

GENERAL DESCRIPTION

BL8071G 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.

BL8071G 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 $\pm 2\%$.

BL8071G series are available in SOT-223, TO-252 packages, which are lead (Pb)- free.

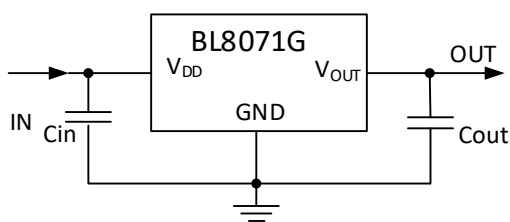
FEATURES

- Low quiescent current: 100uA (Typ.)
- Low dropout voltage:
50mV@ $I_{OUT}=0.1A$, $V_{OUT}=3.3V$ (Typ.)
600mV@ $I_{OUT}=1.5A$, $V_{OUT}=3.3V$ (Typ.)
- High PSRR: 65dB@1KHz (Typ.)
- Low temperature coefficient: $\pm 100\text{ppm}/^\circ\text{C}$
- Output voltage range: 1.2V~5.0V
- Highly accurate: $\pm 2\%$
- Thermal shutdown
- Overcurrent protection

APPLICATIONS

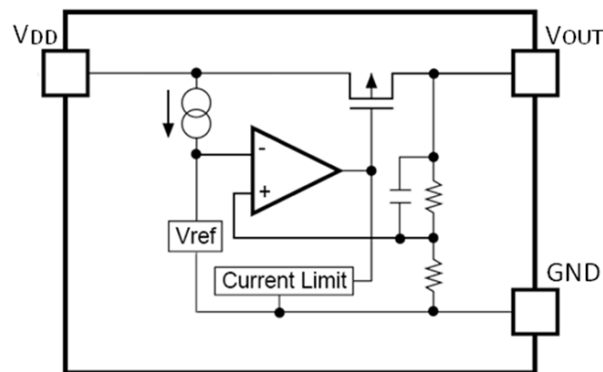
- Reference voltage source
- Battery powered equipment
- PC peripherals
- Wireless devices
- Instrumentation

TYPICAL APPLICATION



Note: Input capacitor ($C_{IN}=4.7\mu\text{F}$) and output capacitor ($C_{OUT}=4.7\mu\text{F}$) are recommended in all application circuit.

BLOCK DIAGRAM



ORDERING INFORMATION

BL8071G [1](#) [2](#) [3](#) [4](#) [5](#)

Code	Description
1	Temperature&RoHS: C:-40~85°C ,Pb Free RoHS Std.
2	Package type: LA: SOT-223 (A) LB: SOT-223 (B) O:TO-252
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%

MARKING DESCRIPTON

Output Voltage Code X

VOUT	Code	VOUT	Code	VOUT	Code
1.2V	2	2.7V	7	3.9V	9
1.3V	3	2.8V	8	4.0V	0
1.4V	4	2.9V	9	4.1V	1
1.5V	5	3.0V	0	4.2V	2
1.8V	8	3.1V	1	4.3V	3
2.0V	0	3.2V	2	4.4V	4
2.1V	1	3.3V	3	4.5V	5
2.2V	2	3.4V	4	4.6V	6
2.3V	3	3.5V	5	4.7V	7
2.4V	4	3.6V	6	4.8V	8
2.5V	5	3.7V	7	4.9V	9
2.6V	6	3.8V	8	5.0V	0

PIN CONFIGURATION

Product classification		BL8071GCLATR□□
JBXX LLLLYW	JB :Product code	
	XX :Output voltage	
	A : A type	
	LLLL :LOT NO.	
YW :Date code		
Product classification		BL8071GCLBTR□□
JBXX LLLLYW	JB :Product code	
	XX :Output voltage	
	B : B type	
	LLLL :LOT NO.	
YW :Date code		
Product classification		BL8071GCOTR□□
JBXX LLLLYW	JB :Product code	
	XX :Output voltage	
	B : B type	
	LLLL :LOT NO.	
YW :Date code		
VDD	Supply voltage input	
GND	Ground pin	
VOUT	Output voltage	

XX: Output Voltage, e.g. 18=1.8V 33=3.3V

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.

ABSOLUTE MAXIMUM RATING

Parameter		Value
Max input voltage		6V
Operating junction temperature (T _j)		125°C
Max Output current		1.5A
Package thermal resistance (θ _{JC})	SOT-223	20°C/W
	TO-252	10°C / W
Storage temperature (T _s)		-65°C~150°C
Lead temperature & time		260°C, 10 Sec
ESD (HBM)		>2000V

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 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.) **	Maximum output current				1.5		A
V _{DROP}	Dropout voltage		V _{OUT} =3.3V, I _{OUT} =1.5A		550	650	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 _Q	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=1KHz, ripple=0.5Vp-p, V _{DD} =Set V _{OUT} +1V		65		dB
T _{SD}	Thermal shutdown temp		V _{IN} =Set V _{OUT} +1V, I _{OUT} =10mA		170		°C
T _{SH}	Thermal shutdown hysteresis		V _{IN} =Set V _{OUT} +1V, I _{OUT} =10mA		35		°C

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.

THERMAL CONSIDERATIONS

We have to take heat dissipation into great consideration when output current or differential voltage of input and output voltage is large. Because in such cases, the power dissipation consumed by BL8071G is very large. BL8071G series uses SOT-223 package type and its thermal resistance is about 20°C/W. And the copper area of application board can affect the total thermal resistance. If copper area is 5cm*5cm (two sides), the resistance is about 30°C/W. So the total thermal resistance is about 20°C/W + 30°C/W. In this case, the power dissipation should be limited less than 1.2W. We can decrease total thermal resistance by increasing copper area in application board. When there is no good heat dissipation copper are in PCB, the total thermal resistance will be as high as 120°C/W, then the power dissipation of BL8071G could allow on itself is less than 1W. And furthermore, BL8071G will work at junction temperature higher than 125°C under such condition and no lifetime is guaranteed.

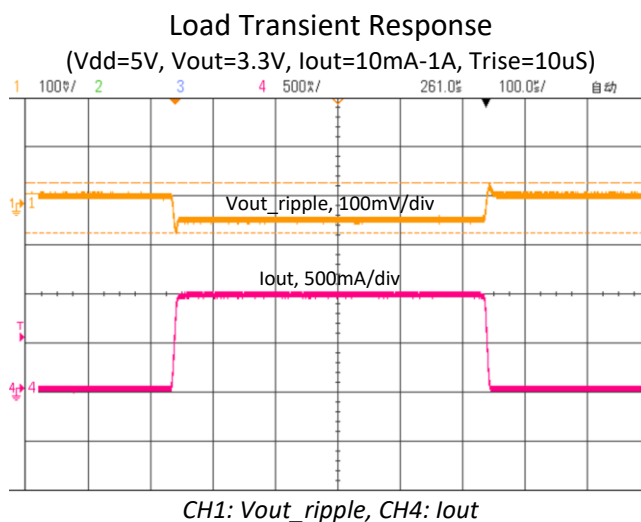
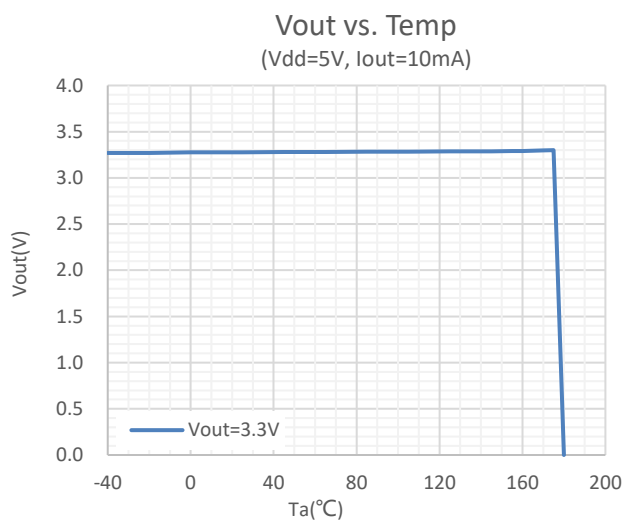
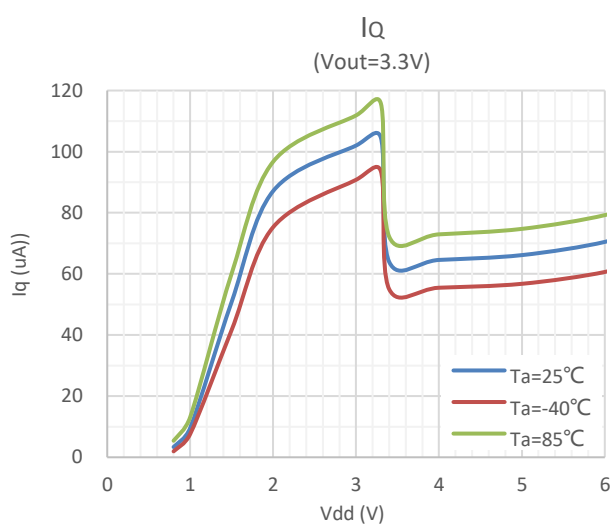
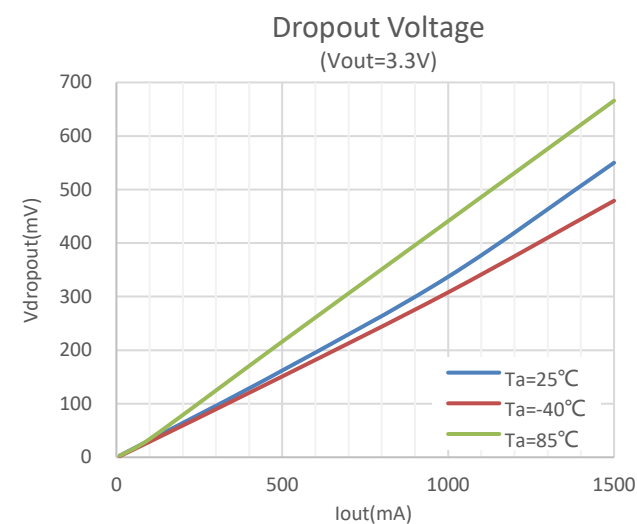
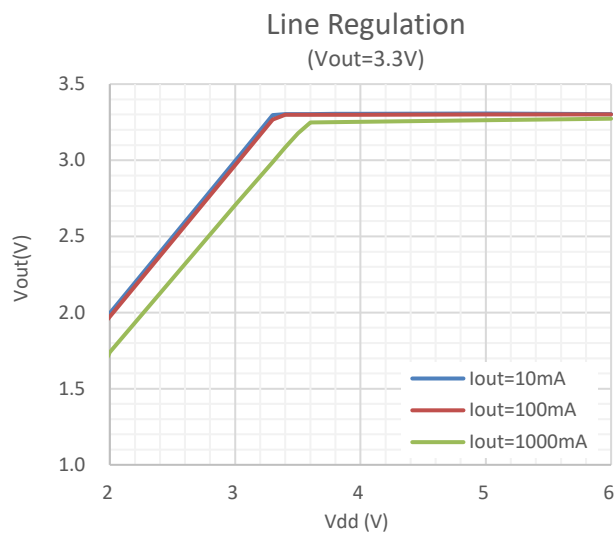
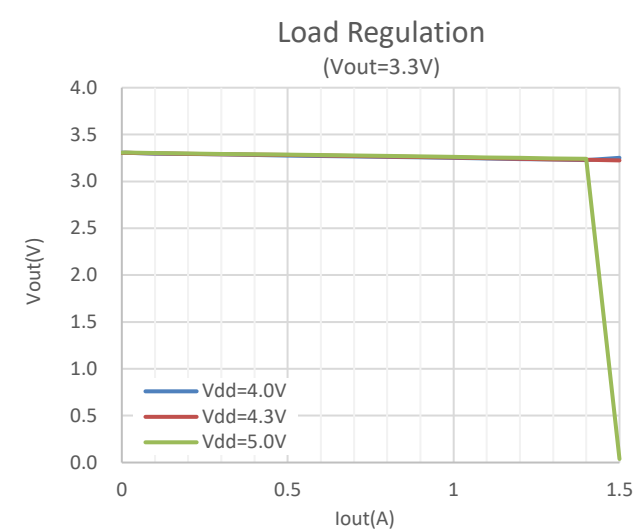
CURRENT LIMIT MODE

Current Limit module can keep chip and power system away from danger when the load current is higher than the current limit threshold. When V_{OUT} decrease the Short Circuit Current will fold back to a small value.

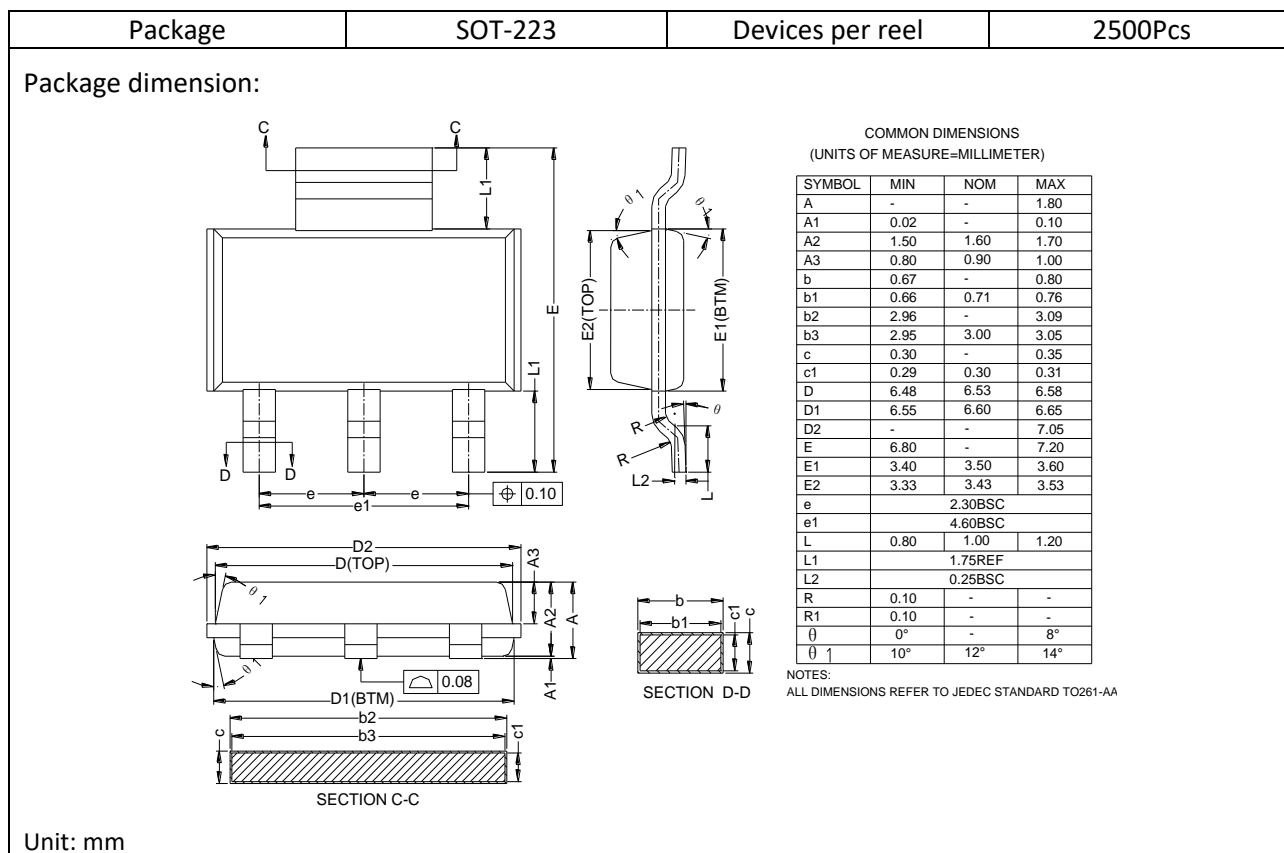
SHORT CIRCUIT PROTECTION

When V_{OUT} short to GND, the short circuit protection will be triggered and clamp the output current to approximately 300mA. This feature protects the regulator from over current and damage due to overheating.

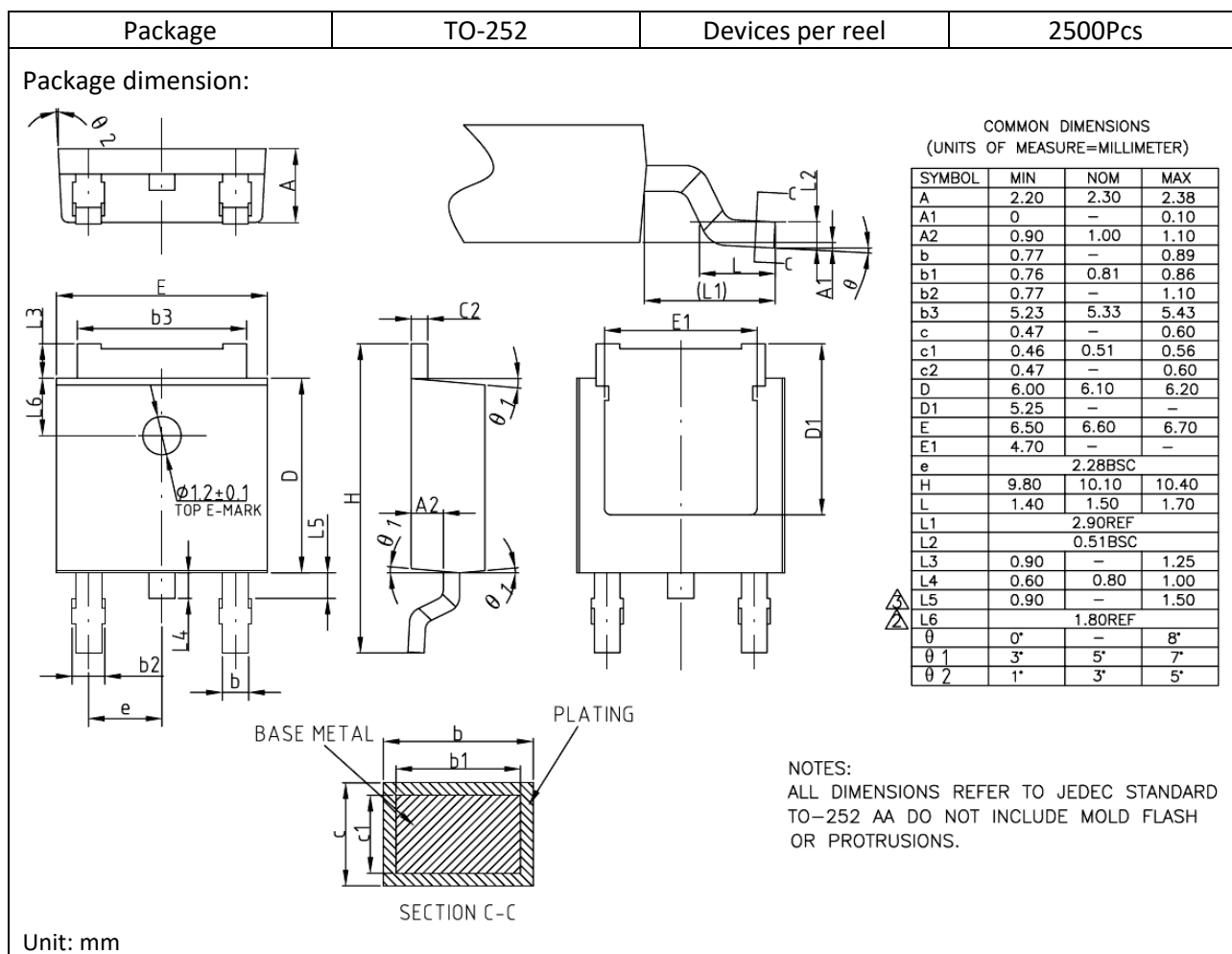
TYPICAL PERFORMANCE CHARACTERISTICS



PACKAGE OUTLINE



BL8071G



深圳市泰德兰电子有限公司（简称：泰德兰），是一家专业代理国内外品牌电子元器件代理商。“泰德兰”的目标是为客户提供高性价比的产品和服务。我们一贯坚持：“品质第一、价格合理、交货快捷、服务至上、凝聚客户”的发展理念和宗旨以向采购商提供最满意的服务为己任，向采购商提供规范化、专业化、多元化、全方位的优质服务，真诚欢迎海内外直接用户前来洽谈合作，共谋发展！也希望能与电子界同行进行广泛的交流合作共同为行业的繁荣发展做出贡献！

目前，泰德兰电子主要代理：霍尼韦尔、理光、NJRC、英集芯、维安、贝岭、捷捷微、冠禹、松木、辉芒微、茂捷等。

主营产品线有 LDO、DC/DC、AC-DC、电压检测器、充电 IC、负载开关 IC、保险丝、多功能集成保护 IC、功率 TVS 管、二三极管、PMU、马达驱动、LED 驱动、功率器件、数字电源、Hall IC、磁组、传感器 IC、汽容胶传感器、压力传感器、位移传感器、惯导模块、锂电保护芯片、微动开关、IGBT、PTC、ESD、EEPROM, 8bit/32bit MCU, PMIC、中低压 MOS 管、高压 COOL MOS、高压平面 MOSFET 等。

“泰德兰”代理的产品被广泛应用于液晶电视、笔记本、联网、便携式设备、机顶盒、闭路电视/安全、桌面、LED 照明、玩具、网络电视机、无人机、扫地机、无线充、蓝牙设备、汽车应用、行车记录仪、无线路由等领域。

“泰德兰”所代理的产品均通过 ISO 9001:2000 品质管理系统检验；获得原厂颁发的代理授权证书。

深圳公司

深圳市泰德兰电子有限公司

地址：深圳市福田区彩田南路 2010 号中深花园 A 座六层

电话：0755-83322522 传真：0755-83648400

手机：131-89714166 Q Q：2853781768