

### Features

- Input Voltage up to 30V
- Output current up to 200mA(Max)
- 3 $\mu$ A Current at no Load(Typ)
- $\pm$ 2% Output Accuracy
- Compact package: SOT89-3&SOT23

### Applications

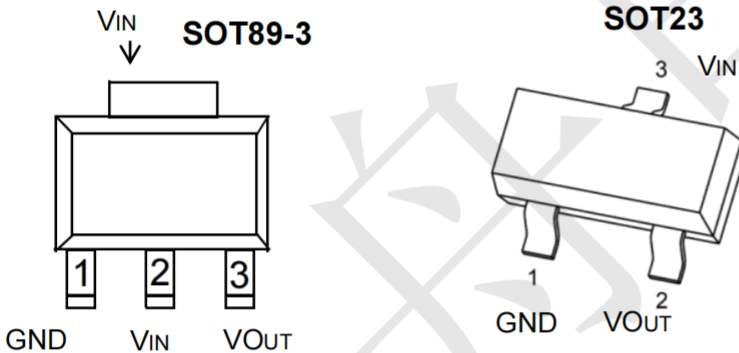
- Hand-Held Instruments
- Battery Powered Consumer Products
- Test and Measurement Equipment
- Industrial Power Supplies

### Description

The HT75xx series are micropower low dropout voltage regulators available in a wide variety of output voltages. These devices feature a very low quiescent current and thermal limiting protection are provided by the presence of a short circuit at the output and an internal thermal shutdown circuit.

Due to the low input-to-output voltage differential and bias current specifications, these devices are ideally suited for battery powered computer, consumer, and industrial equipment where an extension of useful battery life is desirable.

### PIN CONFIGURATION (TOP VIEW)



SOT89-3	SOT23	Pin Name	Pin Function
1	1	GND	Ground
2	3	VIN	Input of Supply Voltage
3	2	VOUT	Output of the Regulator

### Ordering Information

HT7533  
 PACKAGE TYPE  
 :SOT23  
 -3:SOT89-3

OUTPUT VOLTAGE  
 15 : 1.5V; 18 : 1.8V; 25 : 2.5V .  
 28 : 2.8V; 30 : 3.0V; 33 : 3.3V .  
 50 : 5.0V .

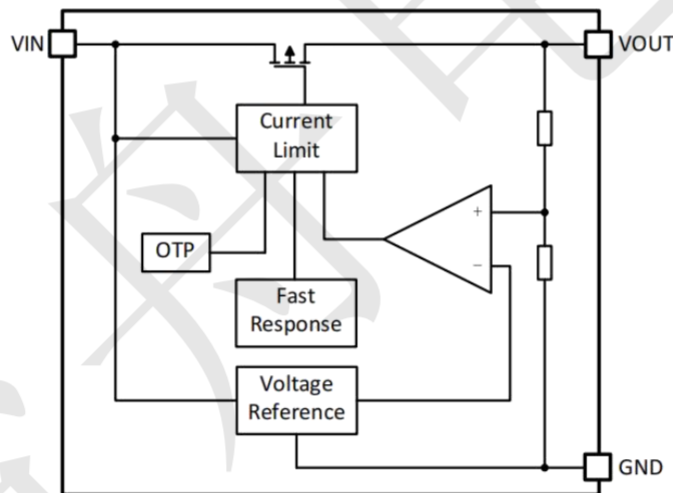
Example:HT7533  
 → 3.3V Version, in SOT23 Package  
 &Tape & Reel Packing Type

### Absolute Maximum Ratings

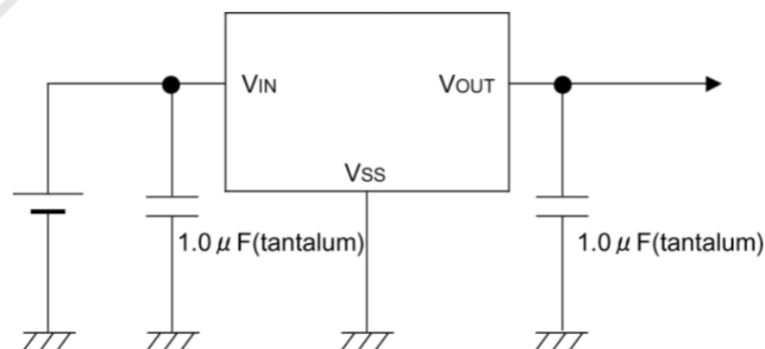
over operating free-air temperature range (unless otherwise noted)

SYMBOL	PARAMETER	RATINGS	UNIT
V <sub>IN</sub>	Continuous input voltage range	-0.3 ~ +35	V
Current	Maximum output current	200	mA
T <sub>J</sub>	Operating Junction Temperature Range	-40 ~ +125	°C
T <sub>A</sub>	Ambient temperature	-40 ~ +85	°C
T <sub>stg</sub>	Storage temperature range	-55 ~ 150	°C
PD	Power Dissipation SOT89-3	500	mW
PD	Power Dissipation SOT23	250	mW
θ <sub>JC</sub>	Junction to Case SOT89-3	25	°C/W
θ <sub>JC</sub>	Junction to Case SOT23	50	°C/W

### BLOCK DIAGRAM



### Typical Application Circuit



### Electrical Characteristics (TA=25°C, unless otherwise specified)

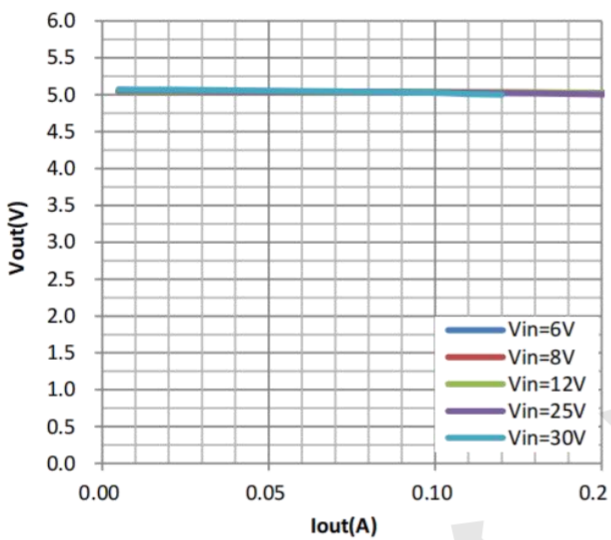
PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Supply Voltage	V <sub>IN</sub>	I <sub>OUT</sub> = 1mA	--	--	30	V
Output current	I <sub>OUT</sub>	V <sub>IN</sub> -V <sub>OUT</sub> =1V	--	150	200	mA
DC Output Voltage Accuracy		I <sub>OUT</sub> = 1mA	-2	--	+2	%
Dropout Voltage (V <sub>IN</sub> -V <sub>OUT</sub> )	I <sub>OUT</sub> = 100mA	V <sub>OUT</sub> = 5.0V	--	460	--	mV
Ground Current (I <sub>OUT</sub> = 0mA)	I <sub>Q</sub>		--	3	6	uA
Line Regulation	ΔLINE	I <sub>OUT</sub> = 1mA, 10 ≤ V <sub>IN</sub> ≤ 18V	--	0.3	--	%
Load Regulation	ΔLOAD	10mA ≤ I <sub>OUT</sub> ≤ 100mA	--	0.3	--	
Output Current Limit	I <sub>LIM</sub>	V <sub>OUT</sub> = 0.9 × V <sub>OUT(NOM)</sub>	--	300	--	mA
Power Supply Rejection Ratio	PSRR	V <sub>OUT</sub> = 5V, I <sub>OUT</sub> = 30mA, V <sub>IN</sub> = 12V, f = 1kHz	--	60	--	dB
Thermal Shutdown Temperature	T <sub>SD</sub>	I <sub>OUT</sub> = 10mA	--	160	--	°C
Thermal Shutdown Hysteresis	ΔT <sub>SD</sub>		--	15	--	

Note:

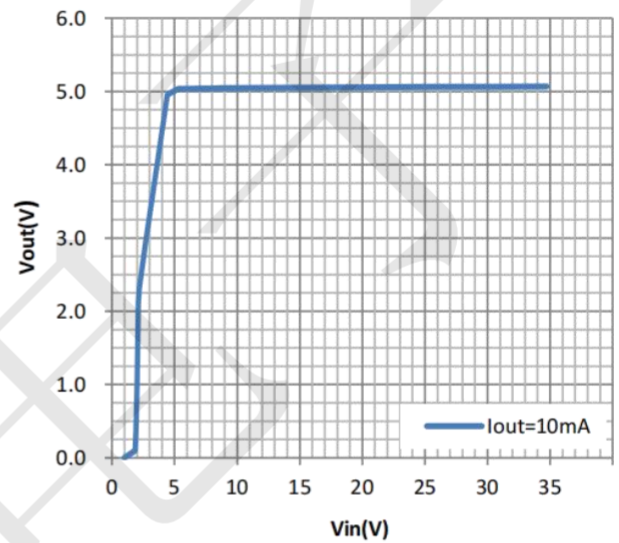
1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.
2. V<sub>dif</sub> : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of V<sub>OUT</sub> .

### Typical Application Circuit

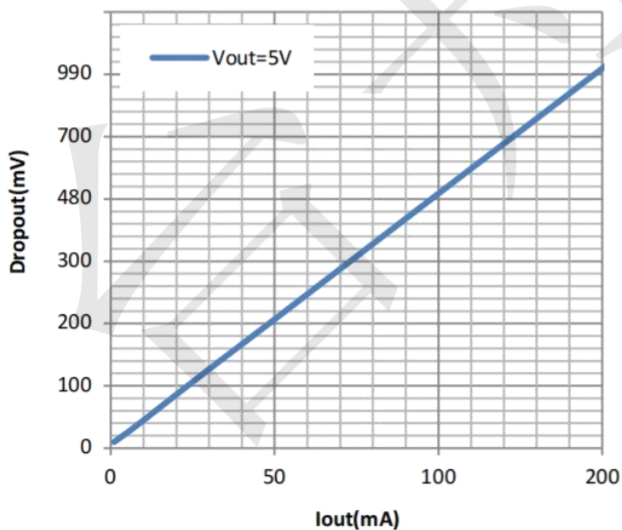
**Load Regulation**



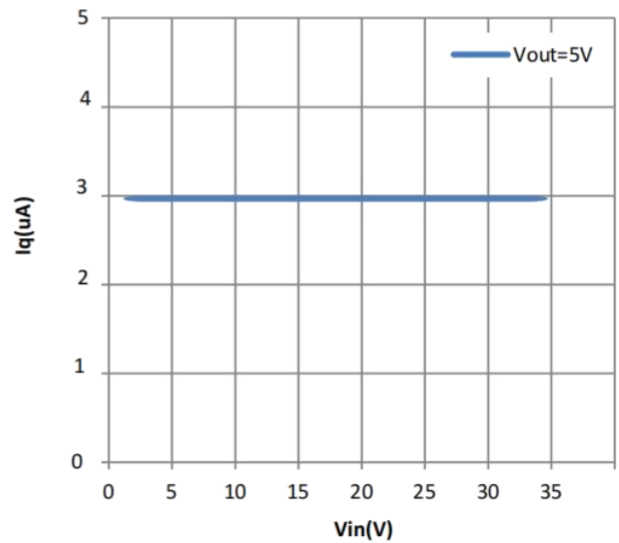
**Line Regulation**



**Dropout**

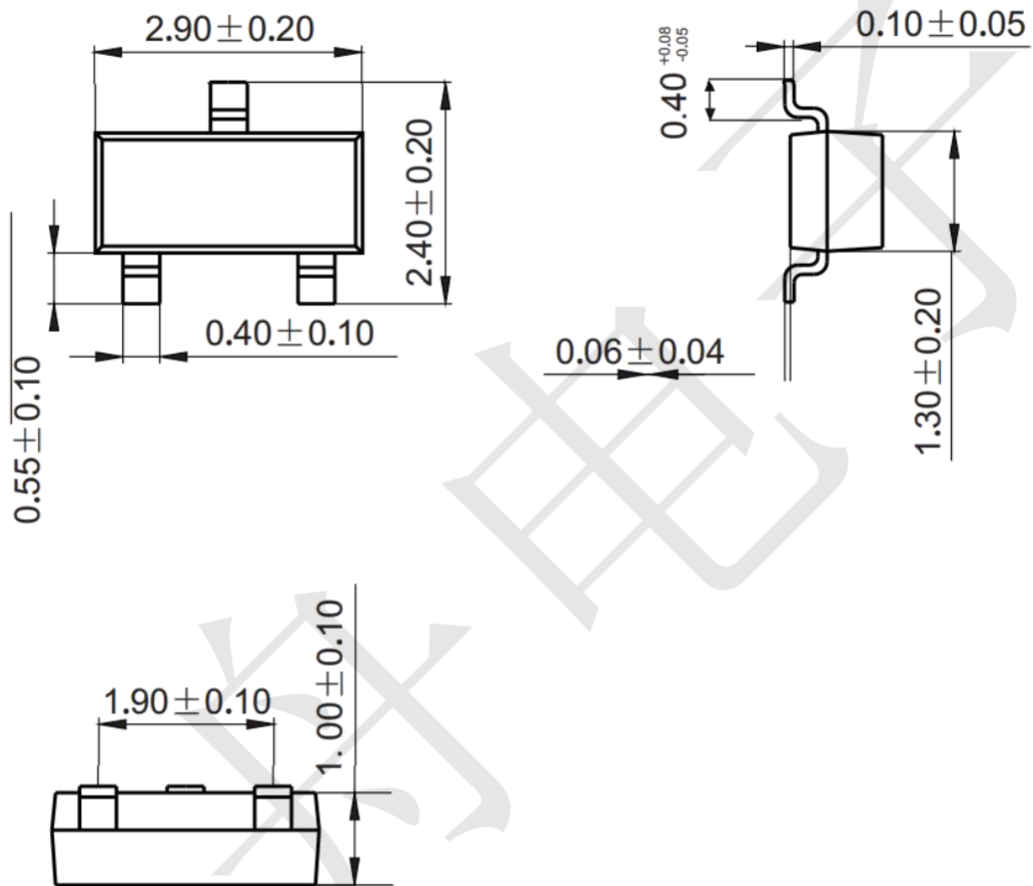


**Iq**

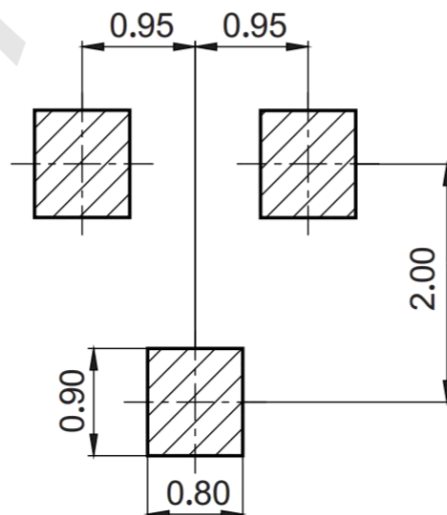


### Package Outline Dimensions (unit: mm)

SOT23

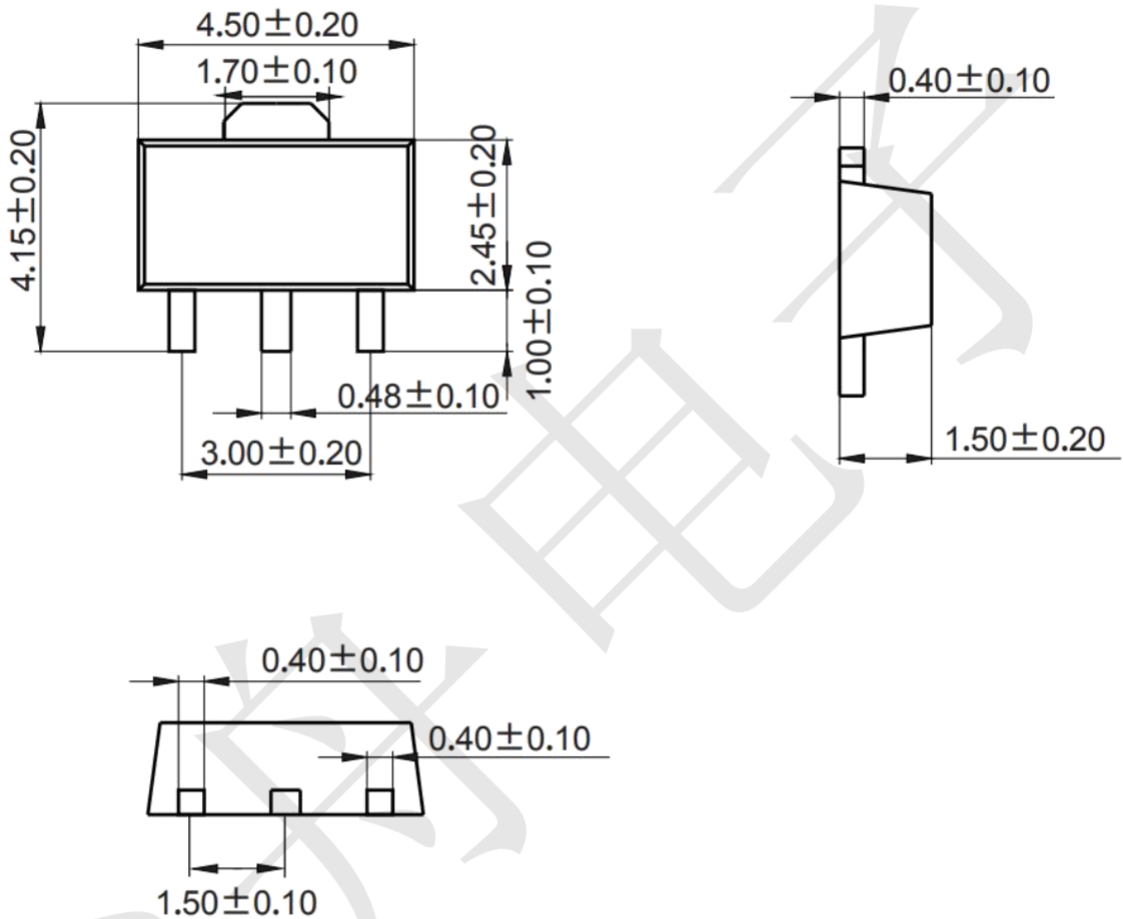


### Mounting Pad Layout (unit: mm)



### Package Outline Dimensions (unit: mm)

SOT89-3



### Mounting Pad Layout (unit: mm)

