Dropout: 300mV at 1A load
- Maximum output current: 1.5A
- Highly Accurate: $\pm 2\%$
- Low ESR Ceramic Capacitor Compatible

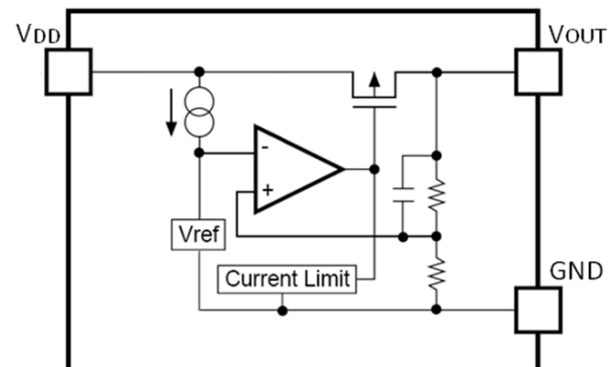
APPLICATIONS

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

TYPICAL APPLICATION



BLOCK DIAGRAM



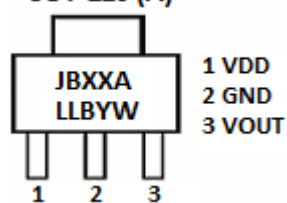
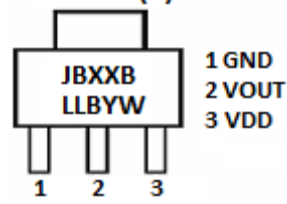
BL8071

ORDERING INFORMATION

BL8071 ①②③④⑤

Code	Description
①	Temperature&Rohs: C:-40~85°C ,Pb Free Rohs Std.
②	Package type: LA: SOT-223 (A) LB: SOT-223 (B)
③	Packing type: TR:Tape&Reel (Standard)
④	Output voltage: e.g. 12=1.2V 18=1.8V 25=2.5V 33=3.3V 50=5.0V
⑤	Voltage accuracy: 1=±1%(Customized) Blank(default)=±2%

PIN CONFIGURATION

Product Classification		BL8071CLATR□□
JBXX LLBYW	JB:Product Code	SOT-223 (A) 
	XX:Output Voltage	
	A: A type	
	LL:LOT NO.	
	B:FAB Code	
	YW:Date Code	
Product Classification		BL8071CLBTR□□
JBXX LLBYW	JB:Product Code	SOT-223 (B) 
	XX:Output Voltage	
	B: B type	
	LL:LOT NO.	
	B:FAB Code	
	YW:Date Code	
VDD	Supply Voltage Input	
GND	Ground Pin	
VOUT	Output Voltage	

Y: The Year of manufacturing, "1" stands for year 2011, "2" stands for year 2012, and "8" stands for year 2018.
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.

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

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. 6V
Ambient Temperature		-40°C~85°C

ELECTRICAL CHARACTERISTICS

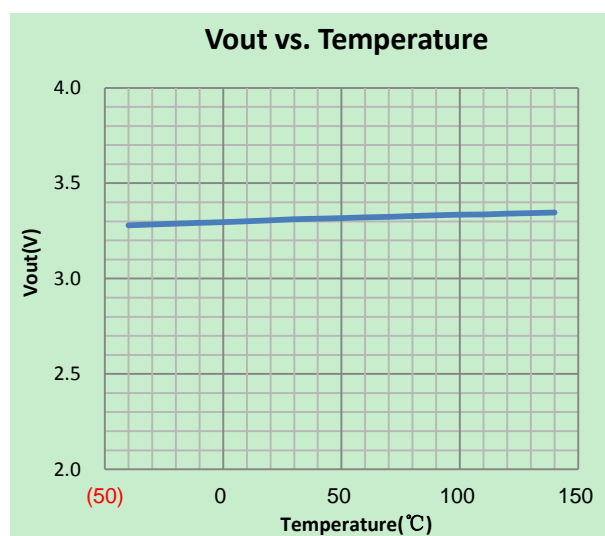
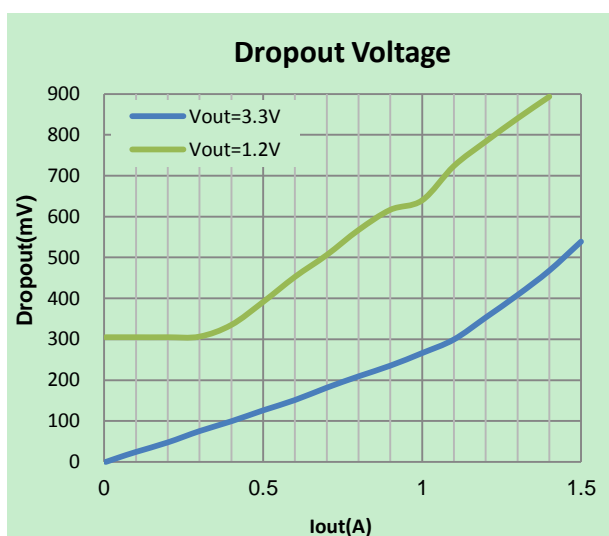
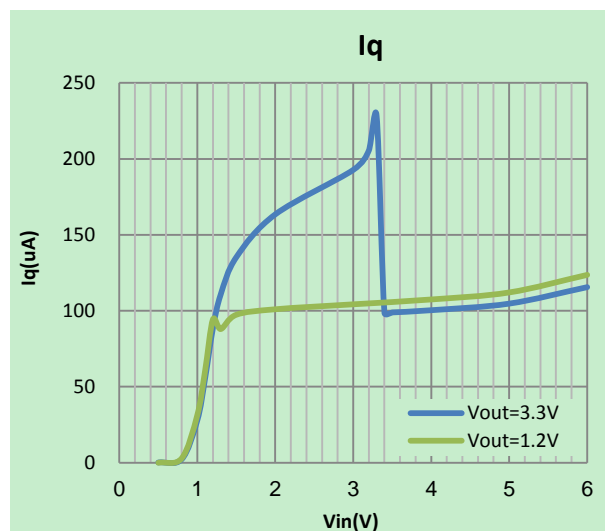
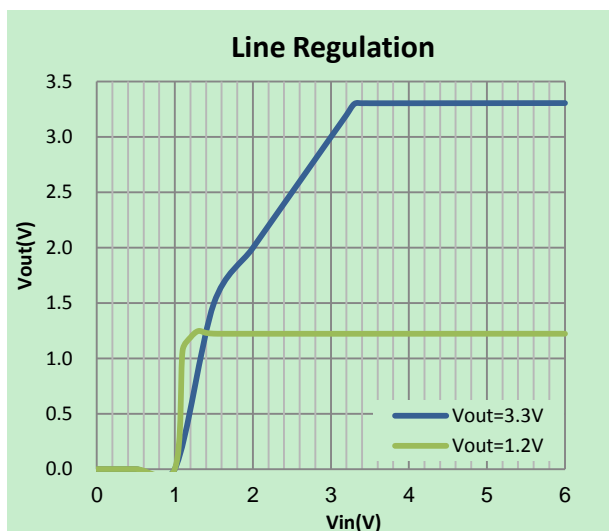
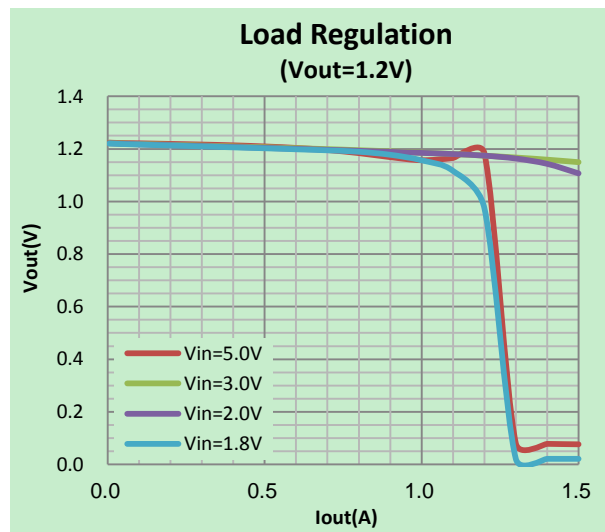
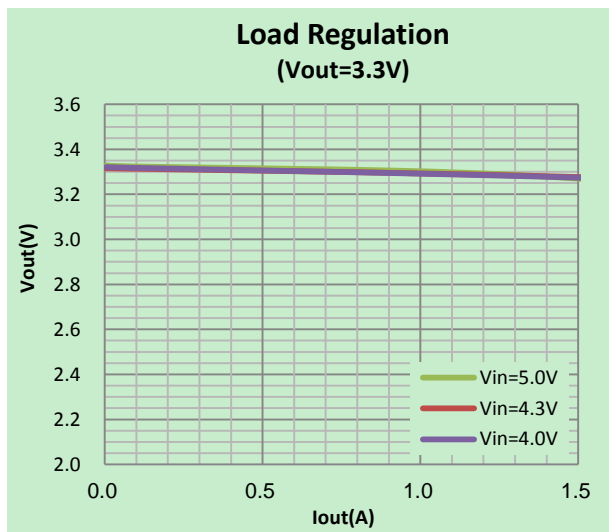
Test Conditions: C_{IN}=4.7uF, C_{OUT}=4.7uF, T_A=25°C, unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Units	
V _{DD}	Input Voltage		1.5*		6	V	
V _{OUT}	Output Voltage	V _{OUT} >1.5	V _{DD} =Set V _{OUT} +1V	V _{OUT} X0.98	V _{OUT}	V _{OUT} X1.02	V
		V _{OUT} <=1.5	1mA≤I _{OUT} ≤10mA	V _{OUT} -0.03		V _{OUT} +0.03	
I _{OUT} (Max.) **	Maximum Output Current	V _{DD} -V _{OUT} =1V	1.5			A	
V _{DROP}	Dropout Voltage	V _{OUT} = 3.3V, I _{OUT} =1A		300	500	mV	
$\frac{\Delta V_{out}}{\Delta V_{in} \cdot V_{out}}$	Line Regulation	I _{OUT} =10mA, 4V≤V _{DD} ≤6V		0.05	0.2	%/V	
ΔV_{out}	Load Regulation	V _{DD} =Set V _{OUT} +1V 1mA≤I _{OUT} ≤2.5A		30	60	mV	
I _S	Supply Current	V _{DD} =Set V _{OUT} +1V, V _{OUT} Floating		100	150	uA	
$\frac{\Delta V_{out}}{\Delta T \cdot V_{out}}$	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		70		dB	
en	Output Noise	BW=10Hz~100KHz		44		uVrms	

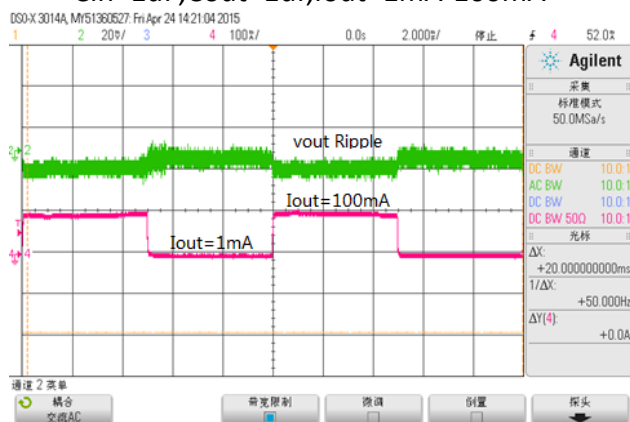
Note: *I_{out}=500mA@V_{out}=1.2V

**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.

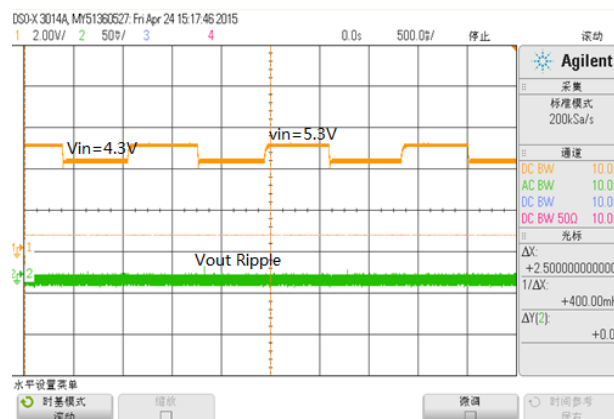
TYPICAL PERFORMANCE CHARACTERISTICS



Load Transient Response (Vin=5V, Vout=3.3V) Cin=1uF, Cout=1uF, Iout=1mA-100mA



Line Transient Response (Vin=5V, Vout=3.3V) Cin=1uF, Cout=1uF, Iout=10mA, Vin=4.3V-5.3V



PACKAGE LINE

Package	SOT-223	Devices per reel	2500Pcs	Unit	mm
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Package specification:

COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	-	-	1.80
A1	0.02	-	0.10
A2	1.50	1.60	1.70
A3	0.80	0.90	1.00
b	0.67	-	0.80
b1	0.66	0.71	0.76
b2	2.96	-	3.09
b3	2.95	3.00	3.05
c	0.30	-	0.35
c1	0.29	0.30	0.31
D	6.48	6.53	6.58
D1	6.55	6.60	6.65
D2	-	-	7.05
E	6.80	-	7.20
E1	3.40	3.50	3.60
E2	3.33	3.43	3.53
e	2.30BSC		
e1	4.60BSC		
L	0.80	1.00	1.20
L1	1.75REF		
L2	0.25BSC		
R	0.10	-	-
R1	0.10	-	-
θ	0°	-	8°
θ 1	10°	12°	14°

NOTES:
ALL DIMENSIONS REFER TO JEDEC STANDARD TO261-AA

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