

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 $\pm 2\%$

Applications

- Battery-powered equipment
- Hand-Hold Equipment
- GRS Receivers
- Wireless LAN

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.

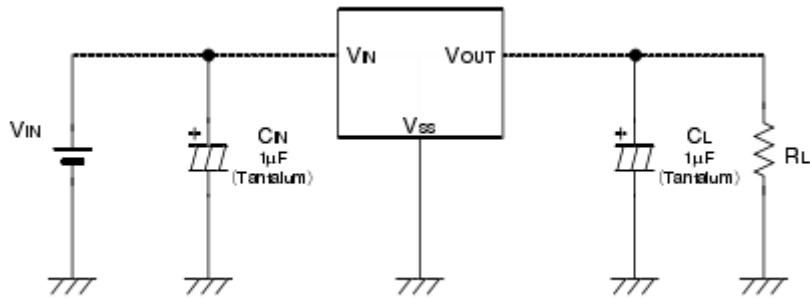
SOT89 and SOT223 packages are available.

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

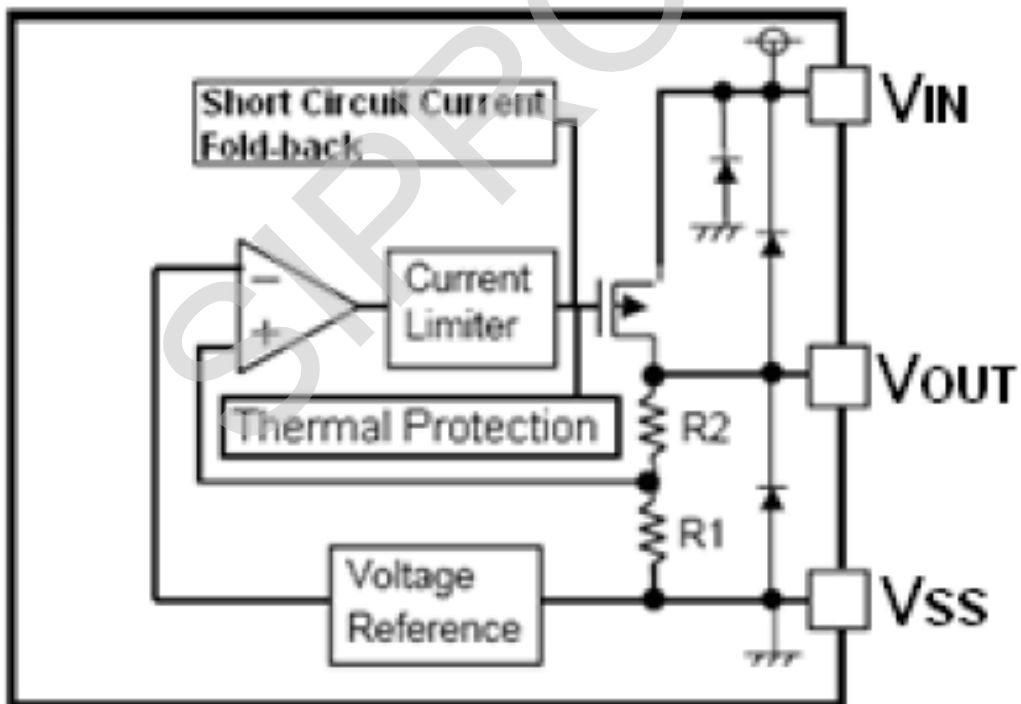
Typical Application



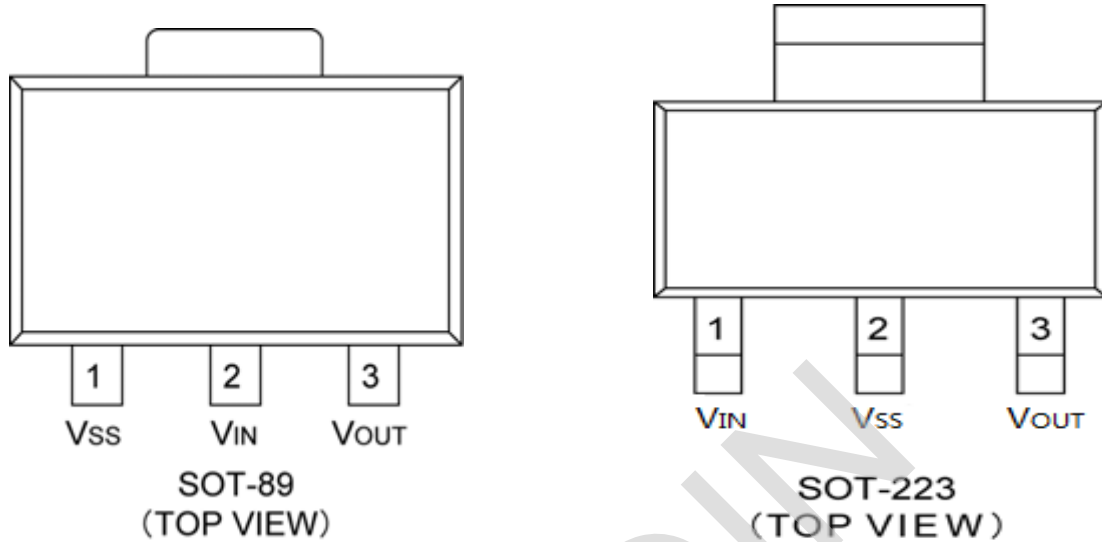
Note1: Input capacitor $C_{IN}=1\mu F$.

Note2: Output capacitor $C_{OUT}=1\mu F/6.8\mu F$ (1µF Tantalum capacitor or 6.8µF ceramic capacitor is recommended).

Block Diagram



Pin Assignment



Absolute Maximum Ratings

Supply Voltage	-0.3V to 8.5V	Operating Temperature	-40°C to 85°C
Output Current.....	1.1A	Storage Temperature	-40°C to 125°C

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

H7651 for any output voltage

(Ta=25°C)

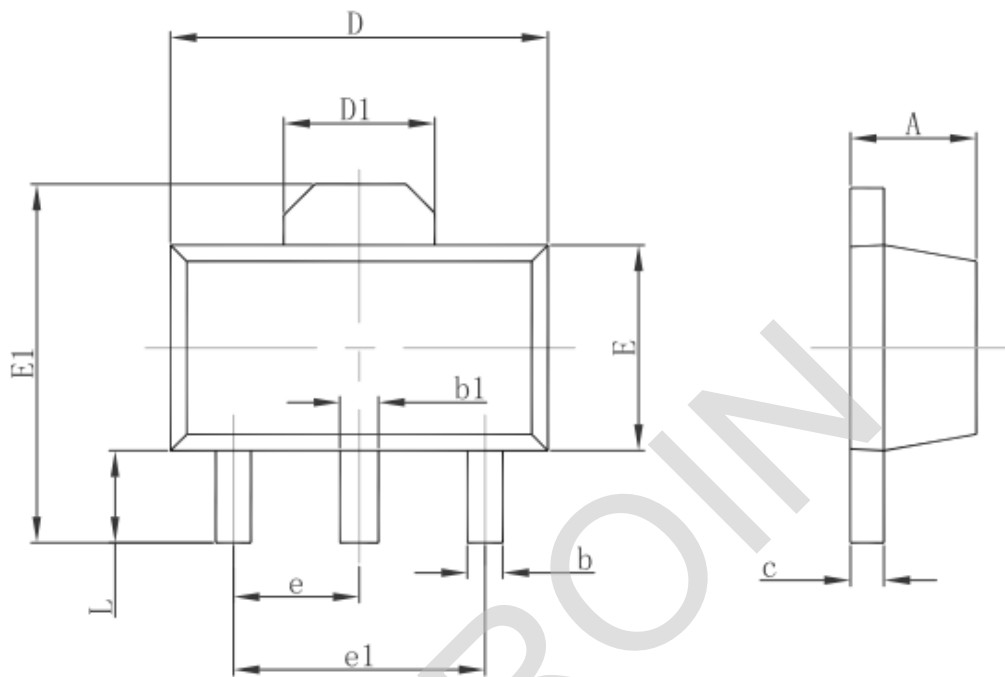
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Vin=Vout+1V 1.0mA≤Iout≤30mA	Vout×0.98	--	Vout×1.02	V
Output Current*1	Iout	Vin-Vout=1V	--	1000	--	mA
Low dropout*2	Vdrop	Refer to the next table				
Line Regulation	$\Delta V_{out1}/(V_{in} \cdot V_{out})$	1.6V≤Vin≤8V Iout=100mA	--	0.05	0.2	%/V
Load Regulation	ΔV_{out}	Vin=Vout+1V 1.0mA≤Iout≤100mA	--	12	30	mV
Output voltage Temperature Coefficient	$\Delta V_{out}/(T_a \cdot V_{out})$	Iout=30mA 0°C≤Ta≤70°C	--	±100	--	Ppm/°C
Supply Current	Iss1	--	--	2.0	5.0	uA
Input Voltage	Vin	--	--	--	8.5	V
Thermal shutdown detection temperature	TSD	Junction temperature	-	160	-	°C
Thermal shutdown release temperature	TSR	Junction temperature	-	140	-	°C

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

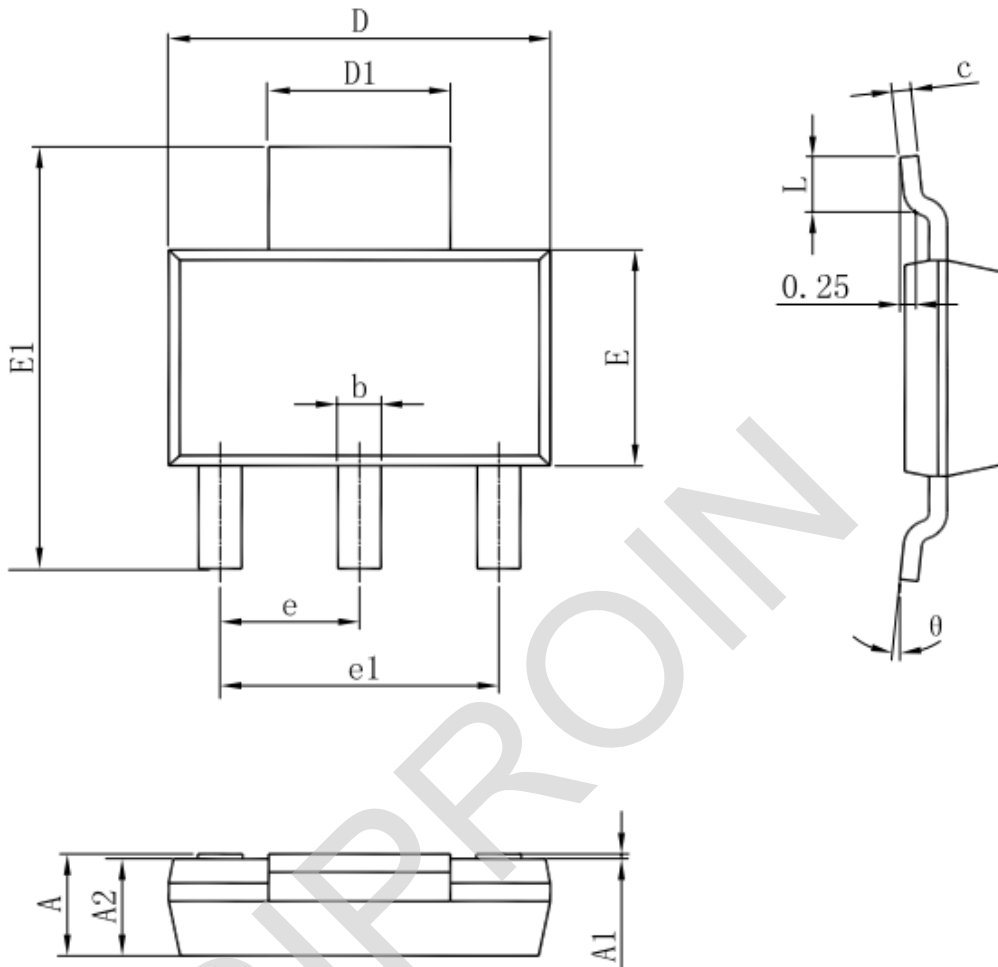
Package Information

3-pin SOT89 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

SOT-223 PACKAGE 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°