

### General Description

The SE8802 is a very low dropout three-terminal regulator. The SE8802 is specifically designed to work with SE8801 for the electricity meter applications. SE8802 is capable of delivering 150mA output current at a very low dropout voltage of 0.82V (Typical). The other unique and important feature is the low noise. SE8802 has a ripple rejection ratio at 62dB (Typical) and this helps to reduce the overall system noise level. The high precision output at 2% ensures that the accurate power supply requirement is met with enough margin in many tough applications.

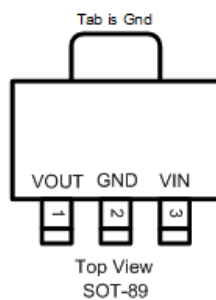
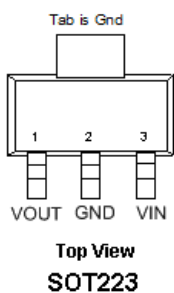
The SE8802 also provides Over Current Protection (OCP) and Over Temperature Protection (OTP) . Both these features will ensure a safe operating environment for electricity meter applications.

The SE8802 is available in SOT-89 and SOT-223 packages.

### Features

- Output voltage of 11.6V (Typ.)
- Output current up to 150mA (Typ.)
- Current limiting
- Over thermal Protection.
- Minimum external components.
- Output voltage tolerances of  $\pm 2\%$
- Input Voltage up to 30V
- Operating Junction Temperature Range -40 to +125°C
- ESD rating is 2KV (Per MIL-STD-883D)

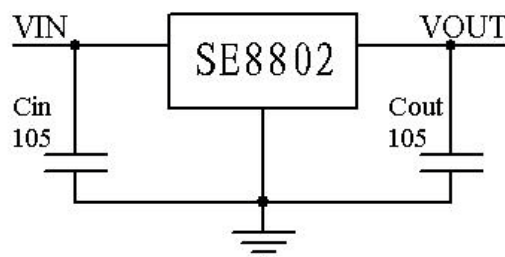
### Pin Configuration



### Applications

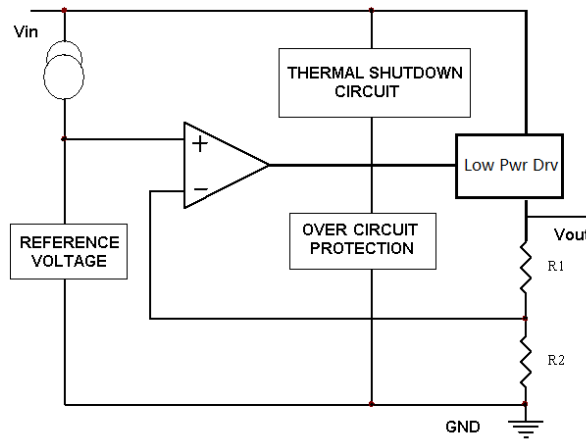
- Electricity meter
- Networking Equipments where low noise and low power consumption is required.

### Application Circuit





**Functional Block Diagram**



**Ordering Information**

Part Number	Marking Information	Package	Remarks
SE8802S	SE8802 YYWW-LF	SOT-223	YYWW means Production batch LF means LeadFree
SE8802K	SE8802 YYWW-LF	SOT-89	

**Absolute Maximum Rating**

Parameter	Symbol	Maximum	Units
Power dissipation @ Ta=25°C			
SOT-223	P <sub>D</sub>	0.85	W
SOT-89		0.45	
Input Voltage	V <sub>IN</sub>	-0.3~30	V
Operating Junction Temperature Range	T <sub>J</sub>	-40 to +125	°C
Package Thermal Resistance <sup>(Note1)</sup>			
SOT-223	θ <sub>JA</sub>	85	°C/W
SOT-89		95	
Lead Temperature (Soldering) 10 seconds	T <sub>LEAD</sub>	260±5	°C
Storage Temperature	T <sub>STG</sub>	-65 to +150	°C
ESD (HBM) Susceptibility	V <sub>ESD</sub>	2.0	KV

Note: 1) Thermal resistance test board Size: 5mm\*5mm\*0.7mm;



**Recommended Operating Conditions**

Parameter	Symbol	Value	Units
Supply Input Voltage	$V_{IN}$	13 to +28	V
Junction Temperature	$T_J$	-40 to +85	°C

**Electrical Characteristics**

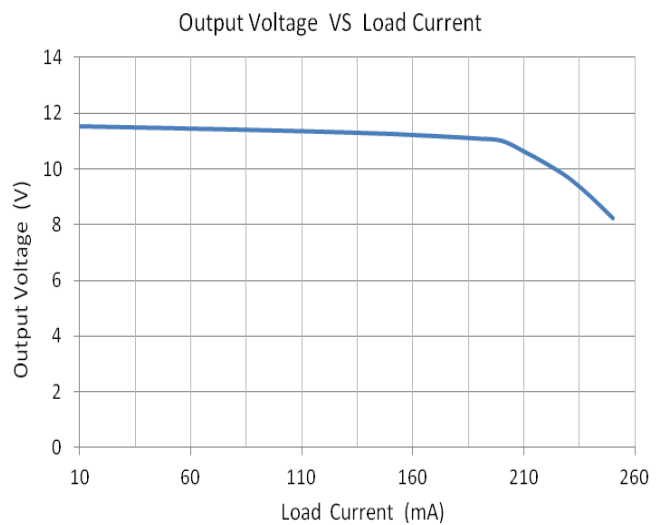
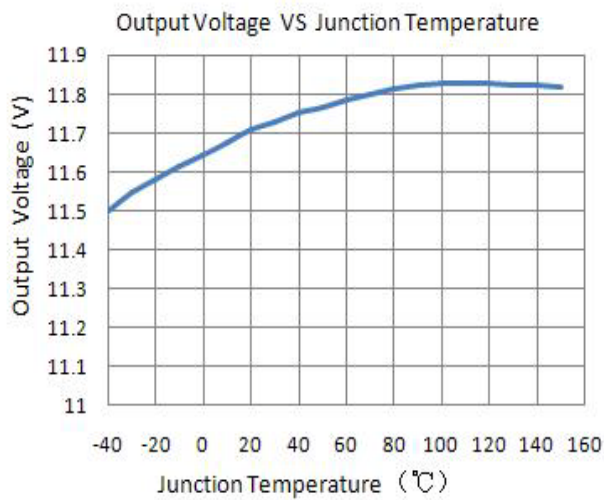
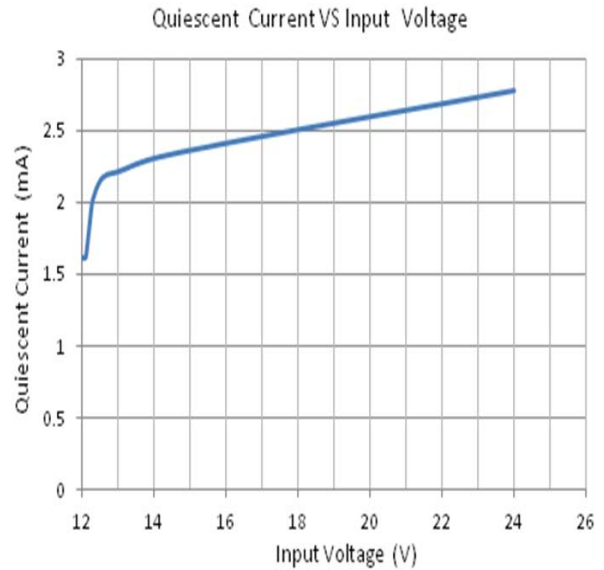
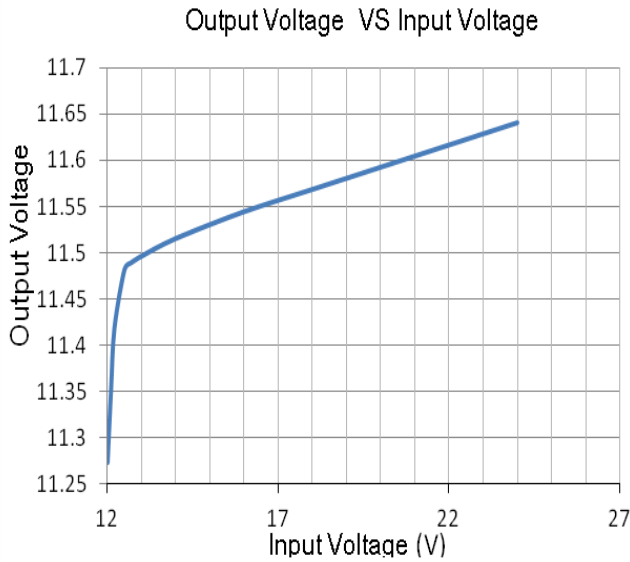
$V_{IN} = 13V$ ;  $I_{OUT} = 10mA$ ;  $C_{IN} = 1\mu F$ ;  $C_{OUT} = 1\mu F$ ;  $T_J = 25^\circ C$ ; unless otherwise specified

Symbol	Parameter	Conditions	SE8802			Unit
			Min	Typ	Max	
$V_O$	Output Voltage	$I_O = 10mA$	-2%	11.6	+2%	V
$\Delta V_O$	Line Regulation	$13V \leq V_{IN} \leq 26V$	--	0.11	--	%/V
$\Delta V_O$	Load Regulation	$10mA \leq I_O \leq 150mA$	--	320	--	mV
$I_Q$	Quiescent Current	$I_{OUT} = 10mA$	--	2.21	--	mA
		$I_{OUT} = 100mA$	--	1.7	--	
$\Delta I_Q$	Quiescent Current Change	$13V \leq V_{IN} \leq 24V$	--	0.56	--	mA
$V_{DROP}$	Dropout Voltage	$\Delta V_O = -2\%$	-	0.82	--	V
$\Delta V_{IN} / \Delta V_{OUT}$	Ripple Rejection	$F = 120Hz$ , $V_{IN} = 15V$	--	-62	--	dB
$I_{LIM}$	Output Current limited		150	200	--	mA
$\Delta V_O / \Delta T$	Output Voltage TempCo	$I_O = 10mA$	--	0.8	--	mV/°C
OTP	Over Temperature Protection	$I_{OUT} = 10mA$	--	165	--	°C



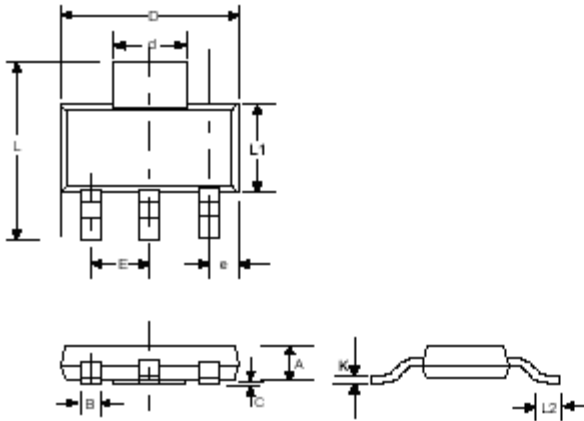
### Typical Performance Characteristic

$V_{IN} = 13V$ ,  $I_{OUT} = 10mA$ ,  $C_{IN} = 1\mu F$ ,  $C_{out}=1\mu F$ ,  $T_J = 25^\circ C$ , unless specified otherwise.



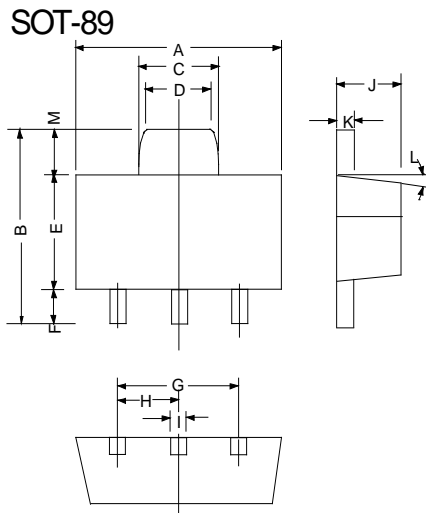


**Outline Drawing for SOT-223**



DIMENSIONS				
DIM <sup>N</sup>	INCHES		MM	
	MIN	MAX	MIN	MAX
A	—	0.071	—	1.80
B	0.025	0.033	0.640	0.840
C	0.012	—	0.31	—
D	0.248	0.264	6.30	6.71
d	0.115	0.124	2.95	3.15
E	—	0.090	—	2.29
e	0.033	0.041	0.840	1.04
L	0.264	0.287	6.71	7.29
L1	0.130	0.148	3.30	3.71
L2	0.012	—	0.310	—
K	0.010	0.014	0.250	0.360

**Outline Drawing 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	0.118REF		3.00REF	
H	0.059REF		1.50REF	
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	0.028REF		0.70REF	



**联系方式:**

北京思旺电子有限公司-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

Seaward Electronics Corporation – 台湾办事处

2F, #181, Sec. 3, Mincuan East Rd,

Taipei, Taiwan R.O.C

电话: 886-2-2712-0307

传真: 886-2-2712-0191

Seaward Electronics Incorporated – 北美办事处

1512 Centre Pointe Dr.

Milpitas, CA95035, USA

电话: 1-408-821-6600