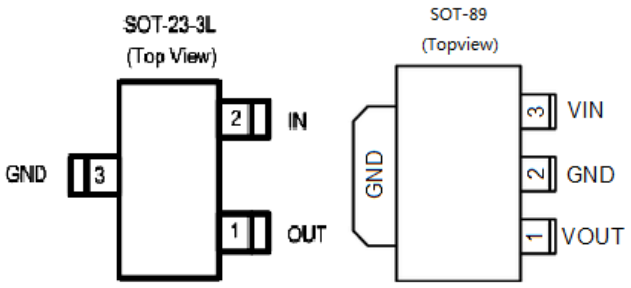
General Description

The SE8801 is a very low dropout three-terminal regulator and specifically designed for today's electricity meter applications. There are two distinct requirements for the power supplies for the electricity meters. The first requirement is low power consumption. The second is low noise. Most of the power supplies in the market could only satisfy one requirement, but not both of them at the same time. The SE8801 is now the first IC in the market that is able to satisfy both requirements. The SE8801 uses a very unique design to achieve very low power consumption while providing a very low noise power output for electricity meter applications.

Features

- Output voltage of 3.3/4.3/5.0V/5.7 (Typ.)
- Low quiescent Current
- Over-current/Over-temperature Protection.
- Minimum external components.
- Output voltage tolerances of 4.3V ±1%
- Output voltage tolerances of 3.3V/5.0V/5.7V ±2%
- ESD rating is 2KV (Per MIL-STD-883D)
- Input Voltage up to 30V
- Operating Junction Temperature from −40°C to +125°C

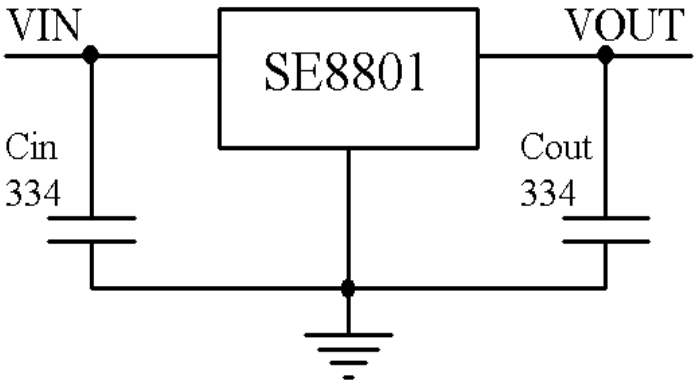
Pin Configuration



Applications

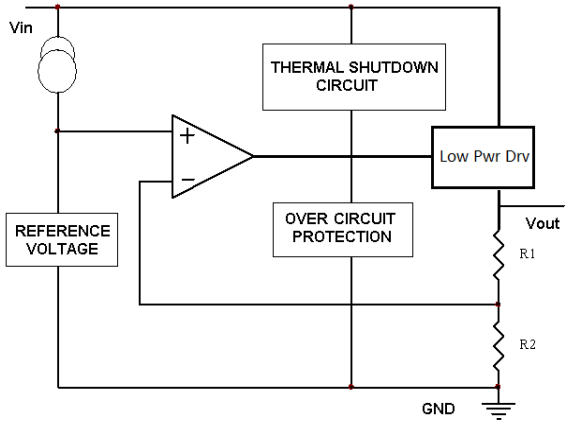
- Electricity meter.
- Networking Equipments where low noise and low power consumption is required.

Typical Application

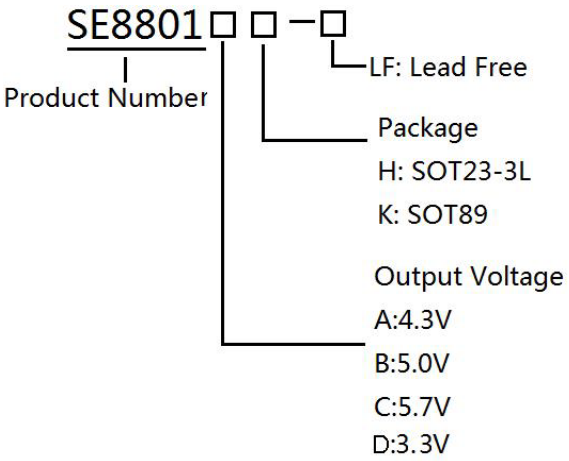


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Functional Block Diagram



Ordering Information



Marking Information

Part Number	Marking Information	Package	Remarks	
SE8801BH	801x●	SOT-23-3L	The last character：the batch number.	
SE8801AK	SE8801A YYWW-LF	SOT-89	A：4.3V	LF ：Lead Free YYWW: Production batch
SE8801BK	SE8801B YYWW-LF		B：5.0V	
SE8801CK	SE8801C YYWW-LF		C：5.7V	
SE8801DK	SE8801D YYWW-LF		D：3.3V	

Absolute Maximum Rating

Parameter	Symbol	Maximum	Units
Power dissipation@25℃: SE8801H(SOT-23-3L) SE8801K(SOT-89)	P_D	 0.25 0.45	W
Input Voltage	V_{IN}	-0.3~30	V
Operating Junction Temperature Range	T_J	-40 to +125	°C
Thermal Resistance SE8801H(SOT-23-3L) SE8801K(SOT-89)	θ_{JA}	 150 95	°C/W
Lead Temperature (Soldering) 10 seconds	T_{LEAD}	260±5	°C
Storage Temperature	T_{STG}	-65 to +150	°C
ESD (HBM) Susceptibility	V_{ESD}	2	KV

Note: 1) Thermal resistence test board Size: 5mm*5mm*1.6mm,Ta=25℃;

Recommended Operating Conditions

Parameter	Symbol	Value	Units
Supply Input Voltage	V_{IN}	7.0 to +25	V
Junction Temperature	T_J	-40 to +85	°C

Electrical Characteristics

V_{IN} = 8V; I_{OUT} = 10mA; C_{IN} =C_{OUT}= 1μF; T_J = 25°C; unless otherwise specified

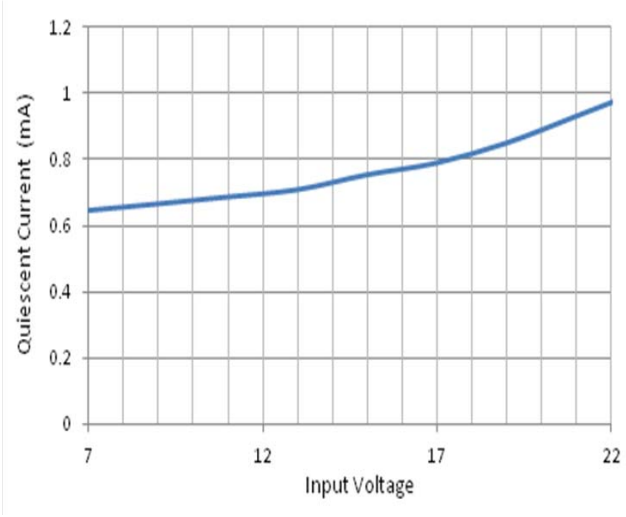
Symbol	Parameter	Conditions	SE8801			Unit
			Min	Typ	Max	
V_O	Output Voltage	I_{OUT} = 10mA	- 1%	4.3	+ 1%	V
			- 2%	3.3	+ 2%	V
			- 2%	5.0	+ 2%	V
			- 2%	5.7	+ 2%	V
ΔVO	Line Regulation	7V ≤ VIN ≤ 20V	--	0.07	--	%/V
ΔV_O	Load Regulation	1mA ≤ I_O ≤ 50mA	--	50	--	mV

IQ	Quiescent Current		--	0.65	--	mA
ΔI_Q	Quiescent Current Change	7V ≤ V_{IN} ≤ 20V	--	0.32	--	mA
		1mA ≤ I_O ≤ 50mA	--	-0.17	--	mA
Vdrop	Dropout Voltage	ΔV_O=-2%	-	0.8	--	V
ΔV_{IN} /ΔV_{OUT}	Ripple Rejection	f =120Hz, C_{IN}=C_{OUT}=0.33uF 8V ≤ V_{IN} ≤ 16V	--	55	--	dB
I_{PK}	Peak Output Current	Vin=8V	50	60	--	mA
		Vin=15V	90	100	--	
$\Delta V_O/\Delta T$	Average Output Voltage Tempco	I_O = 10mA	--	0.10	--	mV/°C
T_{OTP}	Thermal Protection Temperature		--	130	--	°C
V_{IN} (Min)	Minimum Value of Input Voltage Required to Maintain Line Regulation	I_O = 10mA	5.8	6.2	--	V

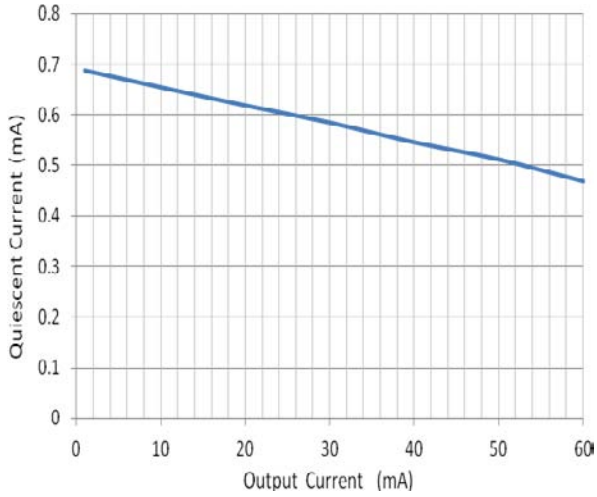
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Typical Performance Characteristic

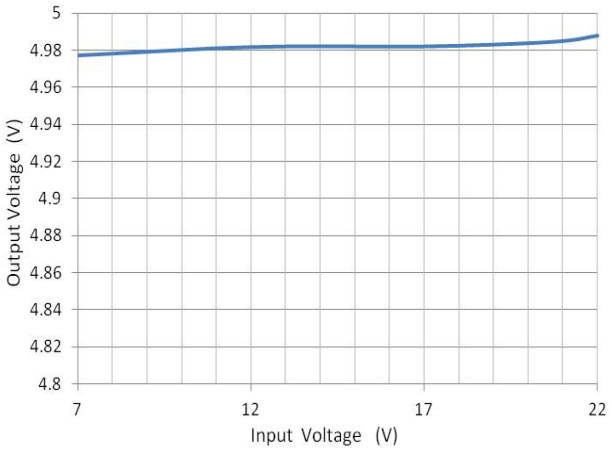
V_{IN} = 8V, I_{OUT} = 10mA, C_{IN} = C_{OUT} = 0.33µF, T_J = 25°C, unless specified otherwise.



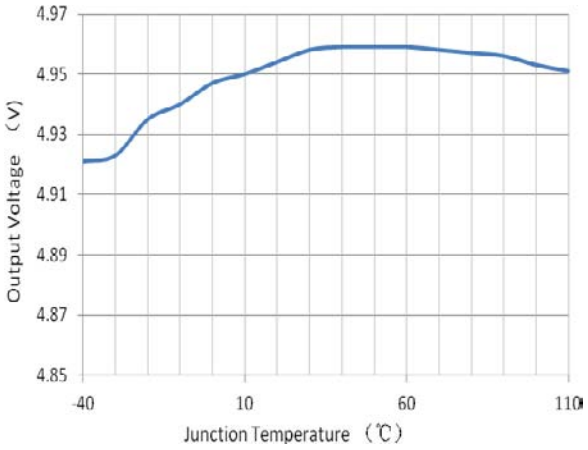
Quiescent Current VS Input Voltage



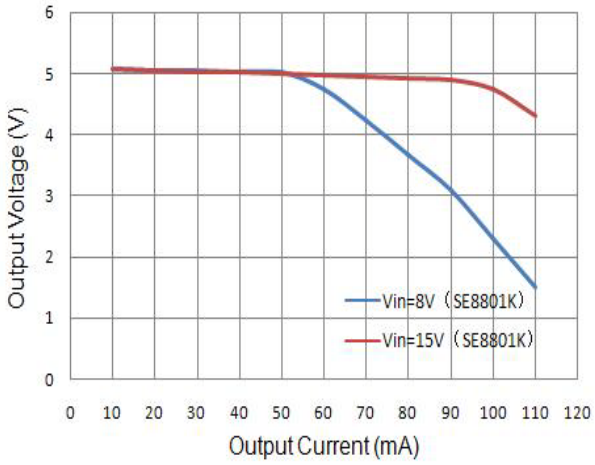
Quiescent Current VS Output Current



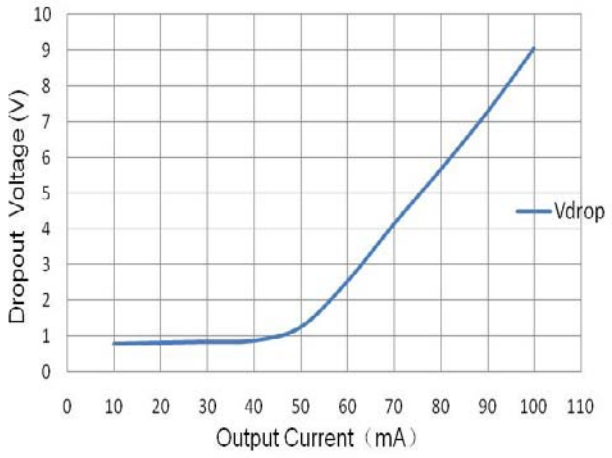
Output Voltage VS Input Voltage



Output Voltage VS Junction Temperature

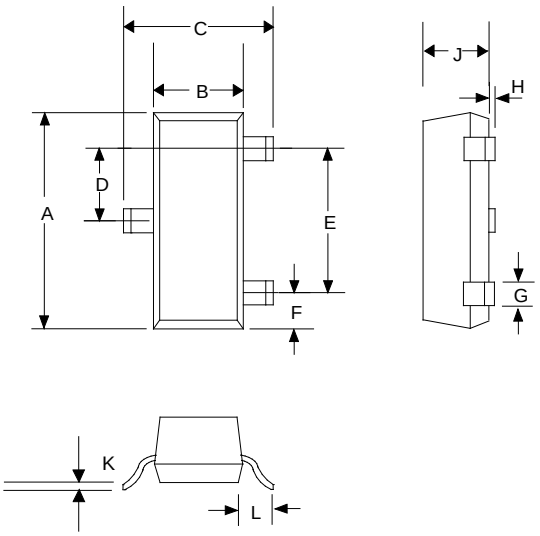


Output Voltage VS Output Current



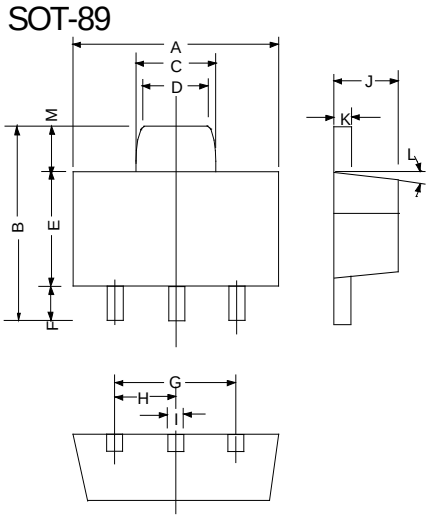
Dropout Voltage VS Output Current

Outline Drawing SOT-23



DIMENSIONS				
DIM[N]	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.110	0.120	2.80	3.04
B	0.047	0.055	1.20	1.40
C	0.083	0.104	2.10	2.64
D	0.035	0.040	0.89	1.03
E	0.070	0.080	1.78	2.05
F	0.018	0.024	0.45	0.60
G	0.015	0.020	0.37	0.51
H	0.0005	0.004	0.013	0.10
J	0.034	0.040	0.887	1.02
K	0.003	0.007	0.085	0.18
L	-	0.027	-	0.69

Outline Drawing SOT-89



DIMENSIONS				
DIM[N]	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	

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