

150 mA, high input voltage LDO Linear Regulators HS75XX Series

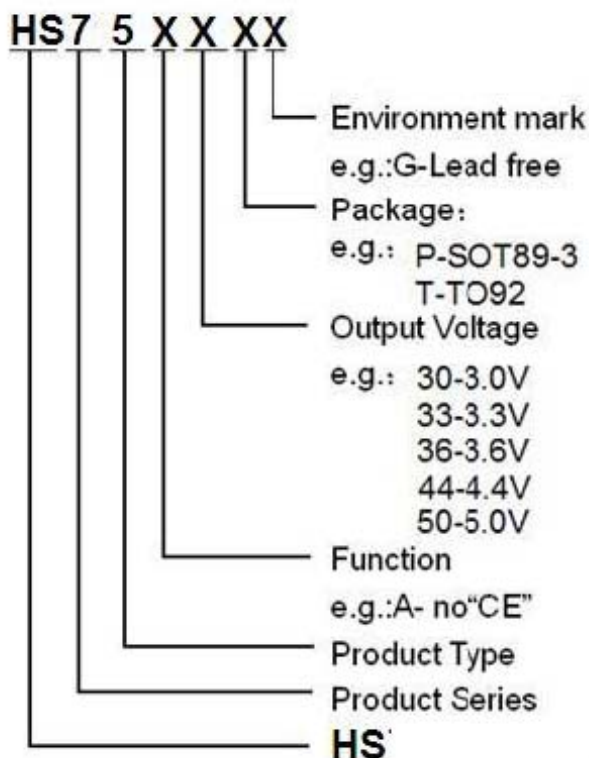
General Description

HS75XX series are low-dropout linear voltage regulators with a built-in voltage reference module, error correction module and phase compensation module. HS75XX series are based on the CMOS process and allow high voltage input with low quiescent current. This series has the function of internal feedback resistor setting from 3.0V to 5.0V. The output accuracy is $\pm 2\%$.

Features

- High output accuracy: $\pm 2\%$
- Input voltage: up to 18 V
- Output voltage: 3.0 V ~ 5.0V
- Ultra-low quiescent current (Typ. = 3 μ A)
- Output Current: $I_{out} = 150\text{mA}$
(When $V_{in} = 7\text{V}$ and $V_{out} = 5\text{V}$)
- Importation good stability: Typ. 0.05% / V
- Low temperature coefficient
- Ceramic capacitor can be used
- Package: SOT89-3、TO92

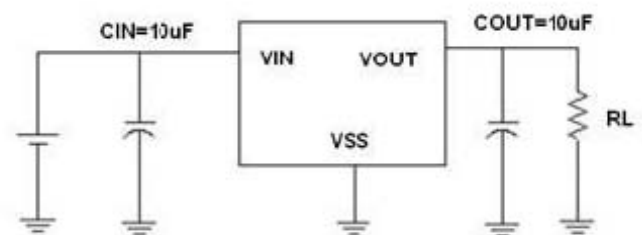
Selection Guide



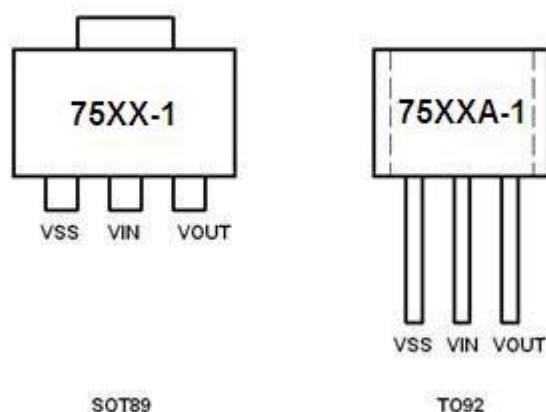
Typical Application

- Electronic weighbridge
- SCM
- Phones, cordless phones
- Security Products
- Water meters, power meters

Typical Application Circuit



Pin Configuration



Pin Assignment

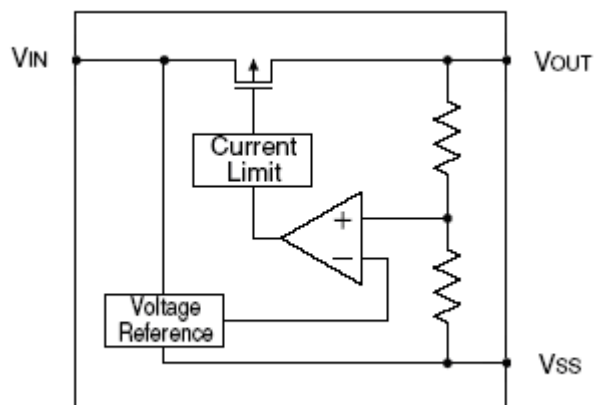
HS75XX

Pin Number		Pin Name	Functions
SOT89-3	TO92		
1	1	V _{SS}	Ground
2	2	V _{IN}	Power Input
3	3	V _{OUT}	Output

Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		V _{IN}	18	V
Output Current		I _{OUT}	250	mA
Output Voltage		V _{OUT}	V _{SS} -0.3~V _{IN} +0.3	V
Power Dissipation	SOT89-3	P _D	500	mW
	TO92		500	mW
Operating Temperature Range		T _{OPR}	−25~+85	℃
Storage Temperature Range		T _{STG}	−40~+125	℃
Lead Temperature			260℃, 10sec	

Block Diagram



Electrical Characteristics

HS75XX

($V_{IN} = V_{OUT} + 2.0V$, $C_{IN} = C_L = 10\mu F$, $T_a = 25^\circ C$, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT}(E)$ (Note 2)	$I_{OUT} = 40mA$, $V_{IN} = V_{OUT} + 2V$	X 0.98	$V_{OUT}(T)$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				18	V
Maximum Output Current	I_{OUT_max}	$V_{IN} = V_{OUT} + 2V$	150			mA
Load Regulation	ΔV_{OUT}	$V_{IN} = V_{OUT} + 2V$, $1mA \leq I_{OUT} \leq 100mA$		10		mV
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT} = 50mA$		250		mV
	V_{dif2}	$I_{OUT} = 100mA$		500		mV
	V_{dif3}	$I_{OUT} = 200mA$		1000		mV
Supply Current	I_{SS}	$V_{IN} = V_{OUT} + 2V$		3		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT} + 2V \leq V_{IN} \leq 18V$		0.05		%/V

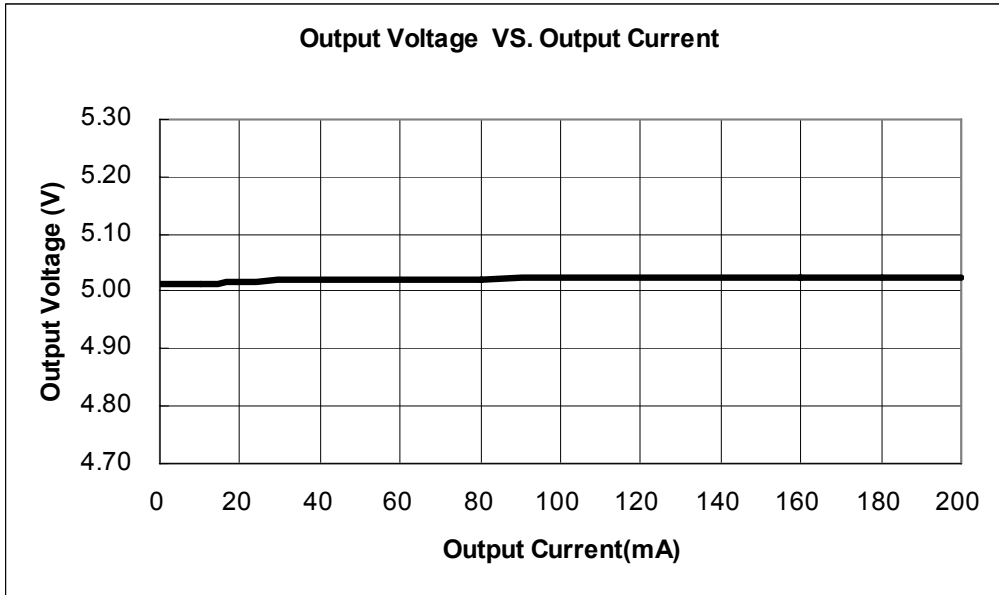
Note :

- $V_{OUT}(T)$: Specified Output Voltage
- $V_{OUT}(E)$: Effective Output Voltage (ie. The output voltage when " $V_{OUT}(T) + 2.0V$ " is provided at the Vin pin while maintaining a certain I_{OUT} value.)
- V_{DIF} : $V_{IN1} - V_{OUT}(E)'$
 V_{IN1} : The input voltage when $V_{OUT}(E)'$ appears as input voltage is gradually decreased.
 $V_{OUT}(E)'$ = A voltage equal to 98% of the output voltage whenever an amply stabilized I_{OUT} and $\{V_{OUT}(T) + 2.0V\}$ is input.

Type Characteristics

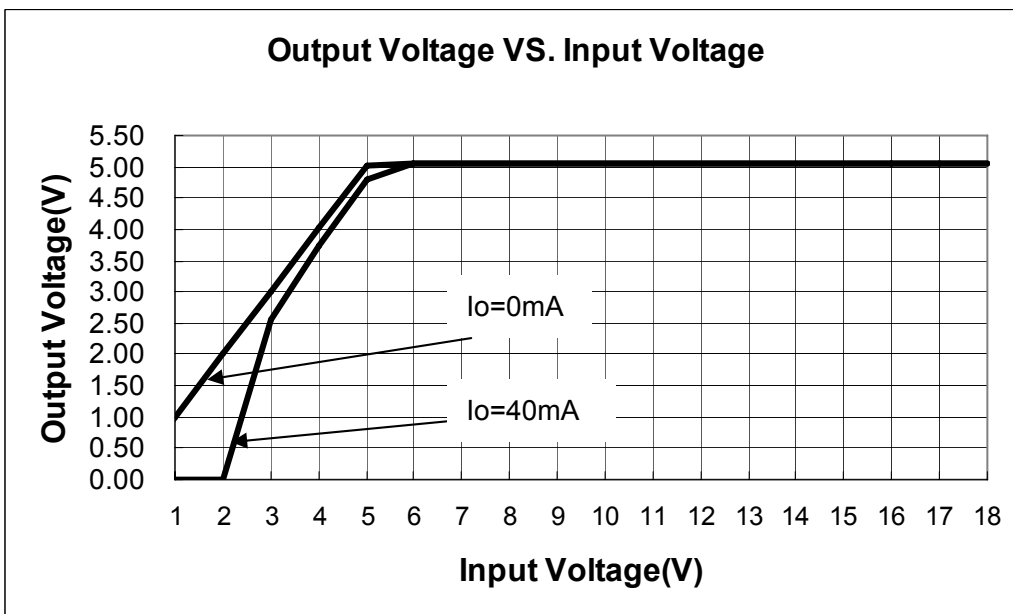
(1) Output Current VS. Output Voltage ($T_a = 25\text{ }^{\circ}\text{C}$)

HS7550



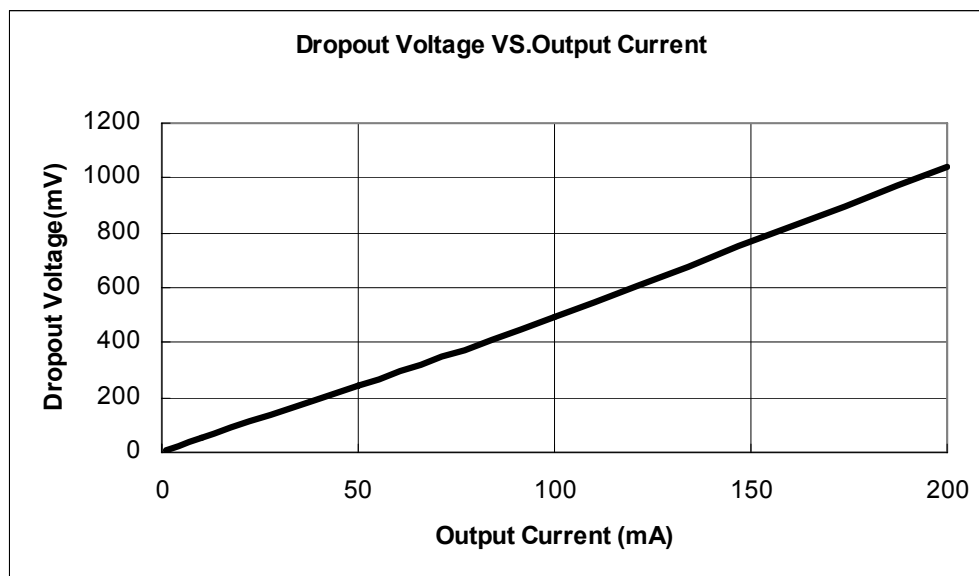
(2) Input Voltage VS. Output Voltage ($T_a = 25\text{ }^{\circ}\text{C}$)

HS7550



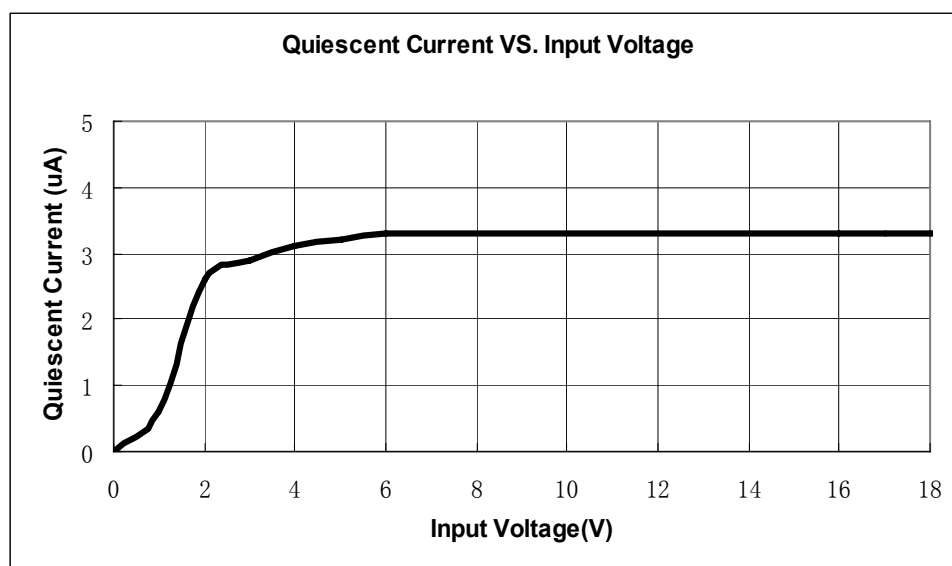
(3) Output Current VS. Dropout Voltage ($T_a = 25\text{ }^{\circ}\text{C}$)

HS7550



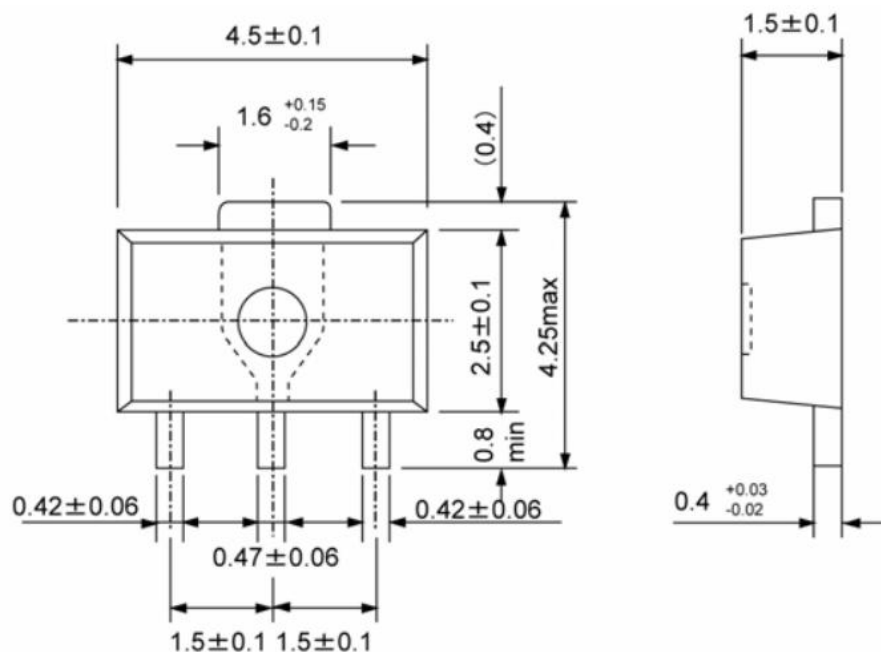
(4) Input Voltage VS. Supply Current ($T_a = 25\text{ }^{\circ}\text{C}$)

HS7550

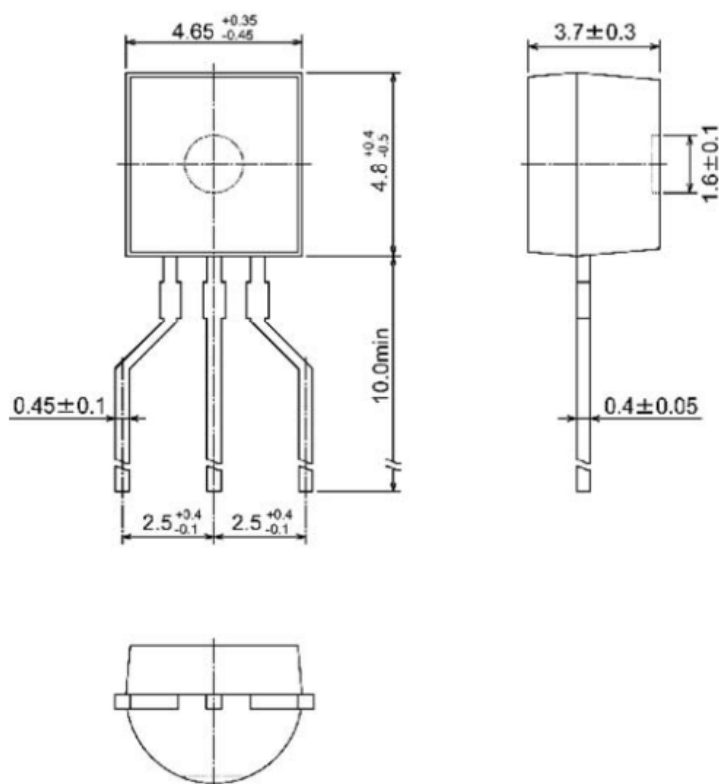


Packaging Information

● SOT89-3



● TO-92



- The information described herein is subject to change without notice.
- Shanghai Hangshun One Electronics Inc is not responsible for any problems caused by circuits or diagrams described herein whose related industrial properties, patents, or other rights belong to third parties. The application circuit examples explain typical applications of the products, and do not guarantee the success of any specific mass-production design.
- Use of the information described herein for other purposes and/or reproduction or copying without the express permission of Shanghai Hang shunOne Electronics Inc is strictly prohibited.
- The products described herein cannot be used as part of any device or equipment affecting the human body, such as exercise equipment, medical equipment, security systems, gas equipment, or any apparatus installed in airplanes and other vehicles, without prior written permission of Shanghai Hang shun One Electronics Inc.
- Although Shanghai Hangshun One Electronics Inc exerts the greatest possible effort to ensure high quality and reliability, the failure or malfunction of semiconductor products may occur. The user of these products should therefore give thorough consideration to safety design, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue.