# 1A Current、8V Input Voltage LDO

H7651

General Description

The H7651 series is a group of positive voltage output, three-pin regulators, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and laser trimming technologies.

The H7651 consists of a high-precision voltage reference, an error amplification circuit, and a current limited output driver. Transient response to load variations have improved in comparison to the existing series.
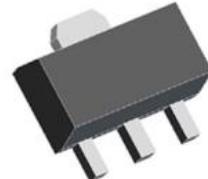
SOT89

SOT223

Features

- Low voltage drop: 0.06V@100mA
- High input voltage: 8.5V
- Low temperature coefficient
- Low Quiescent Current: 2uA at 5.0V
- Output voltage accuracy: tolerance ±2%
- SOT89 and SOT223 packages

Applications

- Low Quiescent Current: 2μA at 5.0V
- Output voltage accuracy: tolerance ±2%
- GRS Receivers
- Wireless LAN

Order information

Product model	Package	Manner of packing	Minimum packing quantity
H7651-XXPX	SOT89	Reel	1000
H7651-XXGX	SOT223	Reel	3000

Order Information

H7651-①②③④

Designator	Symbol	Description
①　②	Integer	Output Voltage(1.2V~5.0V)
③	P	Package:SOT89
	G	Package:SOT223
④	R	RoHS / Pb Free
	G	Halogen Free

Block Diagram

Pin Assignment

1 Vss
2 VIN
3 VOUT

SOT-89
(TOP VIEW)

1 VIN
2 Vss
3 VOUT
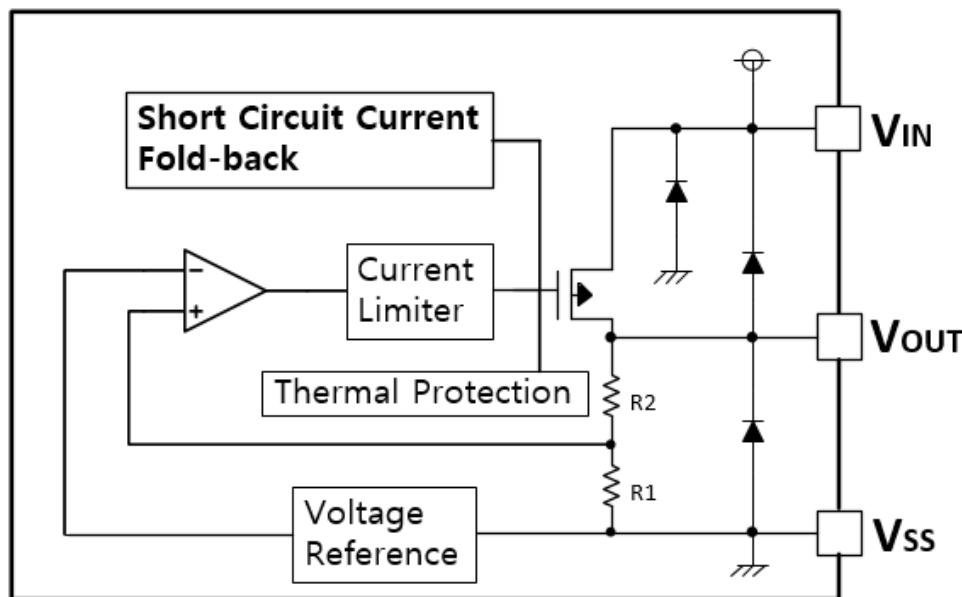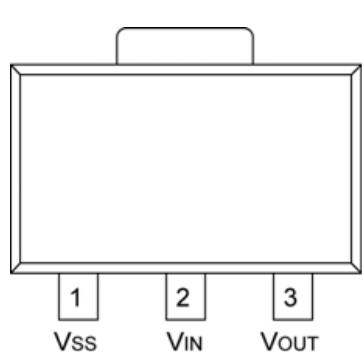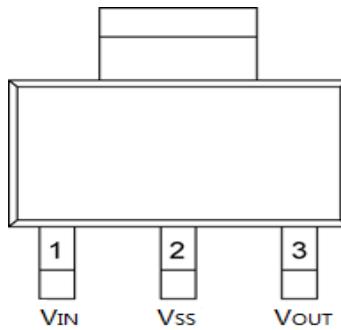
SOT-223
(TOP VIEW)

Typical Application
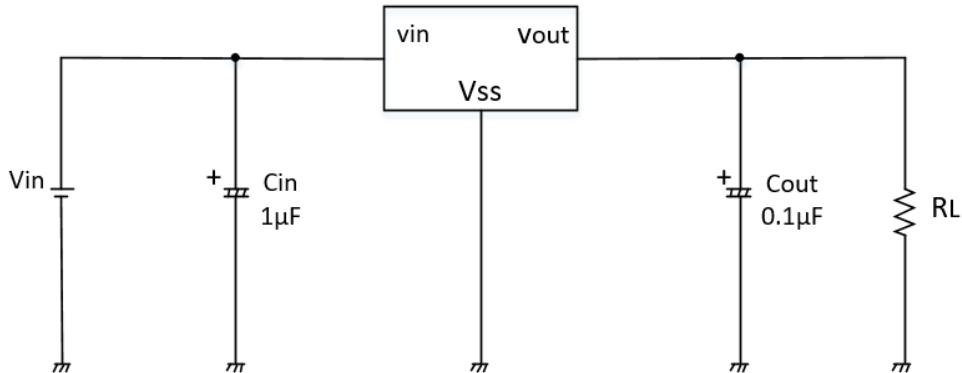
Note1:Input capacitor CIN=1 μF.
Note2:Ouput capacitor COUT=0.1 μF.

bsolute Maximum Ratings

Parameter	Symbol	Ratings	Units
Supply Voltage	V_{IN}	-0.3~8.5	V
Output Current	I_{OUT}	1.1	A
Operating Temperature	T_{opr}	-40~+85	℃
Storage Temperature	T_{stg}	-40~+125	℃

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

H7606 for any output voltage （Ta=25℃)

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	Iout	Vin-Vout=1V	--	1000	--	mA
Low dropout	Vdrop	Refer to the next table				
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta V_{IN}}$	1.6V≤Vin≤8V Iout=100mA	--	0.05	0.2	%/V
Load Regulation	△Vout	Vin= Vout+1V 1.0mA≤Iout≤100mA	--	12	30	mV
Output voltage Temperature Coefficiency	$\frac{\Delta V_{OUT}}{\Delta T \times V_{OUT}}$	Iout=30mA 0℃≤Ta≤70℃	--	±100	--	Ppm/℃
Supply Current	Iss1	--	--	2.0	5.0	μA
Input Voltage	Vin	--	--	--	8.5	V
Thermal shutdown detection temperature	T$_{SD}$	Junction temperature	-	160	-	℃
Thermal shutdown release temperature	T$_{SR}$	Junction temperature	-	140	-	℃

Electrical Characteristics by Output Voltage：

Output Voltage Vout(V)	Dropout Voltage Vdif （V)		
	Conditions	Typ.	Max.
Vout ≤ 2.0V	Iout=60 mA	0.05	0.08
2.0 < Vout ≤ 3.0	Iout=80 mA	0.05	0.08
3.0 < Vout ≤ 4.0	Iout=100 mA	0.06	0.08
4.0 < Vout ≤ 5.0		0.05	0.08
3.0 < Vout ≤ 4.0	Iout=200 mA	0.13	0.16
4.0 < Vout ≤ 5.0		0.12	0.16
3.0 < Vout ≤ 4.0	Iout=1000 mA	0.65	0.8
4.0 < Vout ≤ 5.0		0.6	0.8

Package Information (SOT89-3)
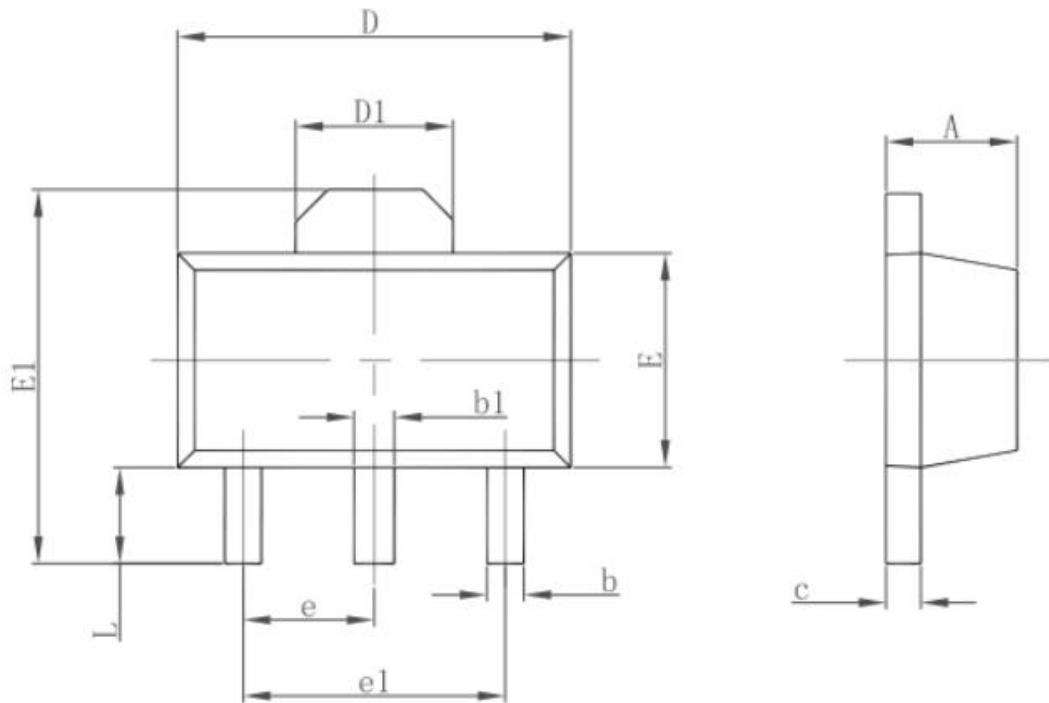
Symbol	Dimensions In Milimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550REF.		0.061REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP.		0.060TYP.	
e1	3.000TYP.		0.118TYP.	
L	0.900	1.200	0.035	0.047

Package Information (SOT223)
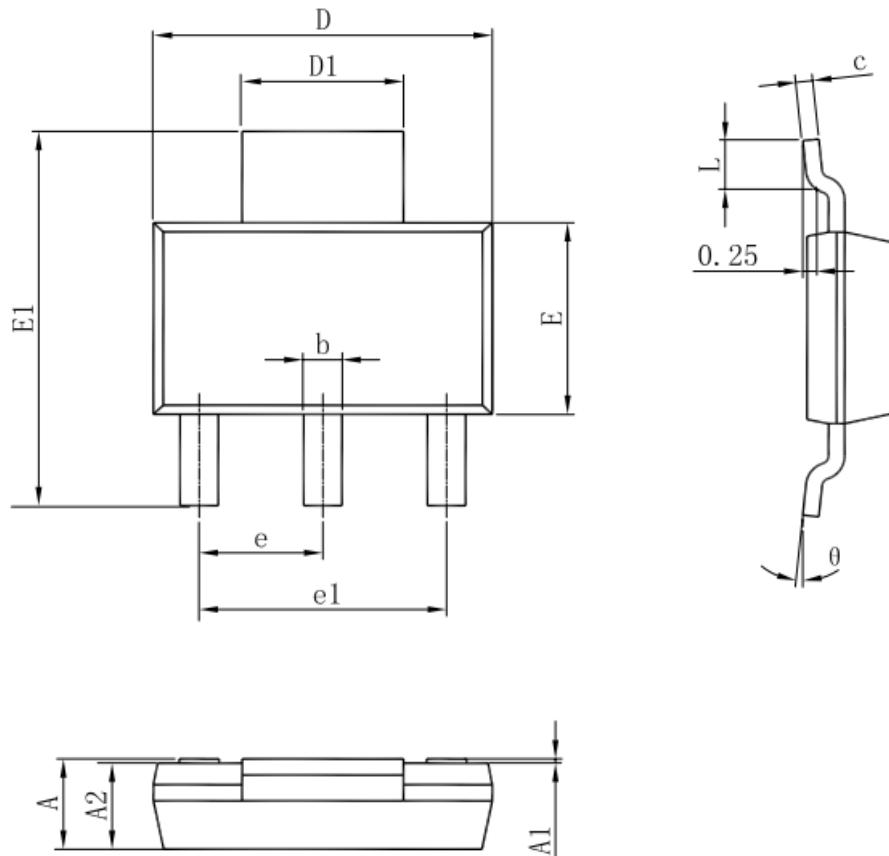
Symbol	Dimensions In Milimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.520	1.800	0.060	0.071
A1	0.000	0.100	0.000	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.820	0.026	0.032
c	0.250	0.350	0.010	0.014
D	6.200	6.400	0.244	0.252
D1	2.900	3.100	0.114	0.122
E	3.300	3.700	0.130	0.146
E1	6.830	7.070	0.269	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：V1.5	Writer：HangLiu	Time：2021.10.29

Amendant record：

1.Re-typesetting the manual and checking some data