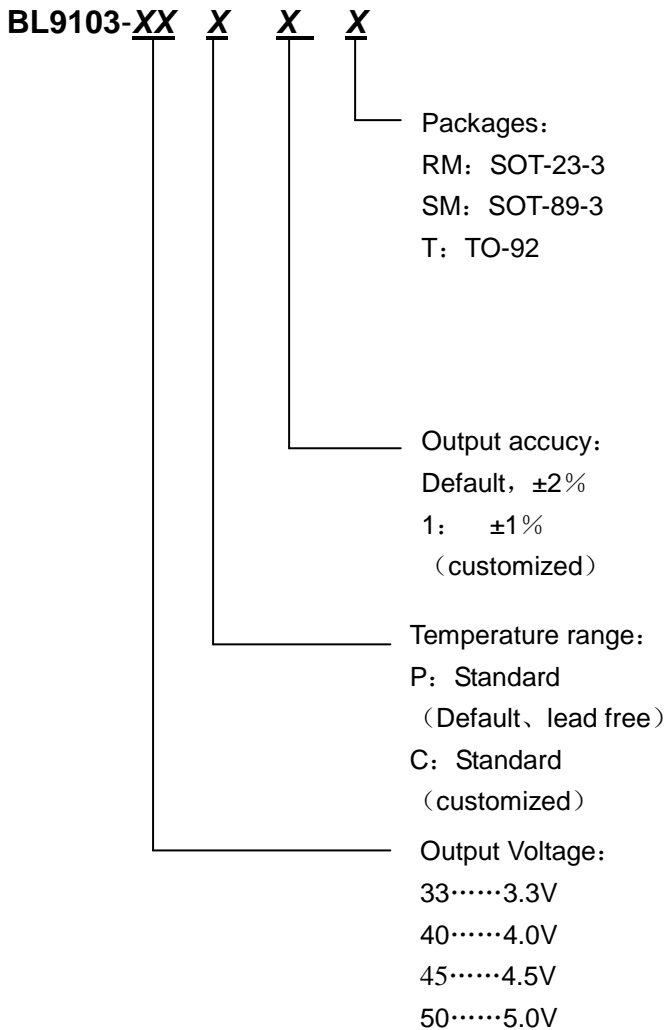


250mA, Low Power Consumption LDO BL9103 Series

■ General Description

The BL9103 series are a group of positive voltage output, three-pin regulator, that provide a high current even when the input/output Voltage differential is small. Low power consumption and high accuracy is achieved through CMOS technology. They allow input voltages as high as 18V.

■ Selection Guide



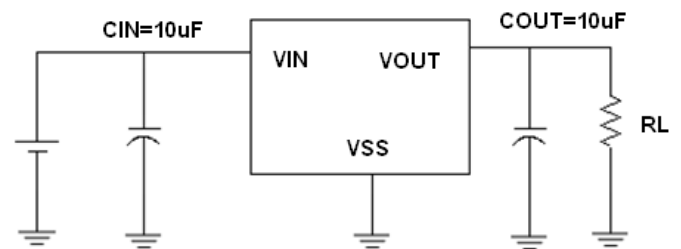
■ Features

- Ultra low quiescent current: 3.0uA(typ)
- High input voltage (up to 18v)
- Low dropout voltage :80mV@Iout=40mA
(Vout=3.3v)
- Output voltage accuracy: $\pm 2\%$
- Maximum output current: 250mA
(within max.power dissipation,Vout=3.3V)
- Low temperature coefficient
- Package: SOT23-3、TO-92、SOT89-3

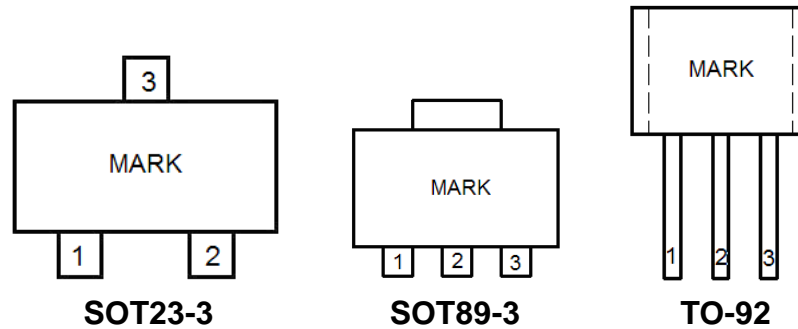
■ Typical Application

- Cameras, video recorders
- Voltage regulator for microprocessor
- Voltage regulator for LAN cards
- Wireless communication equipment
- Audio/Video equipment

■ Typical Application Circuit



■ Pin Configuration

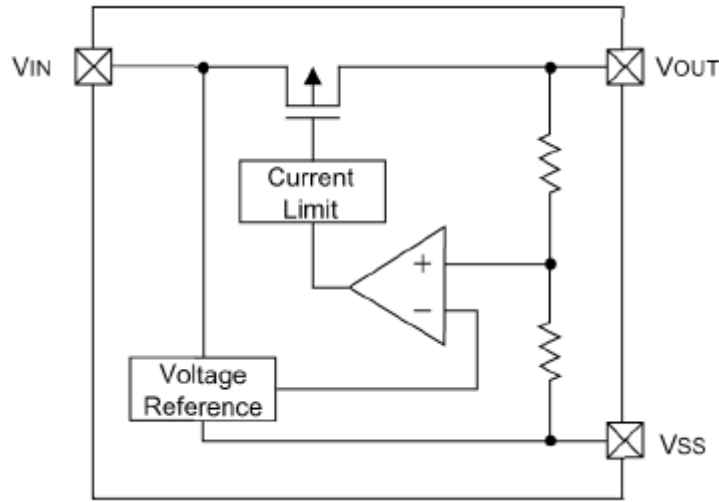


■ Pin Description

Pin Number		Pin Name	Functions
SOT89-3/TO-92	SOT23-3		
1	1	V_{SS}	Ground
2	3	V_{IN}	Input
3	2	V_{OUT}	Output

■ Absolute Maximum Ratings

Parameter	Symbol	Ratings	Units
Input Voltage	V_{IN}	18	V
Output Voltage	V_{OUT}	$V_{SS}-0.3 \sim V_{IN} + 0.3$	V
Output Current	I_{out}	500	mA
Operating Temperature Range	T_{OPR}	$-40 \sim +85$	$^{\circ}C$
Storage Temperature Range	T_{STG}	$-40 \sim +125$	$^{\circ}C$
Power Dissipation	SOT89-3	500	mW
	TO-92	500	
	SOT23-3	300	

■ Block Diagram

■ Electrical Characteristics
BL9103-33

($V_{IN} = V_{OUT} + 1.0V$, $C_{IN} = C_L = 10\mu F$, $T_a = 25^\circ C$, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT} = 40mA$, $V_{IN} = V_{out} + 1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				18	V
Maximum Output Voltage	I_{OUT_max}	$V_{IN} = V_{out} + 1V$	250			mA
Load Regulation	ΔV_{OUT}	$V_{IN} = V_{out} + 1V$, $1mA \leq I_{OUT} \leq 60mA$		15	40	mV
Dropout Voltage (Note 3)	V_{dif}	$I_{OUT} = 40mA$		80		mV
Supply Current	I_{SS}	$V_{IN} = V_{out} + 1V$		3	4	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT} = 40mA$ $V_{out} + 1V \leq V_{IN} \leq 18V$		0.1	0.2	%/V
$\Delta V_{OUT} / \Delta T_a$	Temperature Coefficient	$V_{IN} = V_{out} + 1V$, $I_{OUT} = 40mA$ $-40^\circ C < T_a < 85^\circ C$		± 0.7		mV/ $^\circ C$

BL9103-40

 ($V_{IN} = V_{OUT} + 1.0V$, $C_{IN} = C_L = 10\mu F$, $T_a = 25^\circ C$, unless otherwise noted)

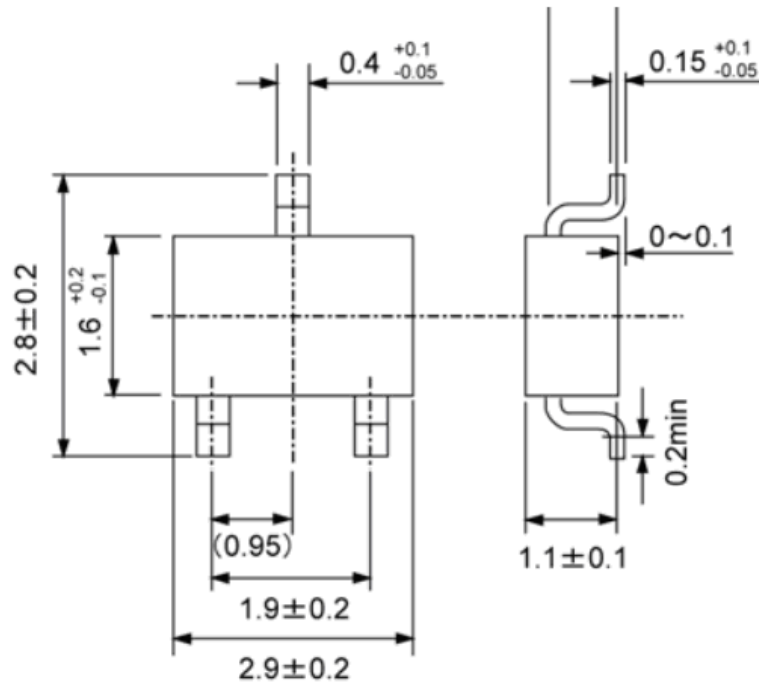
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT} = 40mA$, $V_{IN} = V_{OUT} + 1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				18	V
Maximum Output Voltage	I_{OUT_max}	$V_{IN} = V_{OUT} + 1V$	250			mA
Load Regulation	ΔV_{OUT}	$V_{IN} = V_{OUT} + 1V$, $1mA \leq I_{OUT} \leq 60mA$		15	40	mV
Dropout Voltage (Note 3)	V_{dif}	$I_{OUT} = 40mA$		70		mV
Supply Current	I_{SS}	$V_{IN} = V_{OUT} + 1V$		3	4	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT} + 1V \leq V_{IN} \leq 18V$		0.1	0.2	%/V
$\Delta V_{OUT} / \Delta T_a$	Temperature Coefficient	$V_{IN} = V_{OUT} + 1V$, $I_{OUT} = 40mA$ $-40^\circ C < T_a < 85^\circ C$		± 0.7		mV/ $^\circ C$

Note :

- $V_{OUT(T)}$: Specified Output Voltage
- $V_{OUT(E)}$: Effective Output Voltage (ie. The output voltage when " $V_{OUT(T)} + 1.0V$ " is provided at the Vin pin while maintaining a certain Iout value.)
- $V_{DIF} = V_{IN1} - V_{OUT(E)}$
 V_{IN1} : The input voltage when $V_{OUT(E)}$ appears as input voltage is gradually decreased.
 $V_{OUT(E)}$ = A voltage equal to 98% of the output voltage whenever an amply stabilized Iout and $\{V_{OUT(T)} + 1.0V\}$ is input.

■ Packaging Information

● SOT23-3



● SOT89-3

