

100V 200mA Ultra Low Current Consumption CMOS

Voltage Regulator

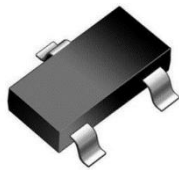
SSP79A5

General Description

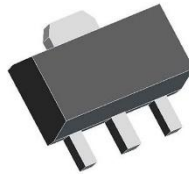
SSP79A5 is ultra-low quiescent current regulator features and low dropout voltage. With 2 μ A quiescent current at no load. SSP79A5 retains all the features that are common to low dropout regulators including a low dropout PMOS pass device, foldback current limiter, and thermal shutdown.

SSP79A5 has 100V maximum operating voltage, excellent load transient response, and -40°C to 85°C operating temperature range, and $\pm 2\%$ output voltage tolerance over the entire output current, input voltage, and temperature range.

SSP79A5 regulators are available in standard SOT23-3L, SOT89-3 and SOT223 packages.



SOT23-3L



SOT89-3



SOT223

Features

- Vin Range Up to 100V
- Output Range: 2.8V~5.0V
- Maximum Output Current: 200mA
- PSRR: 70dB@1KHz
- Dropout Voltage: 0.6V typ.@IOUT=100mA
- Low Quiescent Current: 2 μ A @VIN=(VOUT+1)V
- Output Voltage Tolerances : $\pm 2\%$
- Internal temperature protection
- Built-in Foldback Current Limit

Applications

- E-meters, Water Meters and Gas Meters
- Cellphones, Radiophone, Digital Cameras
- Fire Alarm, Smoke Detector
- Appliances and White Goods

Order Information

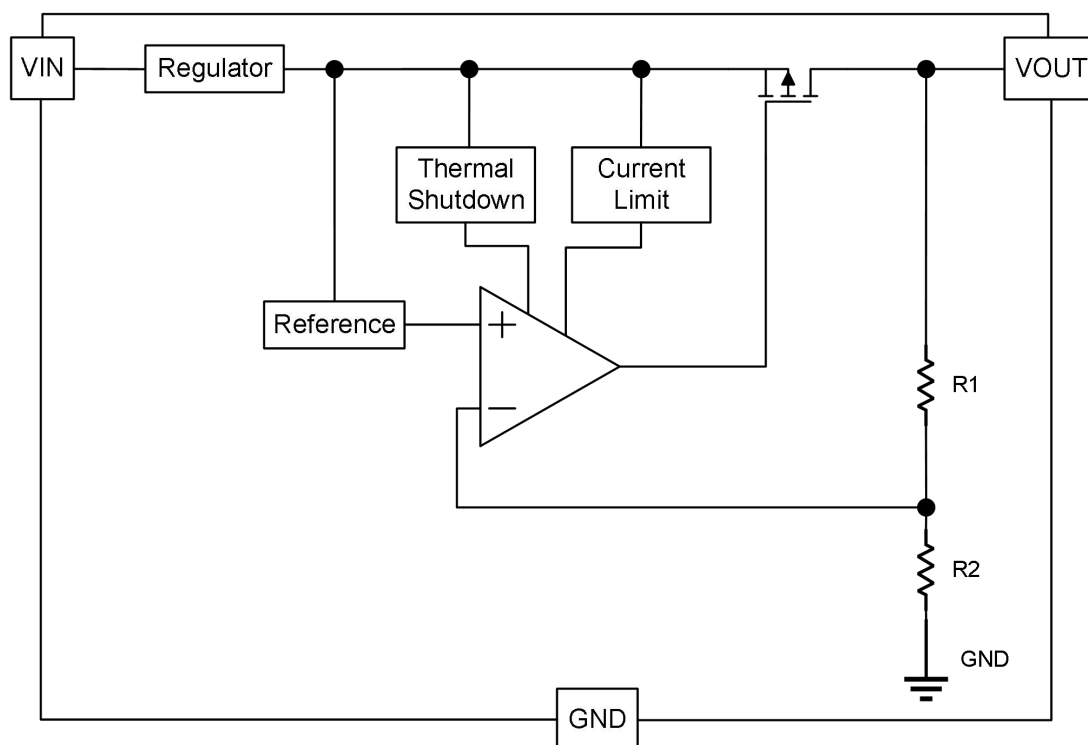
Product Model	Package	Manner of packing	Minimum Packing Quantity
SSP79A5-XXMR	SOT23-3L	Reel	3000
SSP79A5-XXPR	SOT89-3		1000
SSP79A5-XXPBR	SOT89-3		1000
SSP79A5-XXGR	SOT223		2500

Order Information

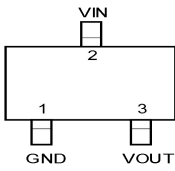
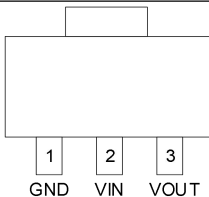
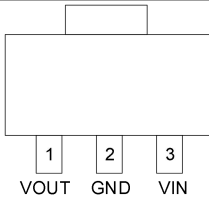
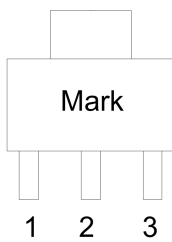
SSP79A5-①②③④

Designator	Symbol	Description
①②	Integer	Output Voltage(2.8~5.0V)
③	M	Package: SOT23-3L
	P	Package: SOT89-3
	PB	Package: SOT89-3
	G	Package: SOT223
④	R	Rohs / Pb Free
	G	Halogen Free

Block Diagram



Pin Assignment

SSP79A5-XXMR		
PIN NO	PIN NAME	 SOT23-3(Top View)
1	GND	
2	VIN	
3	VOUT	
SSP79A5-XXPR		
PIN NO	PIN NAME	 SOT89-3 (Top View)
1	GND	
2	VIN	
3	VOUT	
SSP79A5-XXPBR		
PIN NO	PIN NAME	 SOT89-3 (Top View)
1	VOUT	
2	GND	
3	VIN	
SSP79A5-XXGR		
PIN NO	PIN NAME	 SOT223 (Top View)
1	GND	
2	VIN	
3	VOUT	

Application Circuits

Typical Application Circuits

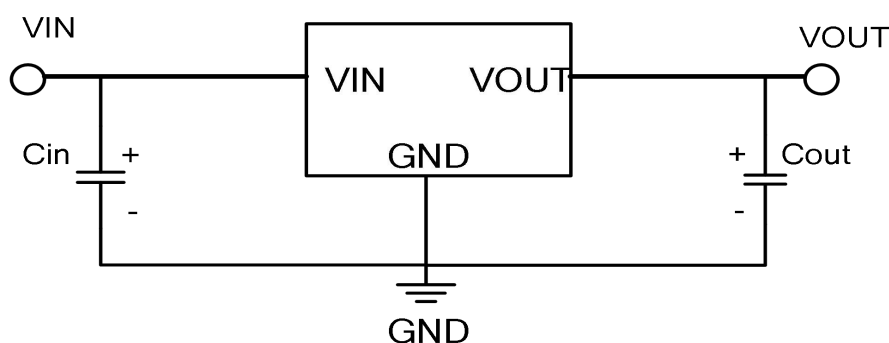


Figure1

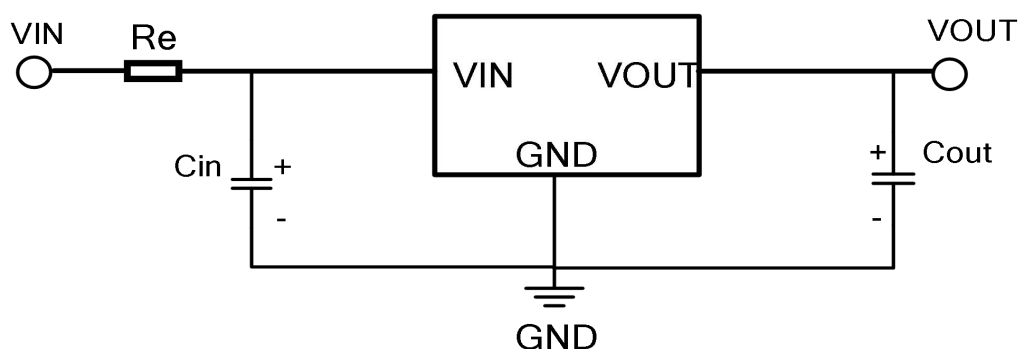


Figure2

Note1: The parameters of C_{in} and C_{out} must be greater than $2.2\mu F$.

Note2: If $V_{IN} > 50V$, you'd better add a resistor to the input. The resistance value of R_1 should be set to $0.25\Omega \sim 2\Omega$.

Absolute Maximum Ratings

Parameter Specification	Symbol	Min	Max	Unit
Input Voltage	V_{IN}	-0.3	120	V
Output Voltage	V_{OUT}	-0.3	6	
ESD Rating			7.5	kV
Storage Temperature	T_{stg}	-55	150	°C
Lead Temperature(Soldering, 10 sec.)			260	
Operating Temperature		-40	85	

Note: These are stress ratings only. 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.

Electrical Characteristics

The following specifications apply for $V_{IN}=12V$, $C_{IN}=C_{OUT}=2.2\mu F$, $T_J=25^{\circ}C$, unless specified otherwise.

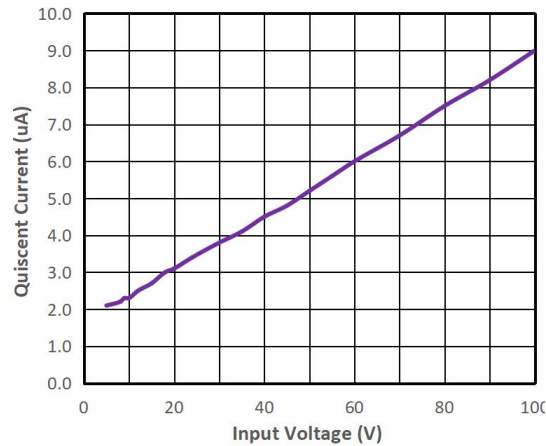
SYMBOL	ITEMS	CONDITIONS	MIN	TYP	MAX	UNIT
V_{IN}	Input Voltage		2.9		100	V
V_{OUT}	Output Range		2.8		5.0	V
	Output Voltage Accuracy		-2	--	2	%
I_Q	Quiescent Current	$V_{IN} = V_{OUT} + 1V$	--	2	--	μA
V_{DROP}	Dropout Voltage	$I_{OUT}=100mA$	--	0.6	--	V
ΔV_{LINE}	Line Regulation	$V_{IN}=V_{OUT}+1V$ to 80V, $I_{OUT}=1mA$	--	20	--	mV
ΔV_{LOAD}	Load Regulation	$V_{IN}=10V$, $I_{OUT} = 1mA$ to 100mA	--	20	--	mV
PSRR	Power Supply Rejection Rate	Freq.=1kHz, $V_{IN}=9V$, Ripple=0.2Vp-p, $I_{OUT}=10mA$	--	70	--	dB
I_{SHORT}	I_{OUT} @ V_{OUT} Short to Ground	$V_{IN}=6V$, $V_{OUT}=0V$	--	10	20	mA
T_{SD}	Thermal Shutdown		--	150	--	$^{\circ}C$
T_{HY}	Thermal Shutdown Hysteresis		--	20	--	$^{\circ}C$

Note1: The parameters of C_{in} and C_{out} must be greater than $2.2\mu F$.

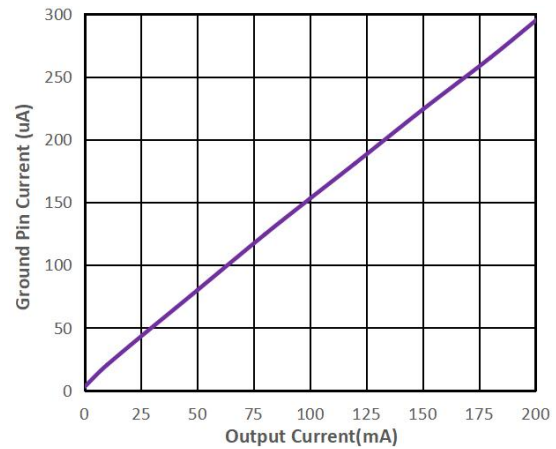
Typical Performance Characteristics

$C_{IN}=10\mu F$, $C_{OUT}=10\mu F$, $T_J=25^\circ C$, unless specified otherwise

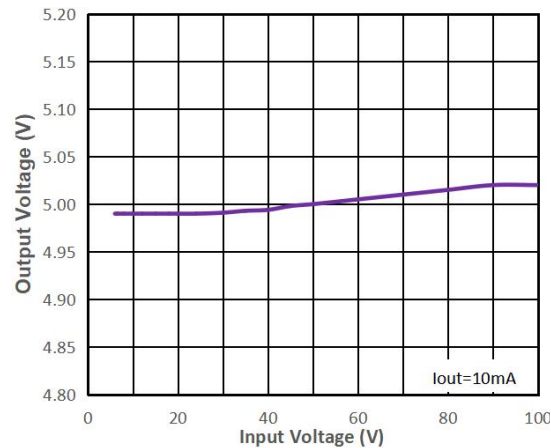
(1) Quiescent Current vs Input Voltage



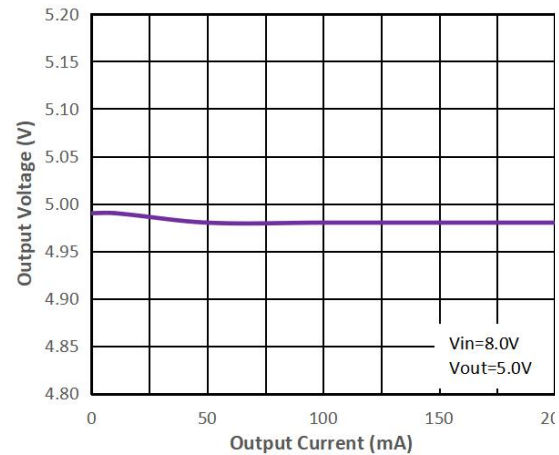
(2) Ground Pin Current vs Output Current



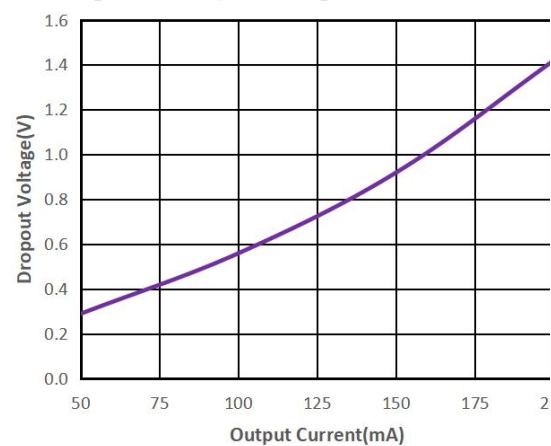
(3) Output Voltage vs Input Voltage



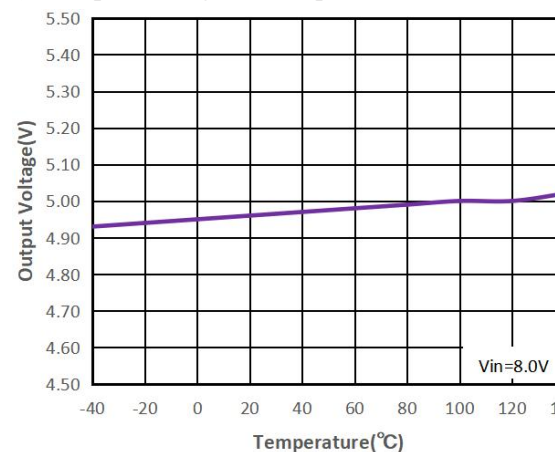
(4) Output Voltage vs Output Current



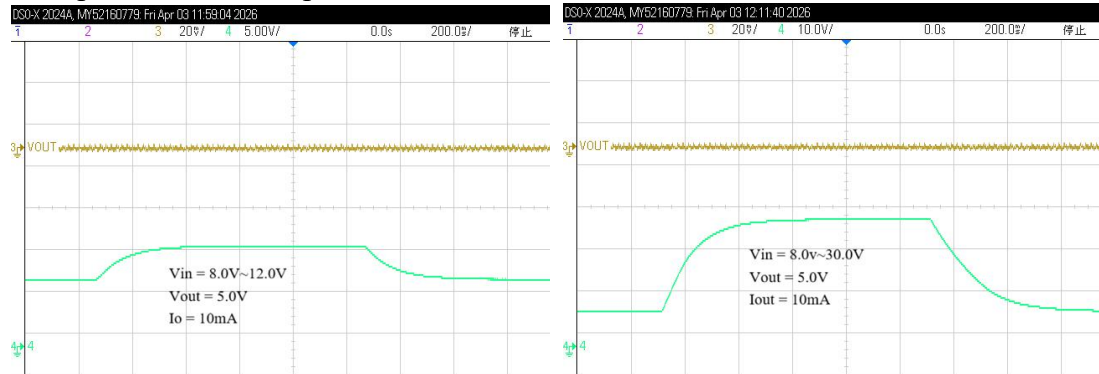
(5) Dropout Voltage vs Output Current



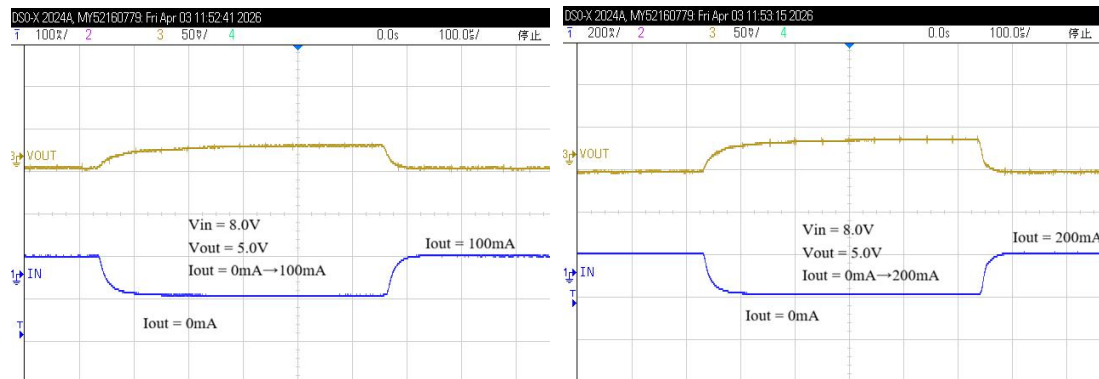
(6) Output Voltage vs Temperature



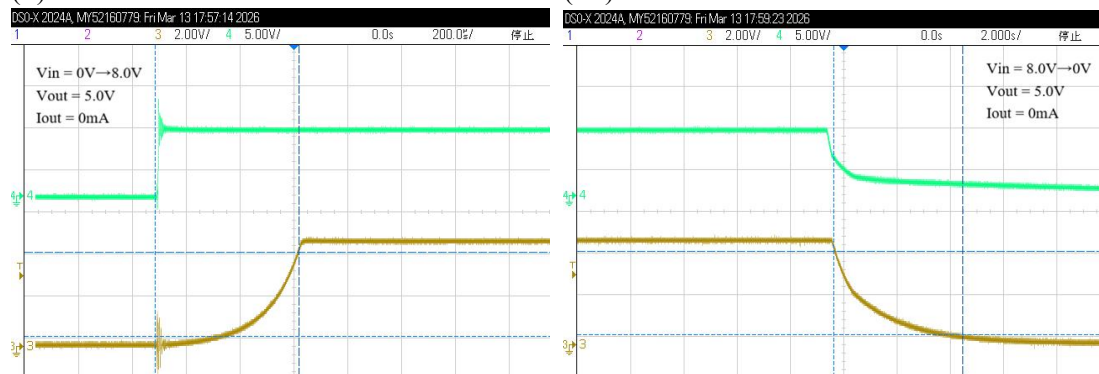
(7) Input Transient Response



(8) Load Transient Response



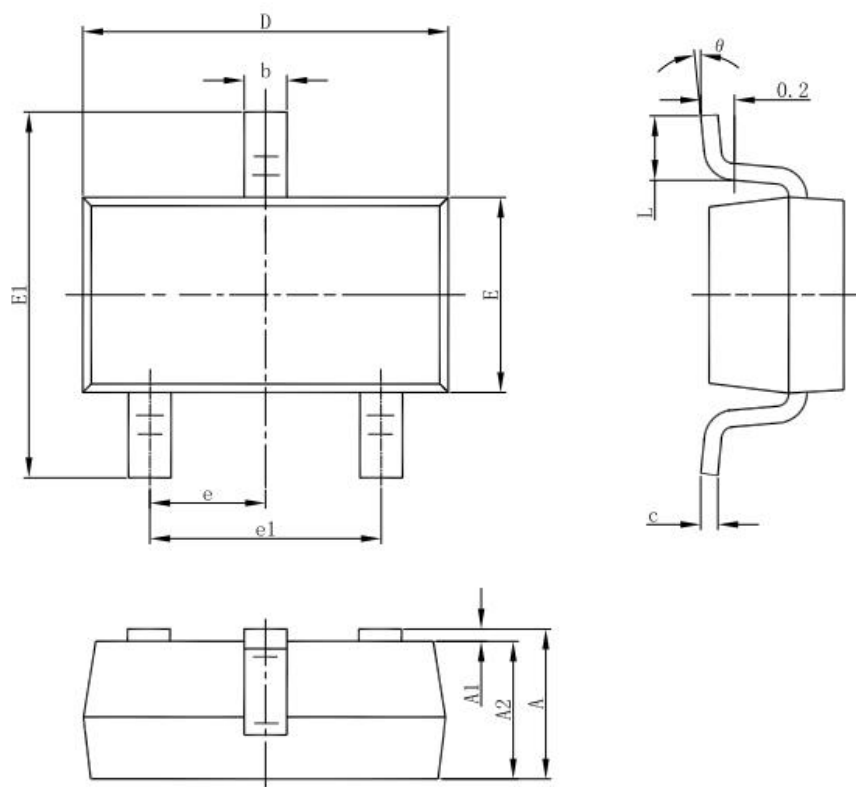
(9) Power ON



(10) Power OFF

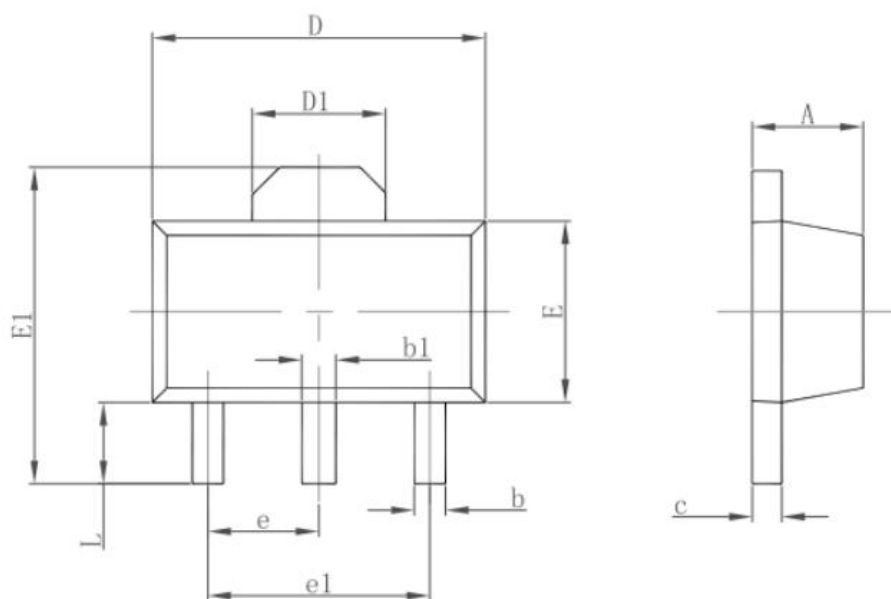
Package Information

3-pin SOT23-3 Outline Dimensions



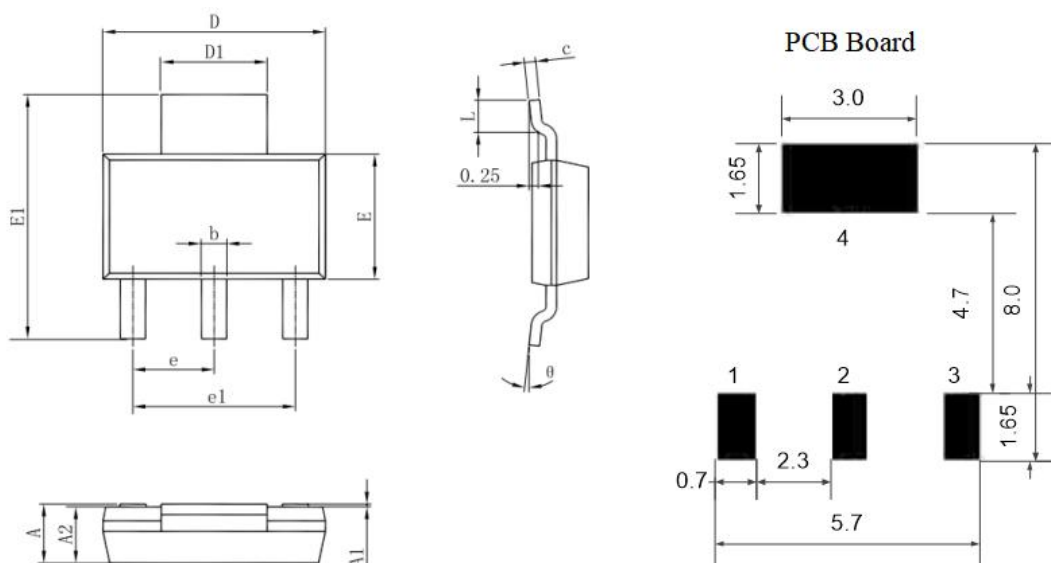
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)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

SOT89-3L Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

SOT223 Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.520	1.800	0.060	0.071
A1	0.000	0.100	0.000	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.820	0.026	0.032
c	0.250	0.350	0.010	0.014
D	6.200	6.400	0.244	0.252
D1	2.900	3.100	0.114	0.122
E	3.300	3.700	0.130	0.146
E1	6.830	7.070	0.269	0.278
e	2.300(BSC)		0.091(BSC)	
e1	4.500	4.700	0.177	0.185
L	0.900	1.150	0.035	0.045
θ	0°	10°	0°	10°

Special Version

The company reserves the right of final interpretation of this specification.

Version Change Description

Versions: V1.0	Writer: XinCHun Li	Time: 2026.05.21
----------------	--------------------	------------------

Modify the record:

1. Editio princeps

Statement

The information in the usage specification is correct at the time of publication, Shanghai Siproin Microelectronics Co.,Ltd. has the right to change and interpret the specification, and reserves the right to modify the product without prior notice. Users can obtain the latest version information from our official website or other effective channels before confirmation, and verify whether the relevant information is complete and up to date.

With any semiconductor product, there is a certain possibility of failure or failure under certain conditions. The buyer is responsible for complying with safety standards and taking safety measures when using the product for system design and complete machine manufacturing. The product is not authorized to be used as a critical component in life-saving or life-sustaining products or systems, in order to avoid potential failure risks that may cause personal injury or property loss.