

350mA Current、8V Input Voltage LDO

H7606

General Description

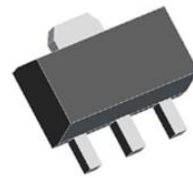
H7606 series are a highly precise, lower consumption, 3 terminal, positive voltage regulators manufactured using CMOS and laser trimming technologies. The series provides large currents with a significantly small dropout voltage. The H7606 consists of a current limiter circuit, a driver transistor, a precision reference voltage and an error correction circuit. The series is compatible with low ESR ceramic capacitors. The current limiter's fold back circuit operates as a short circuit protection as well as the output current limiter for the output pin. It is selectable in 0.1V increments within a range of 1.2V to 5.0V.



SOT23



SOT23-3



SOT89-3

Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- Low Quiescent Current: 5 μ A@6V
- Output voltage accuracy: tolerance \pm 2%
- SOT-23, SOT23-3 and SOT-89 packages

Applications

- Battery-powered equipment
- Reference voltage sources
- Cameras, video cameras
- Portable AV systems
- Mobile phones
- Portable games

Order information

Product model	Package	Manner of packing	Minimum packing quantity
H7606-XXNX	SOT23	Reel	3000
H7606-XXMX	SOT23-3	Reel	3000
H7606-XXPX	SOT89-3	Reel	1000

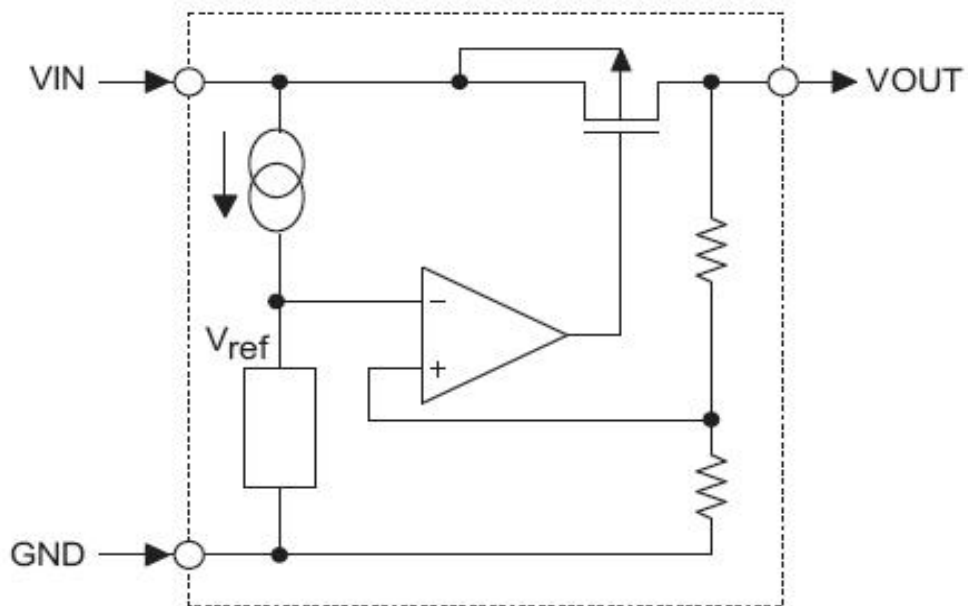
Order Information

H7606-①②③④

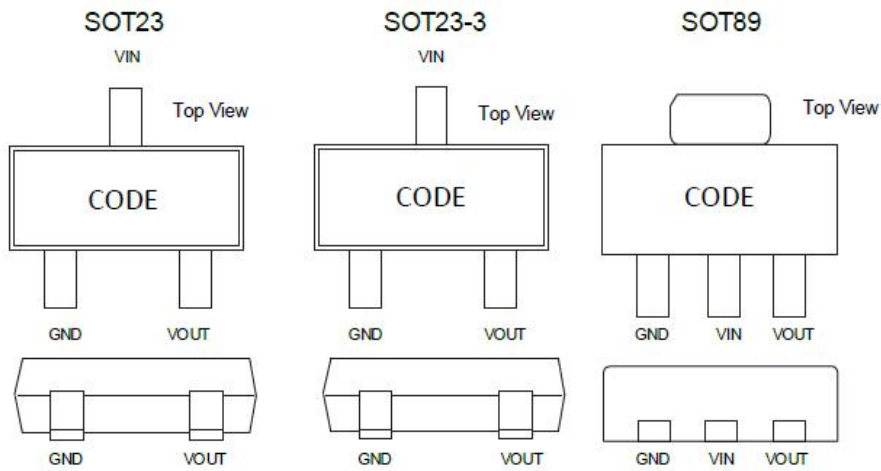
Designator	Symbol	Description
① ②	Integer	Output Voltage(1.2V~5.0V)
③	N	Package:SOT23
	M	Package:SOT23-3
	P	Package:SOT89-3
④	R	RoHS / Pb Free
	G	Halogen Free

Note: "①②" stands for output voltages. Other voltages can be specially customized.

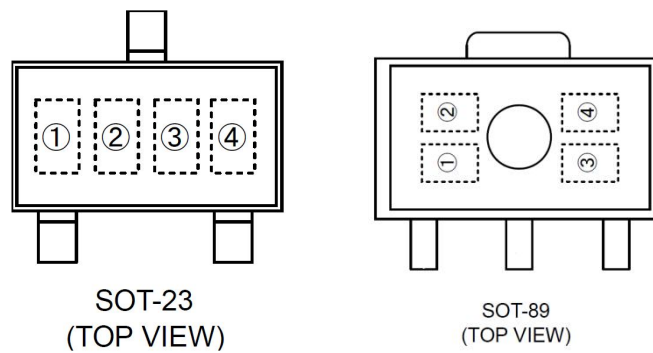
Block Diagram



Pin Assignment



Marking Rule



① represents product number

MARK	PRODUCT SERIES
6	H7606-XXXX

② represents 3 pins regulator

MARK		PRODUCT SERIES
VOLTAGE=0.1~3.0V	VOLTAGE=3.1V~6.0V	
5	6	H7606

③ represents output voltage

MARK	VOLTAGE(V)			MARK	VOLTAGE(V)		
0	-	3.1	-	F	1.6	4.6	-
1	-	3.2	-	H	1.7	4.7	-
2	-	3.3	-	K	1.8	4.8	-
3	-	3.4	-	L	1.9	4.9	-
4	-	3.5	-	M	2.0	5.0	-
5	-	3.6	-	N	2.1	-	-
6	-	3.7	-	P	2.2	-	-
7	-	3.8	-	R	2.3	-	-
8	-	3.9	-	S	2.4	-	-
9	-	4.0	-	T	2.5	-	-
A	-	4.1	-	U	2.6	-	-
B	1.2	4.2	-	V	2.7	-	-
C	1.3	4.3	-	X	2.8	-	-
D	1.4	4.4	-	Y	2.9	-	-
E	1.5	4.5	-	Z	3.0	-	-

④ X: On behalf of the company's product batch number

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Units	
Input Voltage	V _{IN}	10	V	
Output Current	I _{OUT}	350*	mA	
Output Voltage	V _{OUT}	V _{SS} -0.3~V _{IN} +0.3	V	
Power Dissipation	SOT23	P _d	0.20	W
	SOT23-3		0.20	W
	SOT89-3		0.50	W
Operating Temperature Range	T _{opr}	-40~+85	°C	
Storage Temperature Range	T _{stg}	-55~+125	°C	

*I_{OUT}=P_d/(V_{IN}-V_{OUT})

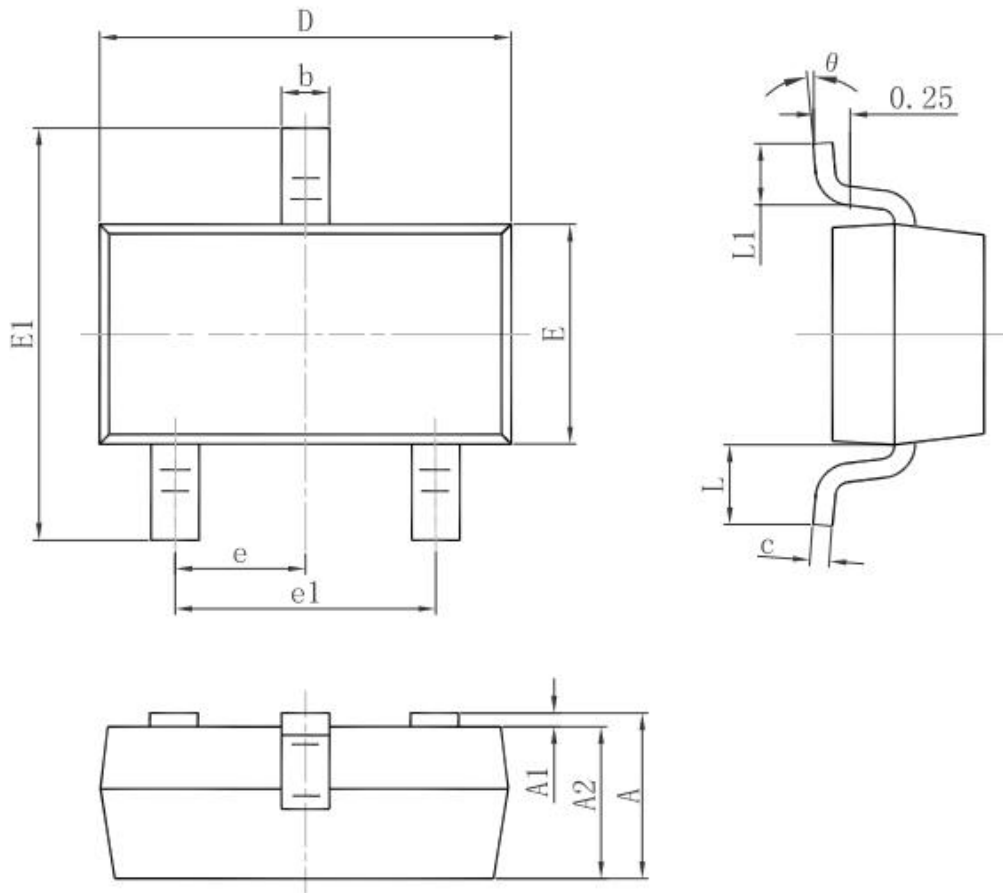
Electrical Characteristics

H7606 for any output voltage (Ta=25°C)

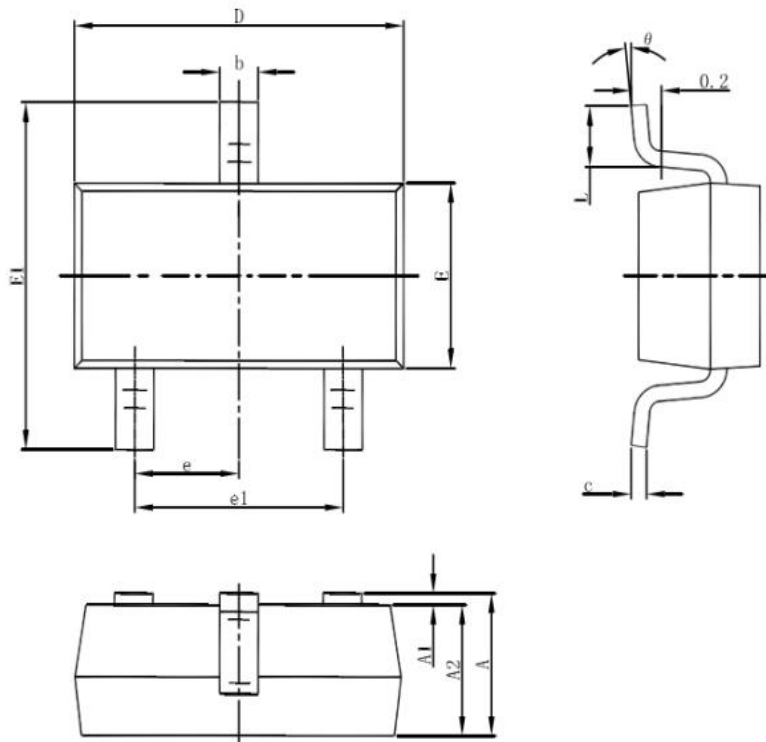
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Vin=Vout+1V 1.0mA≤Iout≤30mA	Vout×0.98	--	Vout×1.02	V
Output Current*1	Iout	Vin-Vout=1V	--	350	--	mA
Low dropout*2	Vdrop	Refer to the next table				
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta V_{IN}}$	1.6V≤Vin≤8V Iout=40mA	--	0.05	0.2	%/V
Load Regulation	ΔVOUT	Vin= Vout+1V 1.0mA≤Iout≤80mA	--	12	30	mV
Output voltage Temperature Coefficiency	$\frac{\Delta V_{OUT}}{\Delta T \times V_{OUT}}$	Iout=30mA 0°C≤Ta≤70°C	--	±100	--	Ppm/°C
Supply Current	Iss1	--	--	5	--	μA
Input Voltage	Vin	--	--	6	8	V
PSRR	PSRR	F=1KHz Vin=Vout+1V	--	50	--	dB
Output Noise	EN	BW=10Hz ~ 100KHz	--	30	--	μVrms

Electrical Characteristics by Output Voltage:

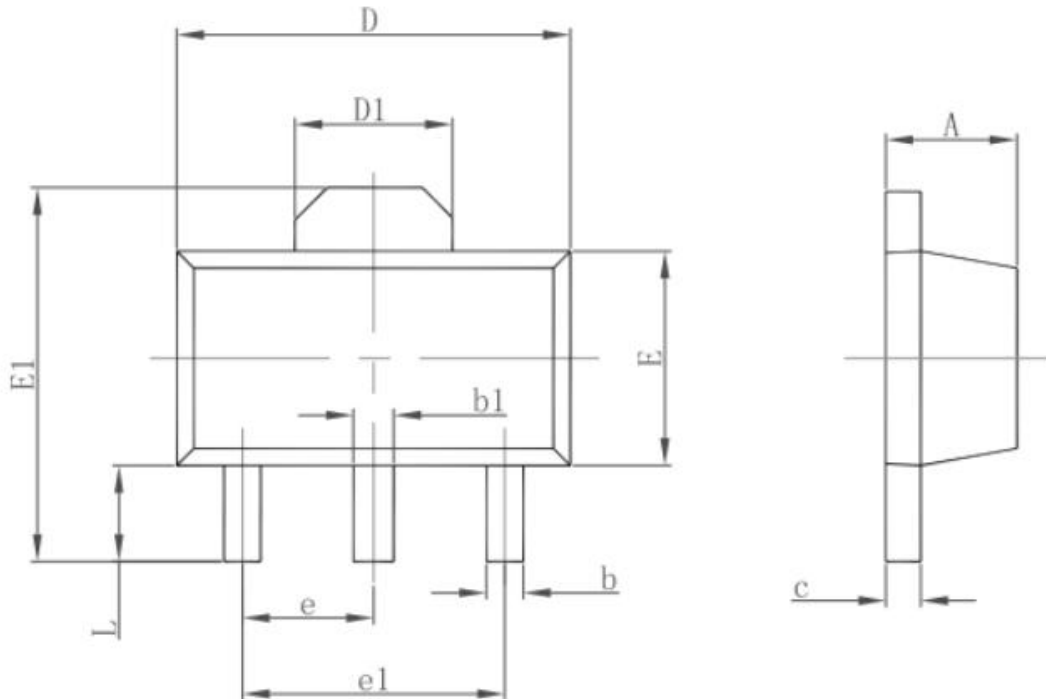
Output Voltage Vout(V)	Dropout Voltage Vdif (V)		
	Conditions	Typ.	Max.
Vout≤1.5V	Iout=100 mA	0.35	0.57
1.8 ≤ Vout ≤ 2		0.28	0.42
2.8 ≤ Vout ≤ 5.0		0.19	0.35

Package Information (SOT23)


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP.		0.037TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550REF.		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Package Information (SOT23-3)


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°

Package Information (SOT89-3)


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	1.550REF.		0.061REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP.		0.060TYP.	
e1	3.000TYP.		0.118TYP.	
L	0.900	1.200	0.035	0.047

Special Version

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

Version Change Description

Versions: V1.4

Writer: HangLiu

Time: 2021.10.29

Amendant record:

1. Re-typesetting the manual and checking some data

Versions: V1.5

Writer: Yang

Time: 2023.04.03

Amendant record:

1. Update quiescent current
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Statement

The information in the usage specification is correct at the time of publication, Shanghai Siproin Microelectronics Co. 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.