



## General Description (产品描述)

SE82XX series is designed for power-sensitive applications. It includes a precision and high voltage input stage, an ultra-low-power bias current branch, and results in a ultra-low-power and low-dropout linear regulator.

The SE82XX operates from an input voltage of  $V_{OUT}+1V$  to 33V, consumes only 2.5 $\mu$ A of quiescent current, and offers 1% initial accuracy and low dropout voltage, 300mV typical at 100mA.

SE82XX provides fixed 3.0V, 3.3V and 5V outputs.

Other features include short-circuit protection and thermal shutdown.

## Features(产品特性)

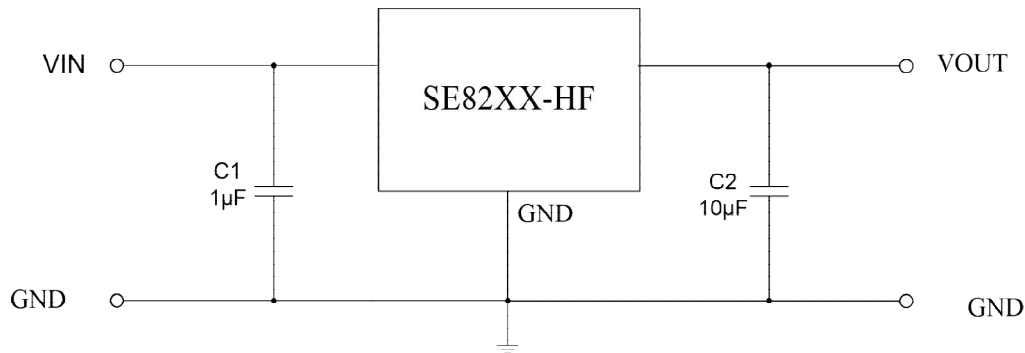
- Ultra Low Quiescent Current: 2 $\mu$ A(Typ.)
- Wide Operating Voltage:  $V_{OUT}+1V$  to 33V
- High output current:  $\geq 200mA$
- System startup with no overshoot
- Short circuit protection is designed with no overshoot
- UVLO 1.8V
- Low Dropout Voltage
- High Accuracy Output Voltage:  $\pm 1\%$
- Excellent power / load transient response
- Low temperature coefficient:  $\pm 100ppm/^{\circ}C$
- Thermal and Short-Circuit Protection
- SOT-89、SOT23-3、SOT23-5 packages
- Customer Pin Assignments are available

## Applications(产品应用)

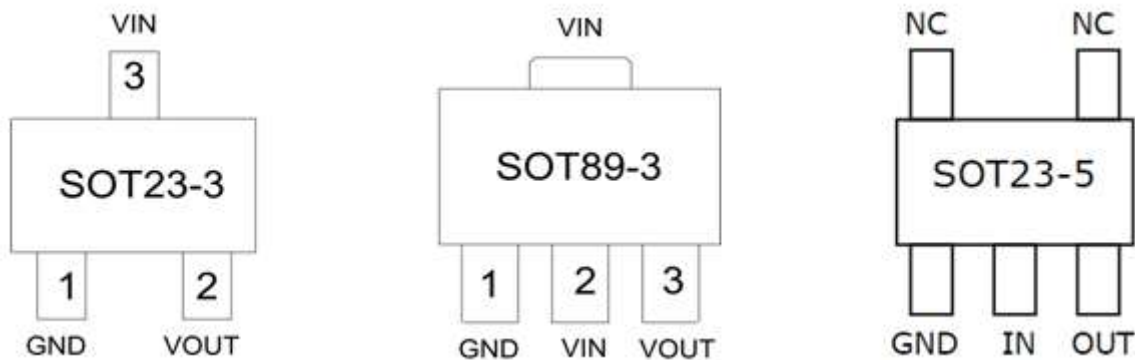
Battery-powered equipment  
Smoke detector and sensor  
Microcontroller Applications  
Smart electric meter



### Typical Application (典型应用电路)



### Pin Configuration (管脚排列)

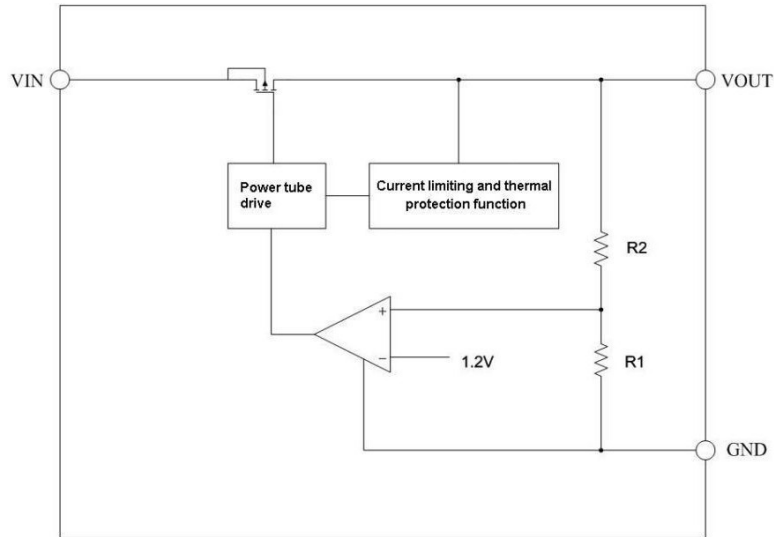


### Pin Description (管脚功能描述)

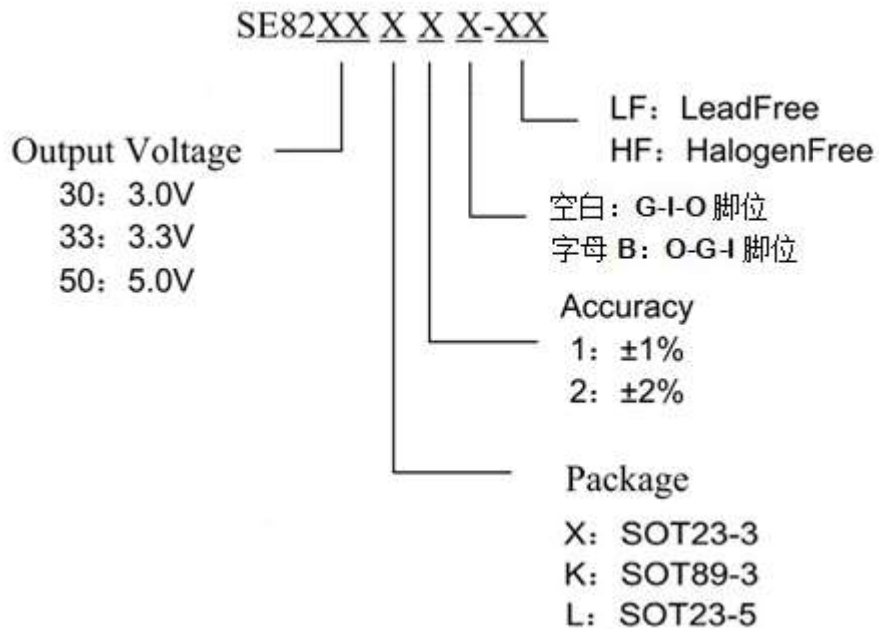
Pin Name	Pin Function Description
VIN	In put pin
VOUT	Out put pin
GND	Ground pin
NC	No connection



### Functional Block Diagram (功能框图)



### Ordering Information (订货信息)





**Absolute Maximum Ratings(最大额定参数)**

Symbol	Parameter	Value	Units
$V_{IN}$	Input Supply Voltage	35	V
$V_{OUT} \text{--- GND}$	Output Voltage TO GND	15	
$T_A$	Operating Temperature	-40---105	°C
$T_{STG}$	Storage Temperature	-40---150	
$T_J$	Maximum Junction Temperature	150	
$T_{LEAD}$	Lead Temperature (Soldering) 10 seconds	260	
$\theta_{JA}$	Thermal Resistance, Junction-to-Ambient	165(SOT89)	°C/W
		280(SOT23-3)	
		280(SOT23-5)	
$P_D$	Power Consumption	750(SOT89)	mW
		446(SOT23-3)	
		446(SOT23-5)	
Electrostatic discharge rating	Human Body Model (HBM)	4	kV
	Charged Device Model (MM)	100	V

Note : Stresses exceeding the range specified under “Absolute Maximum Ratings” may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

**Recommended Operating Conditions(推荐工作条件)**

Symbol	Parameter	Maximum	Units
$V_{IN}$	Input Supply Voltage	33	V
$T_A$	Operating Temperature	-20---85	°C
$T_{LEAD}$	Lead Temperature (Soldering) 10 seconds	230	°C



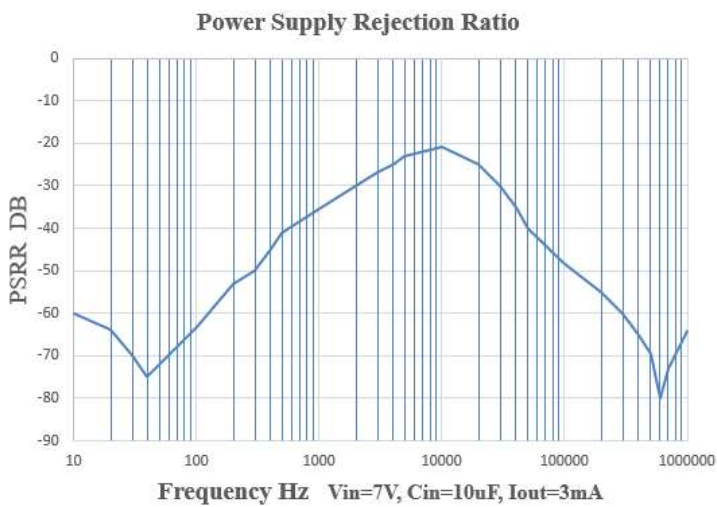
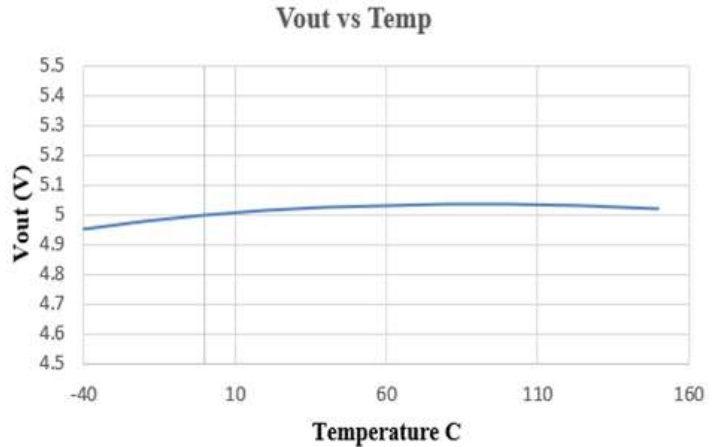
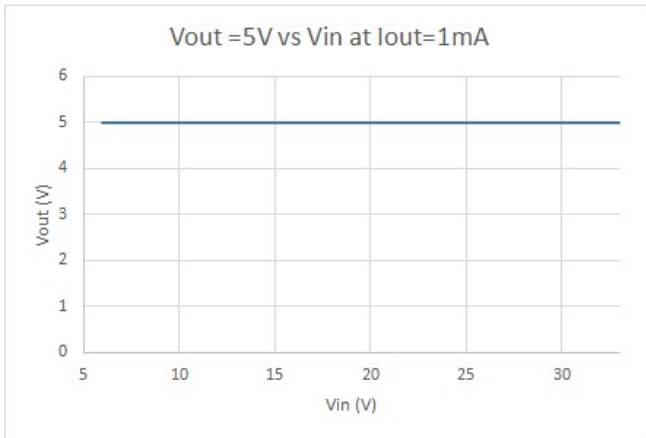
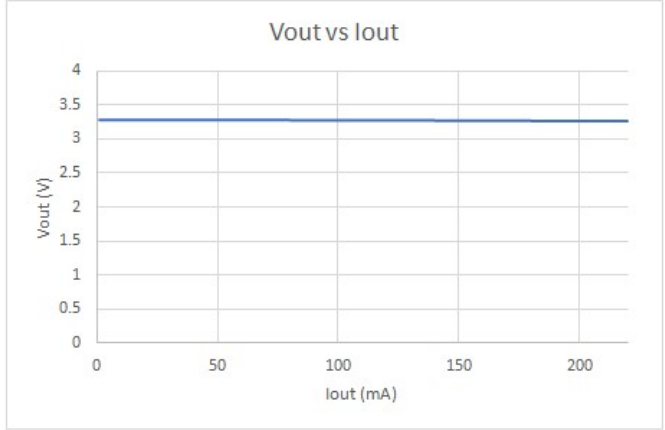
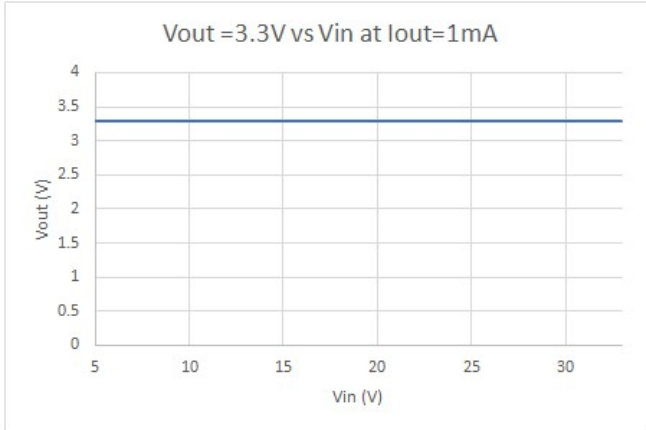
## Electrical Characteristics(电气参数)

( TA=25° C, CIN=1uF, VIN=VOUT+2.0V, COUT=10uF, unless otherwise noted )

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V <sub>IN</sub>	Input Supply Voltage		2.8		33	V
V <sub>OUT</sub>	Output Voltage Accuracy	I <sub>OUT</sub> =10mA	-1%		1%	V
			-2%		2%	V
I <sub>Q</sub>	Quiescent Current	V <sub>IN</sub> =12V, NO Load		2	3	μA
I <sub>OUT</sub>	Output Current			200		mA
V <sub>DROP</sub>	Dropout Voltage	I <sub>OUT</sub> =10mA ΔV <sub>OUT</sub> = - V <sub>OUT</sub> *2%		50		mV
		I <sub>OUT</sub> =100mA ΔV <sub>OUT</sub> = - V <sub>OUT</sub> *2%		500		mV
V <sub>LR</sub>	Load Regulation	1mA ≤ I <sub>OUT</sub> ≤ 150mA		40		mV
V <sub>SR</sub>	Line Regulation	I <sub>OUT</sub> =1mA, V <sub>IN</sub> =(V <sub>OUT</sub> +2V) to 24V		0.2		%/V
I <sub>short</sub>	Short Current			100		mA
T <sub>SHDN</sub>	Thermal Protection			150		°C



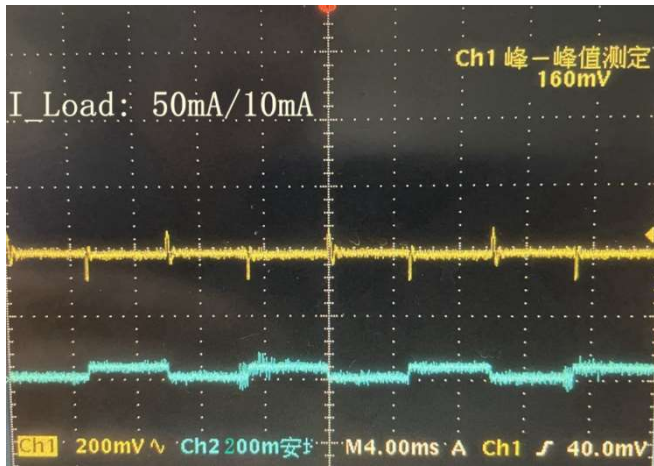
## Typical Performance Characteristics



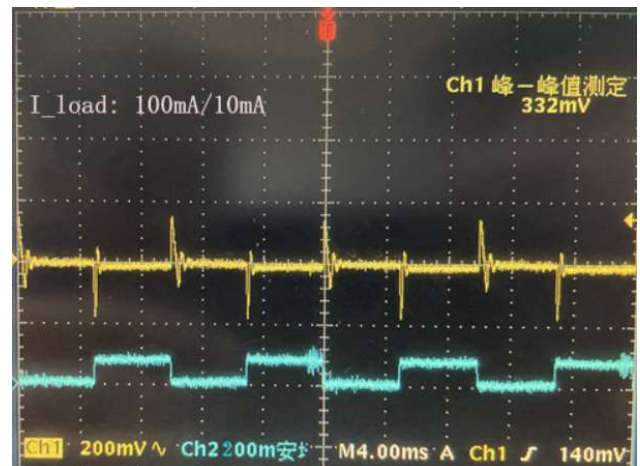


**Transient Responses:**

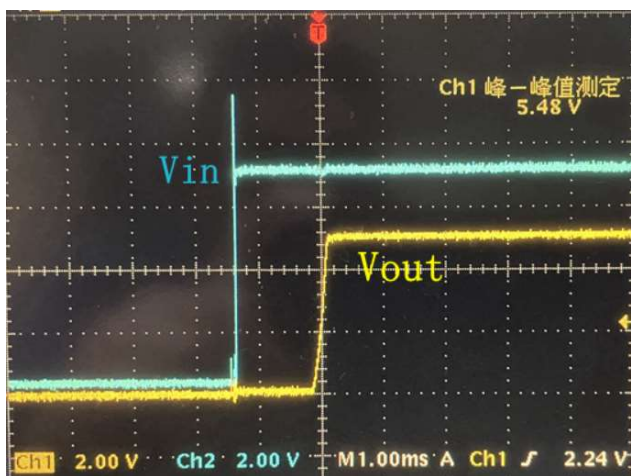
Between 50mA and 10mA



Between 100mA and 10mA

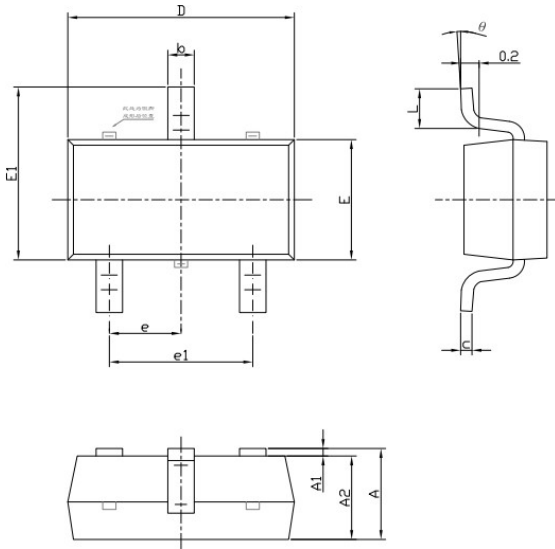


**SoftStart Delay**



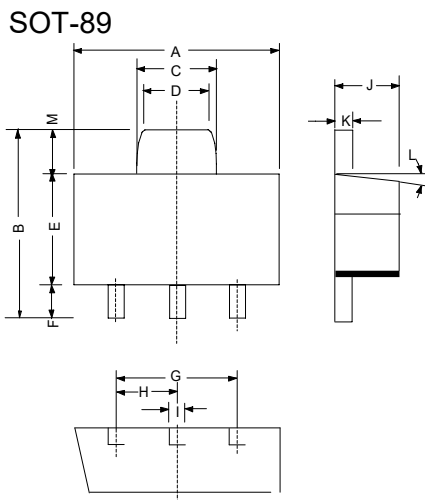


**Outline Drawing for SOT-23-3**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

**Outline Drawing for SOT-89**

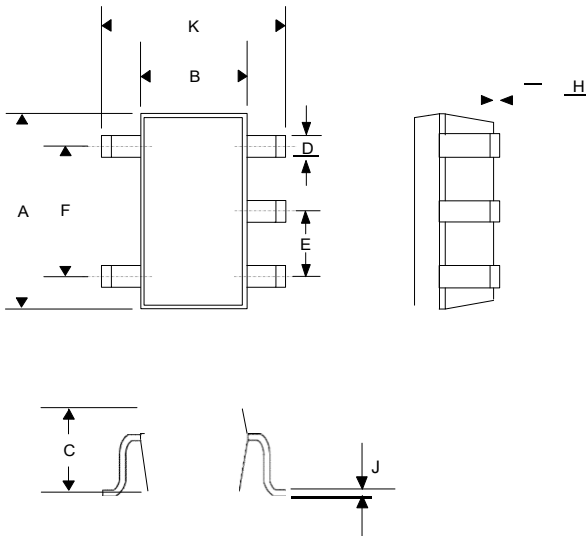


DIMENSIONS				
DIM <sup>N</sup>	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.173	0.181	4.400	4.600
B	0.159	0.167	4.050	4.250
C	0.067	0.075	1.700	1.900
D	0.051	0.059	1.300	1.500
E	0.094	0.102	2.400	2.600
F	0.035	0.047	0.890	1.200
G	0.118 REF		3.00 REF	
H	0.059 REF		1.50 REF	
I	0.016	0.020	0.400	0.520
J	0.055	0.063	1.400	1.600
K	0.014	0.016	0.350	0.410
L	10 °TYP		10 °TYP	
M	0.028 REF		0.70 REF	





**Outline Drawing for SOT-23-5**



DIMENSIONS				
DIM <sup>N</sup>	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.110	0.120	2.80	3.05
B	0.059	0.070	1.50	1.75
C	0.036	0.051	0.90	1.30
D	0.014	0.020	0.35	0.50
E	-	0.037	-	0.95
F	-	0.075	-	1.90
H	-	0.006	-	0.15
J	0.0035	0.008	0.090	0.20
K	0.102	0.118	2.60	3.00

**联系方式:**

北京思旺电子技术有限公司-中国总部

地址：中国北京市海淀区信息路 22 号上地科技综合楼 B 座二层

邮编：100085

电话：010-82895700/1/5

传真：010-82895706

邮箱：[sales@seawardinc.com.cn](mailto:sales@seawardinc.com.cn)

Seaward Electronics Incorporated – 北美办事处

1512 Centre Pointe Dr. Milpitas,

CA95035, USA

电话：1-650-444-0713