

RoHS Compliant Product

### Description

The S2930-33 is a positive voltage output, three-pin regulator which provides high output current even when the input/output voltage differential is small. The S2930-33 consists of a high-precision voltage reference, an error amplification circuit, and a current limited output driver.

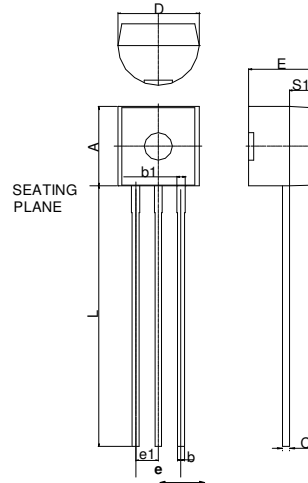
### Features

- \* High Accurate: Output Voltage  $\pm 2\%$
- \* Max. Output Current: 250mA
- \* Input Stability: Typ. 0.2%/V
- \* CMOS Low Power Consumption: Type 3.3uA

### Applications

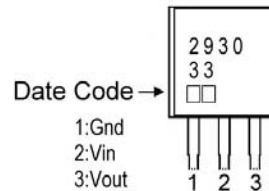
- \* Radio Control systems
- \* Voltage Reference
- \* Portable/Palm Top/Notebook Computers
- \* Battery Powered Systems
- \* Automotive Electronics
- \* Cordless Telephones

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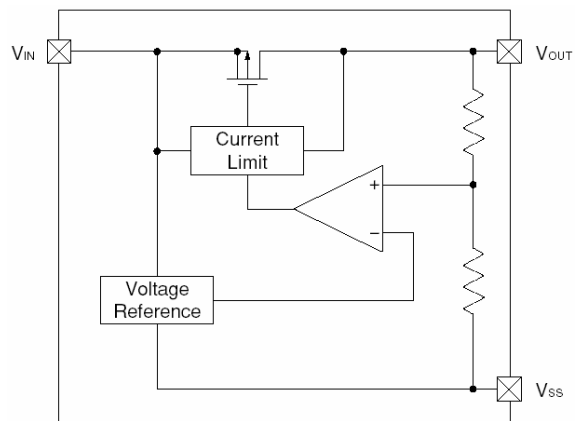


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.45	4.7	D	4.44	4.7
S1	1.02	-	E	3.30	3.81
b	0.36	0.51	L	12.70	-
b1	0.36	0.76	e1	1.150	1.390
C	0.36	0.51	e	2.42	2.66

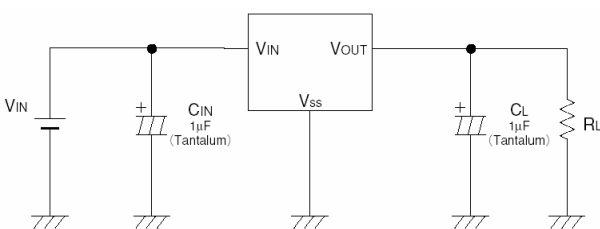
### Marking :



### Block Diagram



### Typical Application Circuit



## Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Input Voltage	$V_{IN}$	10	V
Output Current	$I_{OUT}$	250	mA
Output Voltage	$V_{OUT}$	3.3	V
Operating Ambient Temperature	$T_{opr}$	-30~+75	°C
Storage Temperature	$T_{stg}$	-30~+70	°C
Continuous Total Power Dissipation	$P_D$	300	mW

## Electrical Characteristics $T_a=25^\circ\text{C}$

**S2930-33  $V_{OUT}(T) = 3.3\text{V}$  (Note1)**

Parameter	Symbol	Condition	Min	TYP	Max	Unit
Output Voltage	$V_{OUT}(E)$ (Note2)	$V_{IN}=4.0\text{V}$ , $I_{OUT}=40\text{mA}$	3.234	3.300	3.366	V
Max. Output Current	$I_{OUT\ max}$	$V_{IN}=4.3\text{V}$ , $V_{OUT}(E) \geq 2.97\text{V}$	250	-	-	mA
Load Stability	$\Delta V_{OUT}$	$V_{IN}=4.3\text{V}$ , $I_{OUT}=1\text{mA}$ to $80\text{mA}$	-	-	90	mV
Input-Output Voltage Differential (Note3)	$V_{dif1}$	$I_{OUT}=80\text{mA}$	-	-	450	mV
	$V_{dif2}$	$I_{OUT}=150\text{mA}$	-	-	850	
Supply Current	$I_{SS}$	$V_{IN}=4.3\text{V}$	-	-	4.5	$\mu\text{A}$
Input Stability	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT}=40\text{mA}$ $V_{IN}=4.3\text{V}$ to $10\text{V}$	-	0.2	0.3	%/V
Input Voltage	$V_{IN}$		-	-	10	V

Note 1:  $V_{OUT}(T)$  = Specified Output Voltage.

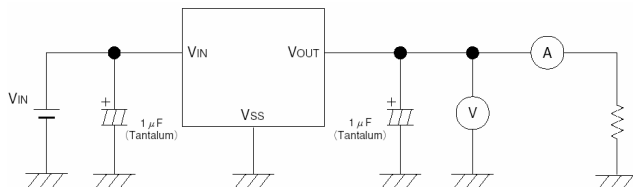
2:  $V_{OUT}(E)$  = Effective Output Voltage (i.e. the output voltage when " $V_{OUT}(T) + 1.0\text{V}$ " is provided at the  $V_{IN}$  pin while maintaining a certain  $I_{OUT}$  value).

3:  $V_{dif} = V_{IN}^{(Note4)} - V_{OUT}(E)$

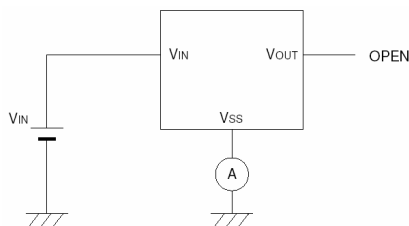
4:  $V_{IN1}$  = The input voltage at the time 98% of  $V_{OUT}(E)$  is output (input voltage has been gradually reduced).

## Test Circuit

Circuit1



Circuit2



### Characteristics Curve

