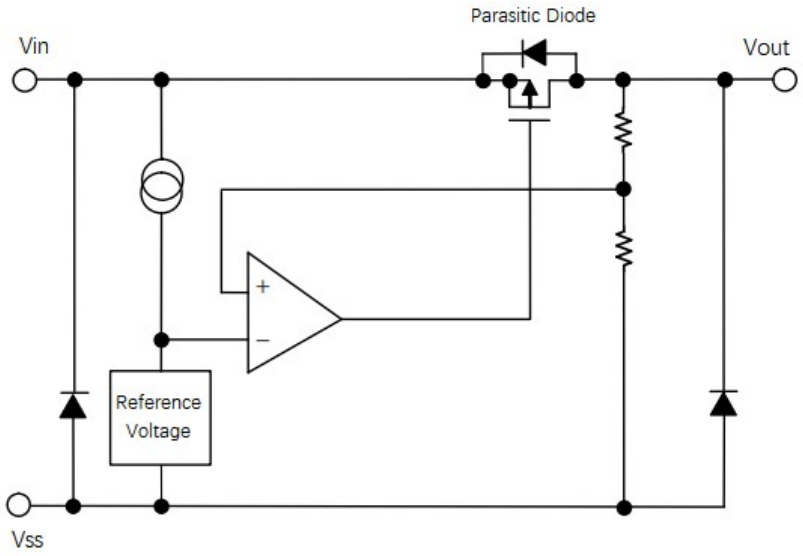
General Description

The SS812CXX Series is a three-terminal positive voltage regulator made using a CMOS process. The output voltage is fixed internally. The SS812CXX Series has higher accuracy of output voltage (±2.0%) and smaller input/output voltage difference (V_{dif}=0.12 V when I_{out} is 10 mA for SS812C50) than the SS812CXX Series, so battery-powered portable equipment can have a higher capacity and a longer service life.

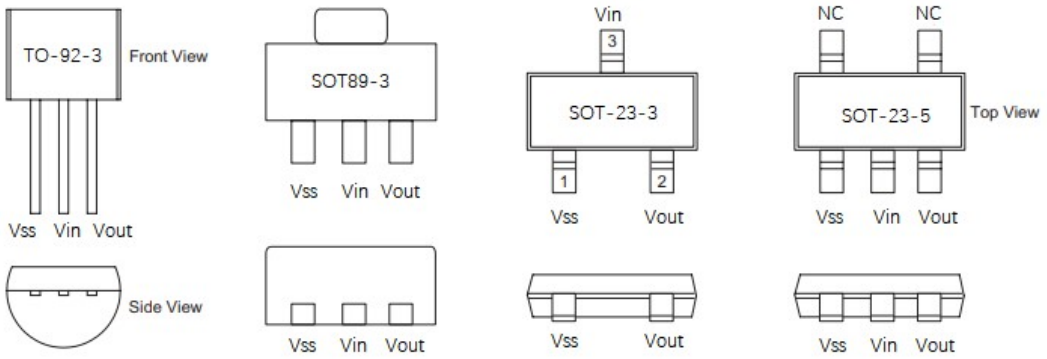
Features

- Low current consumption: 2.5uA type.
- Small input/output voltage difference(Ex: SS812C50: 0.12 V type. Iout=10 mA)
- High accuracy of output voltage: ±2.0%
- Wide operating voltage range: 18 V max.
- TO-92-3 or SOT-89-3 or SOT-23-3 or SOT-23-5 plastic package.

Block Diagram



Pin Assignment



Selection Table

Model No	Package	Output Voltage	Marking
SS812C30T	TO-92-3	3.0V	SS812C30T
SS812C30Q	SOT-89-3		H30XXX
SS812C30S	SOT-23-3		H30XXX
SS812C30M	SOT-23-5		H30XXX
SS812C33T	TO-92-3	3.3V	SS812C33T
SS812C33Q	SOT-89-3		H33XXX
SS812C33S	SOT-23-3		H33XXX
SS812C33M	SOT-23-5		H33XXX
SS812C36T	TO-92-3	3.6V	SS812C36T
SS812C36Q	SOT-89-3		H36XXX
SS812C36S	SOT-23-3		H36XXX
SS812C36M	SOT-23-5		H36XXX
SS812C40T	TO-92-3	4.0V	SS812C40T
SS812C40Q	SOT-89-3		H40XXX
SS812C40S	SOT-23-3		H40XXX
SS812C40M	SOT-23-5		H40XXX
SS812C44T	TO-92-3	4.4V	SS812C44T
SS812C44Q	SOT-89-3		H44XXX
SS812C44S	SOT-23-3		H44XXX
SS812C44M	SOT-23-5		H44XXX
SS812C50T	TO-92-3	5.0V	SS812C50T
SS812C50Q	SOT-89-3		H50XXX
SS812C50S	SOT-23-3		H50XXX
SS812C50M	SOT-23-5		H50XXX
SS812C60T	TO-92-3	6.0V	SS812C60T
SS812C60Q	SOT-89-3		H60XXX
SS812C60S	SOT-23-3		H60XXX
SS812C60M	SOT-23-5		H60XXX
SS812C90T	TO-92-3	9.0V	SS812C90T
SS812C90Q	SOT-89-3		H90XXX
SS812C90S	SOT-23-3		H90XXX
SS812C90M	SOT-23-5		H90XXX

*The Output voltage and marking can be customized

Absolute Maximum Ratings

Supply Voltage	-0.3V to 18V		Storage Temperature	-50°C to 125°C
Power Consumption (SOT89)	500mW		Operating Temperature	-40°C to 85°C
Power Consumption (TO-92-3)	250mW		Output Current	150mA
Power Consumption (SOT23)	250mW			

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

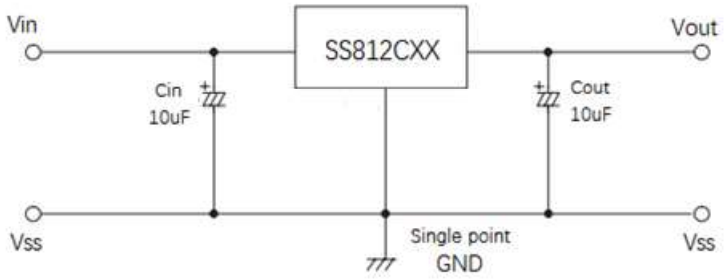
SS812C33, +3.3V Output Type Ta=25°C

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
Vout	Output Voltage Tolerance	5.3V	I_{OUT}=10mA	3.234	3.300	3.366	V
Iout	Output Current	5.3V	—	—	100	—	mA
△Vout	Load Regulation	5.3V	1mA≤I_{OUT}≤50mA	—	60	150	mV
Vdif	Voltage Drop	—	I_{OUT} =10mA	—	120	—	mV
Iss	Current Consumption	5.3V	No load	—	2.0	7	μA
$\frac{Vout}{Vin \times Vout}$	Line Regulation	—	4.3V≤V_{IN}≤9V I_{OUT}=1mA	—	0.2	—	%/V
Vin	Input Voltage	—	I_{OUT}=1mA	—	—	18	V
$\frac{Vout}{Ta}$	Temperature Coefficient	5.3V	I_{OUT}=10mA 0°C<Ta<85°C	—	±0.5	—	mV/°C

SS812C50, +5.0V Output Type Ta=25°C

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
Vout	Output Voltage Tolerance	7V	I_{OUT}=10mA	4.900	5.000	5.100	V
Iout	Output Current	7V	—	—	100	—	mA
△Vout	Load Regulation	7V	1mA≤I_{OUT}≤50mA	—	60	150	mV
Vdif	Voltage Drop	—	I_{OUT} =10mA	—	120	—	mV
Iss	Current Consumption	7V	No load	—	2.5	7	μA
$\frac{Vout}{Vin \times Vout}$	Line Regulation	—	6V≤V_{IN}≤9V I_{OUT}=1mA	—	0.2	—	%/V
Vin	Input Voltage	—	I_{OUT}=1mA	—	—	18	V
$\frac{Vout}{Ta}$	Temperature Coefficient	7V	I_{OUT}=10mA 0°C<Ta<85°C	—	±0.75	—	mV/°C

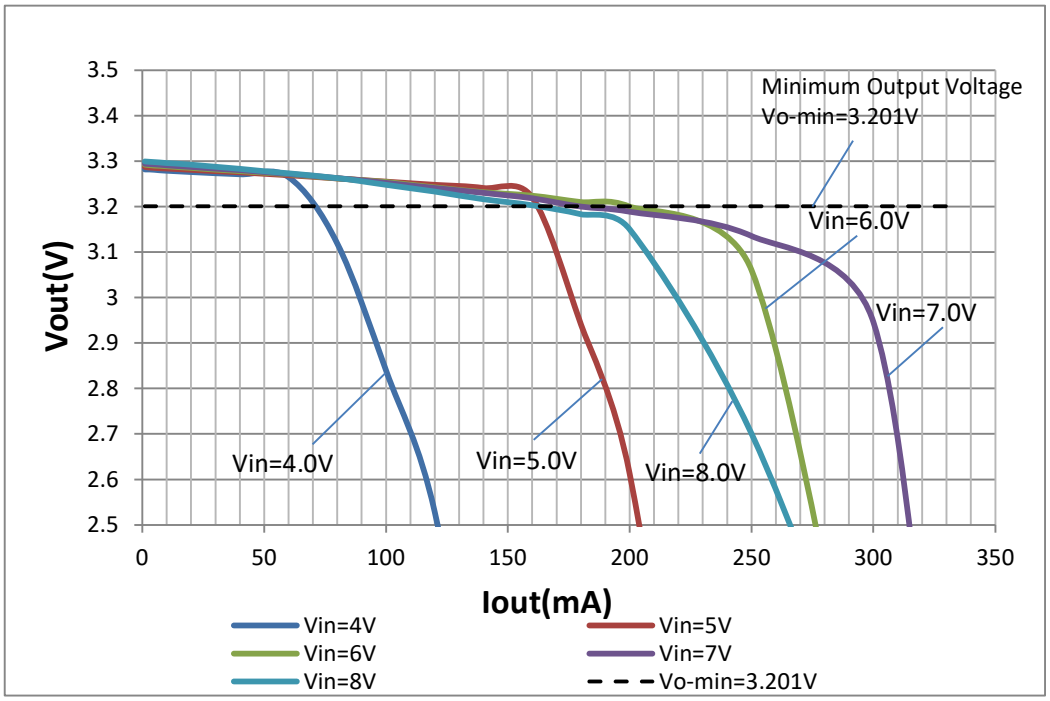
Application Circuits



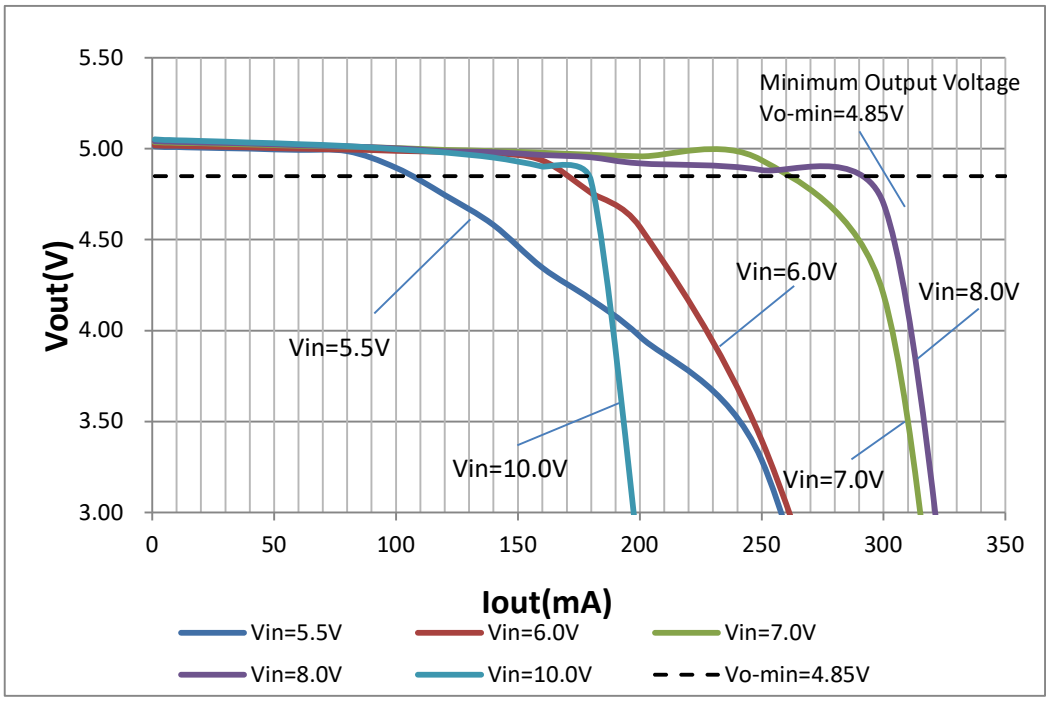
Note:
1, Capacitance should be located as close as possible to the Vin and Vout pins
2, Pay attention to the input / output voltage and load current conditions to avoid the power consumption inside the IC exceeding the maximum power dissipation allowed by the package.

Reference Data

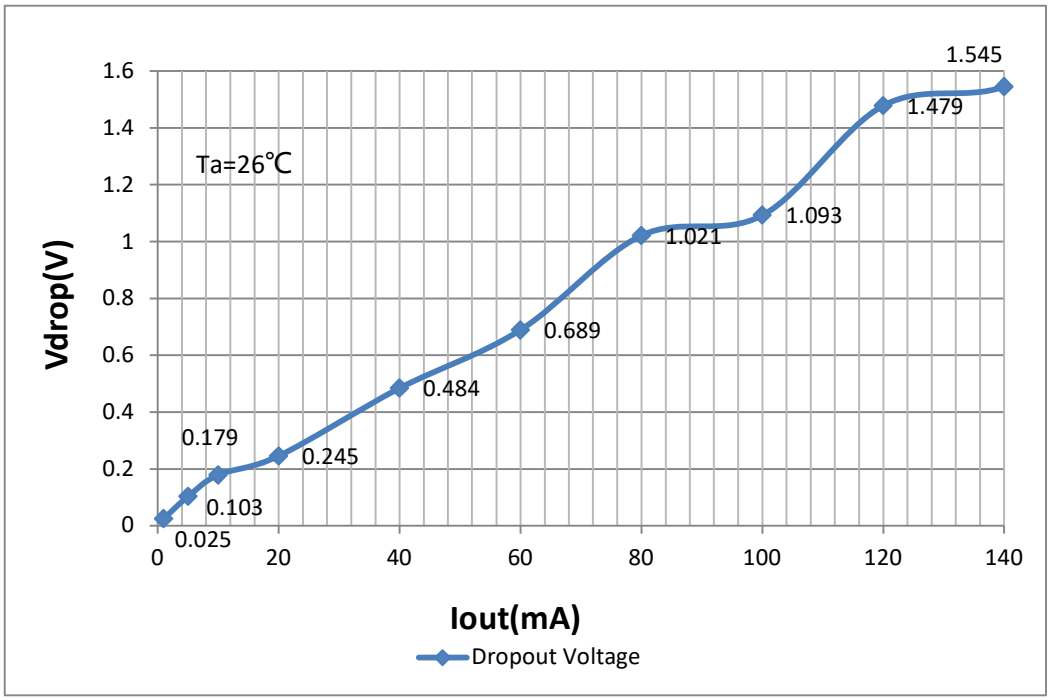
Output Voltage VS Output Current
SS812C33



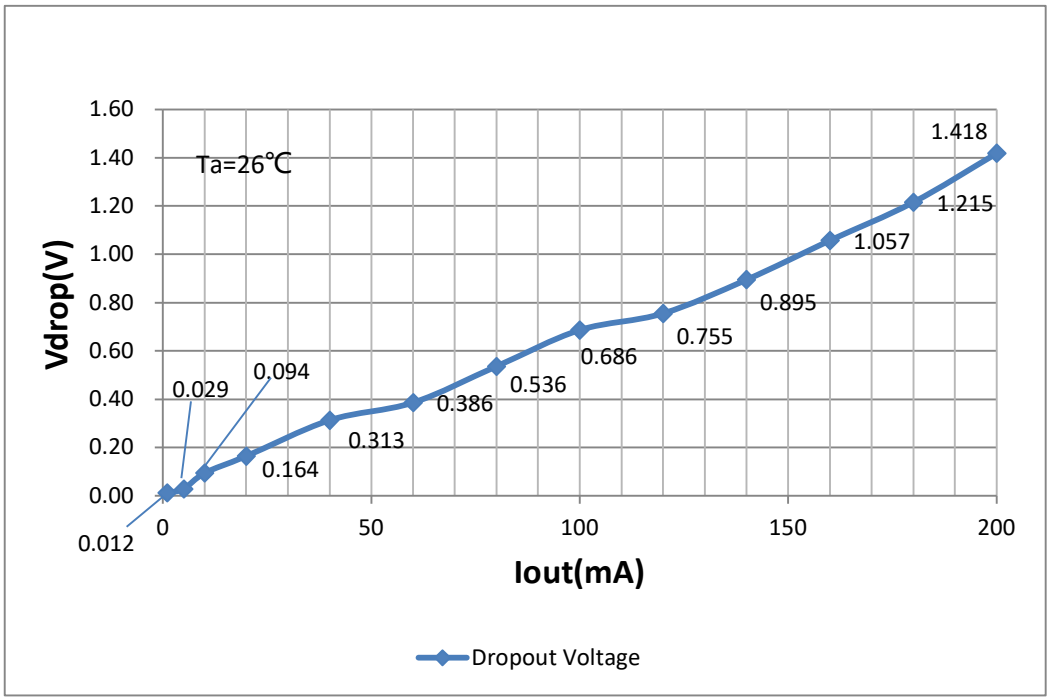
SS812C50



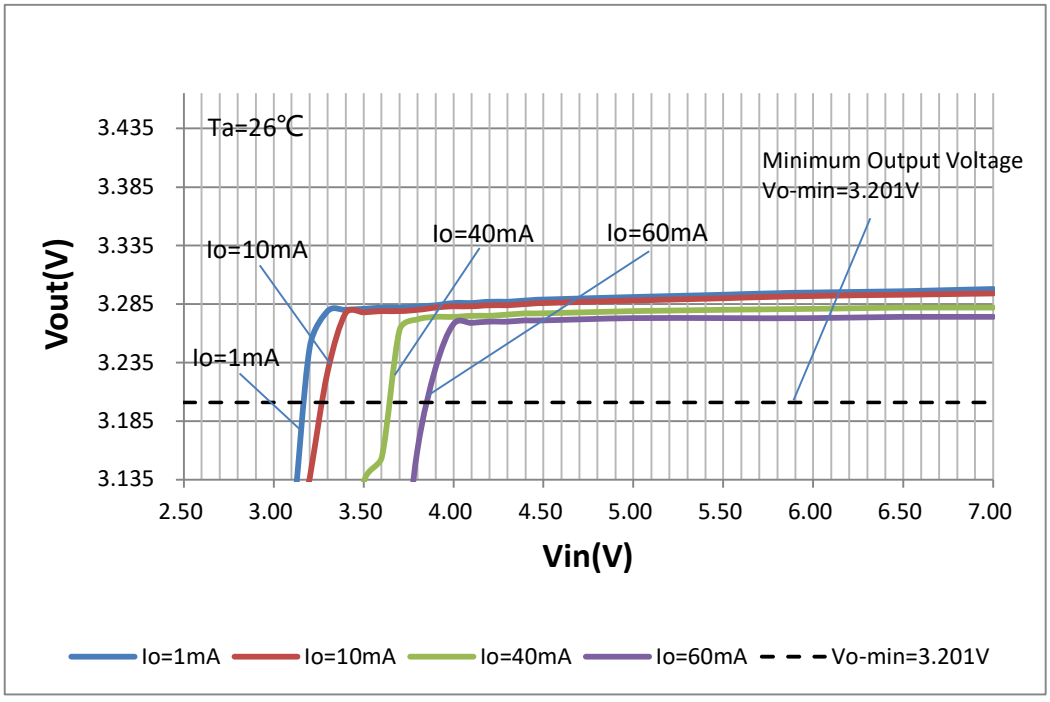
Dropout Voltage VS Output Current
SS812C33



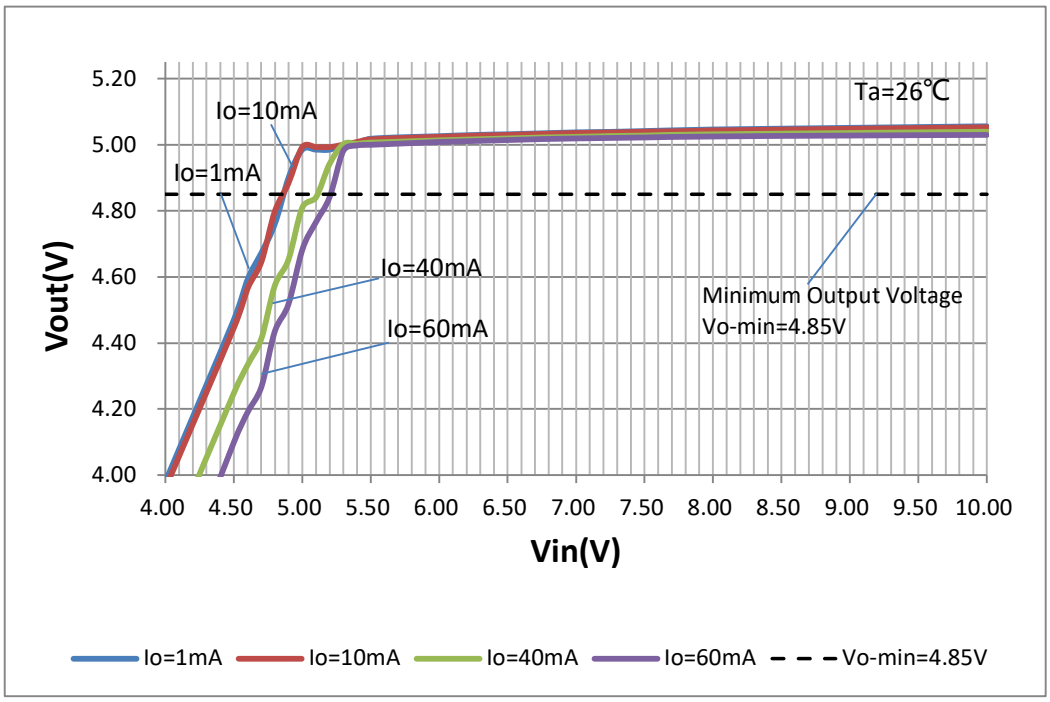
SS812C50



Output Voltage VS Input Voltage
SS812C33

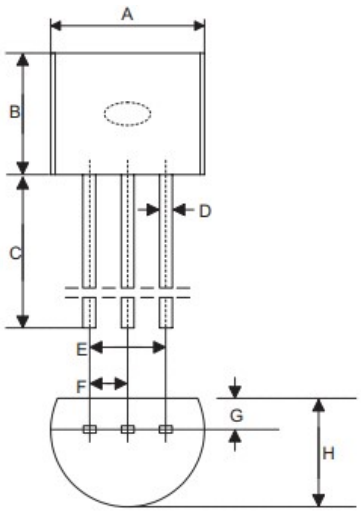


SS812C50


Ta=26℃
Io=10mA
Io=1mA
Io=40mA
Io=60mA
Minimum Output Voltage
Vo-min=4.85V
Vout(V)
Vin(V)
5.20
5.00
4.80
4.60
4.40
4.20
4.00
4.00 4.50 5.00 5.50 6.00 6.50 7.00 7.50 8.00 8.50 9.00 9.50 10.00
Io=1mA
Io=10mA
Io=40mA
Io=60mA
Vo-min=4.85V

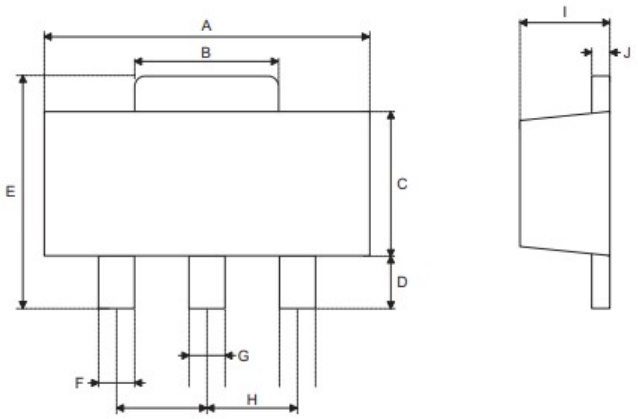
Package Information

① TO-92-3



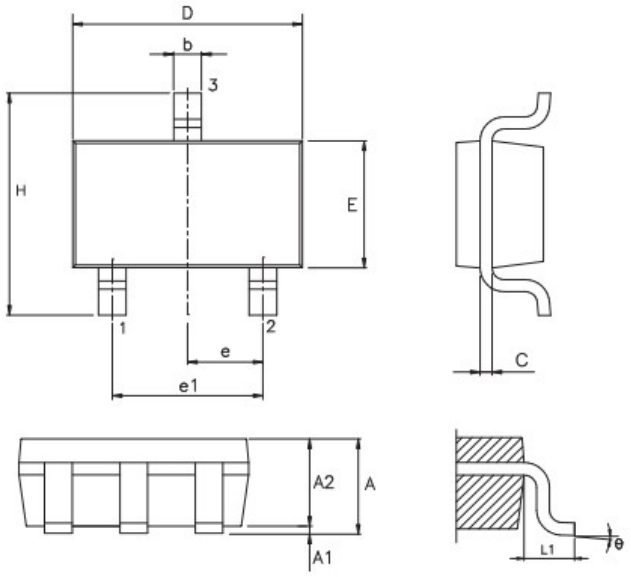
Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	4.39	4.57	5.21
B	4.32	–	5.33
C	12.7	14.73	–
D	–	0.38 BSC	–
E	–	2.54 BSC	–
F	–	1.27 BSC	–
G	–	0.89 BSC	–
H	3.18	3.61	4.19

② SOT-89-3



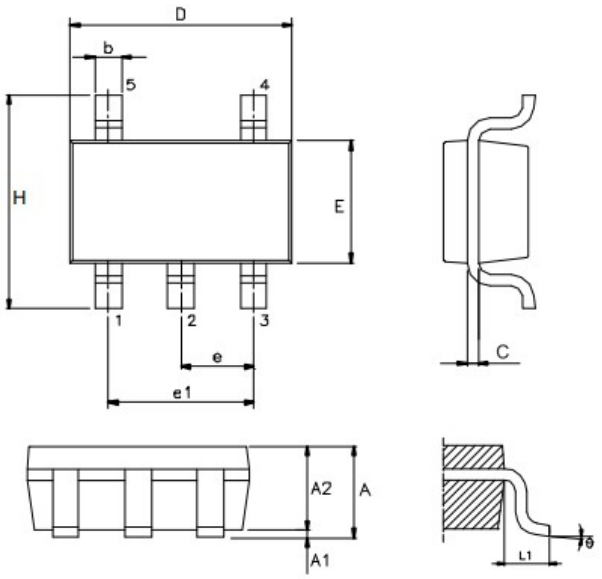
Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	4.40	–	4.60
B	1.35	–	1.83
C	2.29	–	2.60
D	0.89	–	1.20
E	3.94	–	4.25
F	0.36	–	0.48
G	0.44	–	0.56
H	–	1.50 BSC	–
I	1.40	–	1.60
J	0.35	–	0.44

③ SOT-23-3



Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	–	–	1.45
A1	–	–	0.15
A2	0.9	1.15	1.3
b	0.3	–	0.5
c	0.08	–	0.22
D	–	2.90 BSC	–
E	–	1.60 BSC	–
e	–	0.95 BSC	–
el	–	1.90 BSC	–
H	–	2.80 BSC	–
L	–	0.60 BSC	–
0	0°	–	8°

④ SOT-23-5



Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	–	–	1.45
A1	–	–	0.15
A2	0.9	1.15	1.3
b	0.3	–	0.5
c	0.08	–	0.22
D	–	2.90 BSC	–
E	–	1.60 BSC	–
e	–	0.95 BSC	–
el	–	1.90 BSC	–
H	–	2.80 BSC	–
L	–	0.60 BSC	–
0	0°	–	8°