

FEATURES

- Supply Voltage: 4.75V~40V
- Output Range: 1.8V,3.3V,3.6V,5.0V~10V
- Output Accuracy: $\pm 2\%$
- Output Current: 100mA (Up to 500mA Typ.)
- PSRR : 45dB @ 100Hz
- Dropout Voltage : 300mV @ $I_{OUT}=100mA$
- Quiescent Current : $6\mu A @ V_{IN}=7V(Typ.)$
- Recommend Capacitor : 10uF

DESCRIPTION

The BL9153 series is a high accuracy, high input voltage low quiescent current, high speed, and low dropout Linear regulator with high ripple rejection. The device is manufactured with Bi-CMOS process. The BL9153 offers over-current limit and over temperature protection to ensure the device working in well conditions. The BL9153 regulators are available in standard SOT-89-3L packages. Standard products are Pb-free and Halogen-free.

APPLICATIONS

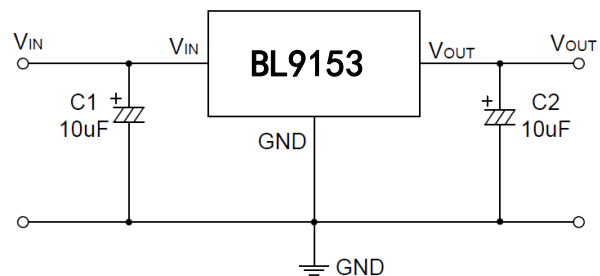
- Smart Meter
- Instrumentation
- Home appliances
- Industrial control
-

ORDERING INFORMATION

Part No.	BL9153-xxCC3TR
Package Type	SOT-89-3L
Tape & Reel	1000pcs/Reel

xx: Output voltage, e.g.
 18=1.8V,33=3.3V,36=3.6V,50=5.0V, etc

TYPICAL APPLICATION



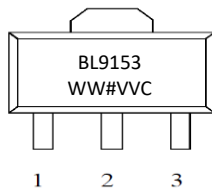
ABSOLUTE MAXIMUM RATING (Ta=25°C)

Parameter Name	Rating	Unit
Power Dissipation	Internal limited	mW
V _{IN} Range	-0.3~45	V
V _{OUT} Range	-0.3~12	V
Lead Temperature Range	260	°C
Storage Temperature Range	-55~150	°C
Operating Junction Temperature Range	125	°C
ESD MM	400	V
ESD HBM	4K	V

RECOMMENDED OPERATING CONDITIONS (Ta=25°C)

Parameter Name	Rating	Unit
Operating Supply voltage	4.75~40	V
Operating Temperature Range	-40~85	°C
Thermal Resistance(On PCB),R _{θJA}	43.5	°C/W
Power Dissipation	1000	mW

BODYING MARKING (SOT89-3L/TOP VIEW)



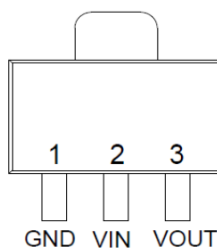
“#”: represents a space;

“WW”: represents the packaging week;

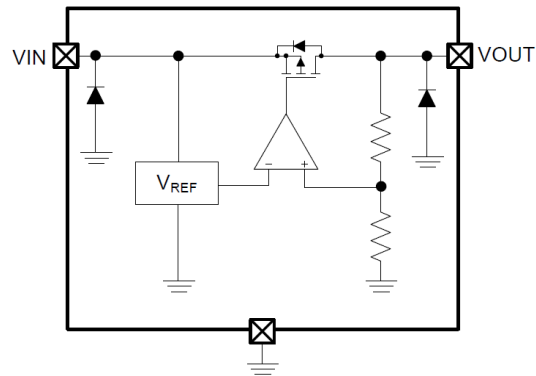
“VV”: represents voltage code,

VV	33	36	50	...
Voltage	3.3V	3.6V	5.0V	...

PIN CONFIGURATION



FUNCTIONAL BLOCK DIAGRAM



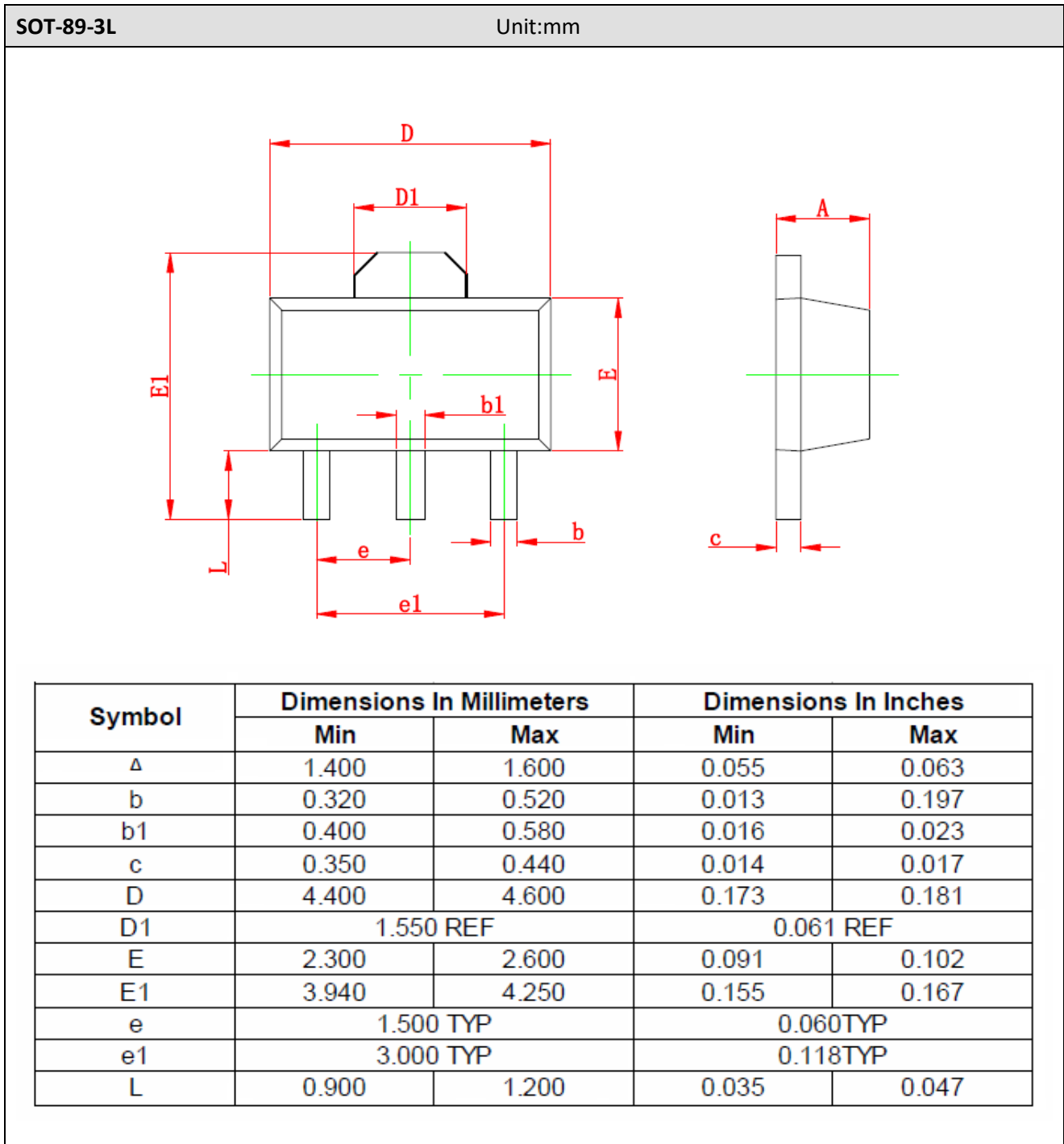
PIN DESCRIPTION

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V _{IN}	Voltage Input
3	V _{OUT}	Voltage Output

ELECTRICAL CHARACTERISTICS (Ta=25°C, VIN=12V, CIN=COUT=10uF, unless otherwise noted)

Parameter Name	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Range	V _{IN}	I _{OUT} =10mA	4.75		40	V
Output Voltage	V _{OUT}	V _{IN} =12V, I _{OUT} =10mA	3.234	3.3	3.366	V
			3.528	3.6	3.672	
			4.9	5.0	5.1	
Maximum Output Current	I _{OUT_PK}	V _{IN} =12V, R _L =1Ω		500		mA
Quiescent Current	I _Q	V _{IN} =3.6V, No load		5.8	7.8	uA
		V _{IN} =5.5V, No load		5.9	7.9	
		V _{IN} =7V, No load		6	8	
		V _{IN} =24V, No load		7.5	10	
		V _{IN} =40V, No load		10	15	
Dropout Voltage	V _{DROP}	I _{OUT} =1mA		2	12	mV
		I _{OUT} =100mA		300	400	
Line Regulation	LNR	V _I =7~24V, V _{OUT} =5V, I _{OUT} =1mA		0.02		%V
		V _{IN} =7~45V, V _{OUT} =5V, I _{OUT} =1mA		0.1		
Load Regulation	LDR	V _{IN} =12V, I _{OUT} =1~100mA		0.6		%
Output Noise	e _{NO}	I _{OUT} =10mA	-100		100	μV
Ripple Rejection	PSRR	V _{IN} =10V V _{PP} =0.5V I _{OUT} =1mA	f=100Hz		50	dB
			f=1KHz		40	
			f=10KHz		30	
Thermal Protection	T _{SD}	V _{IN} =12V, I _{OUT} =1mA		155		°C
Thermal Protection Hys	T _{SD_HYS}	V _{IN} =12V, I _{OUT} =1mA		30		°C
Temperature Coficient	ΔVo/ΔT	V _{IN} =12V, I _{OUT} =1mA		±0.4		mV/°C

OUTLINE DIMENSIONS



Storage conditions and packaging

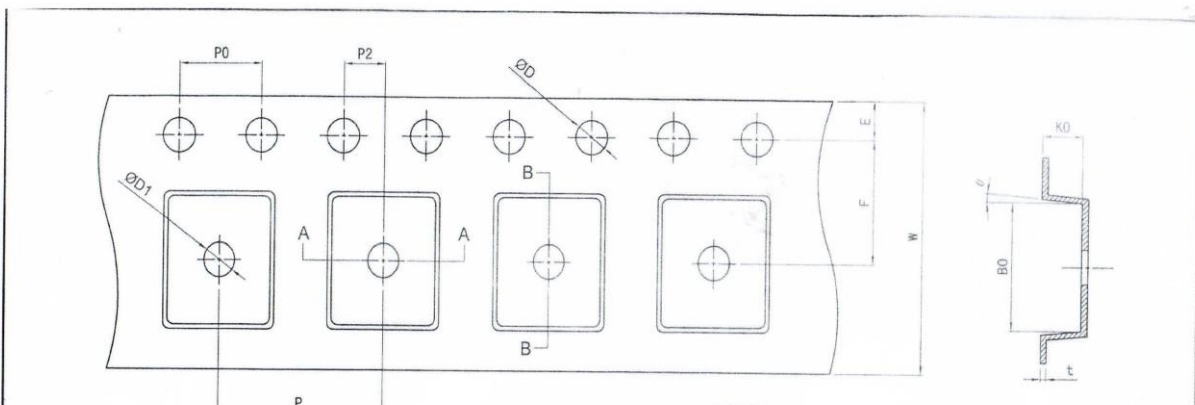
Humidity sensitivity level: MSL 3

Warranty period: two years

Packing method: Tape

Minimum packaging: 1000

Tray information

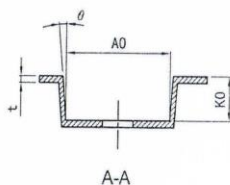


共同尺寸

外观	尺寸(mm)
E	1.75±0.10
F	5.50±0.05
P2	2.00±0.05
D	1.50 ^{±0.1}
D1	1.50±0.1
P0	4.00±0.10
10P0	40.00±0.20

口袋尺寸

外观	尺寸(mm)
W	12.00±0.10
P	8.00±0.10
A0	4.80±0.10
B0	4.40±0.10
K0	1.80±0.10
t	0.30±0.05
θ	3—5° TYP



技术要求:

- 任意10个传输孔间距的累积误差±0.2mm;
- 载带沿长度方向的侧弯≤1mm/100mm;
- 从口袋底部上方为0.3mm处测定A0及B0;
- K0是从口袋的内部底部到载带的顶部表面测量的尺寸;
- 表面电阻率: $10^5 \sim 10^{10} \Omega / \square$;
- 粗糙度: $Ra < 0.8 \mu m$;
- 颜色: 黑色(参考色号: C0 M0 Y35 K100)。

拟制	王永忠 2005.05.23	测试部	2012.5.10
审核	孙雅迪 2012.5.10	制造部	2012.5.10
复审	孙雅迪 2012.5.10	采购部	
设备部		销售部	
质量部	孙雅迪 2012.5.10	标准化	孙雅迪 2012.5.10
制图		批准	孙雅迪 2012.5.10
参考图号		幅面	A4 比例

△	规格由SOT-89改为SOT89-3L	密级	20120510
△	修改技术要求第10项改为10°	密级	20091208
△	销孔24-0.01改为30.30±0.05	密级	20060725
△	增加加工程序	密级	20060725
△	PTCZ0402HTTY01改为PTCZ0402HTTY01	密级	20090523
更改标记		密级	密级
天水华天科技股份有限公司 Tian Shui Hua Tian Technology Co., Ltd			
SOT89-3L		图号	PTCZ0402HTTY01 △
载带		单位	英寸 密级
		mm	4版
材料: PC B(黑色防静电)		第1张	共1张
例: 1: 1			