250mA *Low Power LDO*

Low Power Consumption LDO HK73XX Series

General Description

The HK73XX series are a group of positive voltage output,three –pin regulator,that provide a high current even when the input/output Voltage differerntial is small.Low power consumption and high accuracy is achieved through CMOS technology.They allow input voltages as high as 12V.

Features

- Ultra low quienscent current: 3.0uA(typ)
- High input voltage (up to 12v)
- Low dropout voltage :80mV@Iout=40mA （Vout=3.3v）
- Output voltage accuracy： ±2％
- Maximum output current：250mA （within max.power dissipation,Vout=3.3V）
- Low temperature coefficient
- Package ：SOT23-3 、TO-92 、SOT89-3

Selection Guide

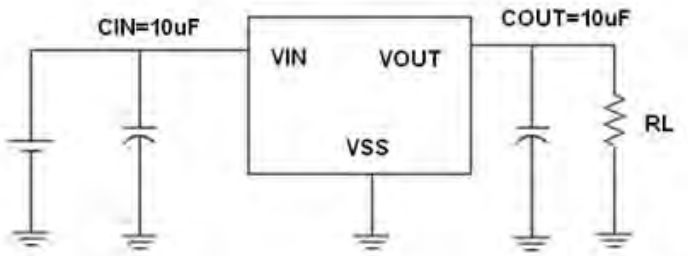
HK 7 3 X XX X X

- Environment mark
- Package：
  e.g.：M3-SOT23-3
  P-SOT89-3
  T-TO92
- Output Voltage
  e.g.：25-2.5V
  30-3.0V
  33-3.3V
  36-3.6V
  44-4.4V
  50-5.0V
- Function
  e.g.:A- no"CE"
- Product Type
- Product Series
- HK

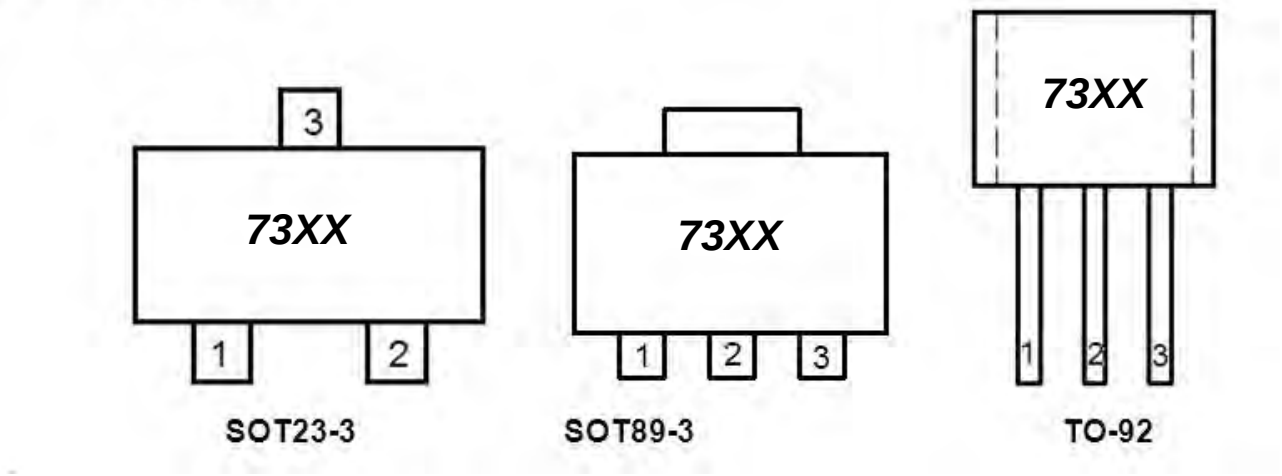
Typical Application

- Cameras, video recorders
- Voltage regulator for microprocessor
- Voltage regulator for LAN cards
- Wireless communication equipment
- Audio/Video equipment

Typical Application Circuit



Pin Configuration



Pin Assignment

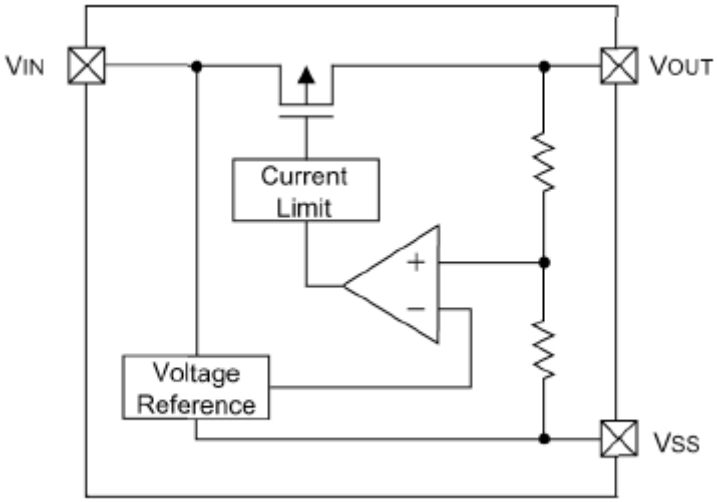
HK73XX

Pin Number		Pin Name	Functions
SOT89-3/TO-92	SOT23-3		
1	1	V_{SS}	Ground
2	3	V_{IN}	Input
3	2	V_{OUT}	Output

Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		V_{IN}	18	V
Output Voltage		V_{OUT}	Vss-0.3～V_{IN} +0.3	V
Output Current		Iout	250	mA
Operating Temperature Range		T_{OPR}	-40～＋85	℃
Storage Temperature Range		T_{STG}	－40～＋125	℃
Power Dissipation	SOT89-3	P_D	500	mW
	TO-92		500	
	SOT23-3		300	

Block Diagram



Electrical Characteristics

HK7330

(V_{IN}= V_{OUT}+1.0V，C_{IN}=C_L=10uF，Ta=25^{O}C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=40mA, V_{IN}=Vout+1V	X 0.98	V_{OUT} (T) (Note 1)	X 1.02	V
Input Voltage	V_{IN}				18	V
Maximum Output Voltage	I_{OUT} _max	V_{IN}=Vout+1V	250			mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤60mA		15	40	mV
Dropout Voltage (Note 3)	V_{dif}	I_{OUT} =40mA		80		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		3	4	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤18V		0.1	0.2	%/V
△VOUT/△Ta	Temperature Coefficient	V_{IN}=Vout+1V, I_{OUT} =40mA -40℃<Ta<85℃		±0.7		mV/℃

HK7340

(V_{IN}= V_{OUT}+1.0V，C_{IN}=C_L=10uF，Ta=25^{O}C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=40mA, V_{IN}=Vout+1V	X 0.98	V_{OUT} (T) (Note 1)	X 1.02	V
Input Voltage	V_{IN}				18	V
Maximum Output Voltage	I_{OUT} _max	V_{IN}=Vout+1V	250			mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤60mA		15	40	mV
Dropout Voltage (Note 3)	V_{dif}	I_{OUT} =40mA		70		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		3	4	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤18V		0.1	0.2	%/V
△VOUT/△Ta	Temperature Coefficient	V_{IN}=Vout+1V, I_{OUT} =40mA -40℃<Ta<85℃		±0.7		mV/℃

Note ：

1. V_{OUT} (T) ： Specified Output Voltage

2.V_{OUT} (E) ：Effective Output Voltage (ie. The output voltage when “V_{OUT} (T)+1.0V”is provided at the Vin pin while maintaining a certain Iout value.)

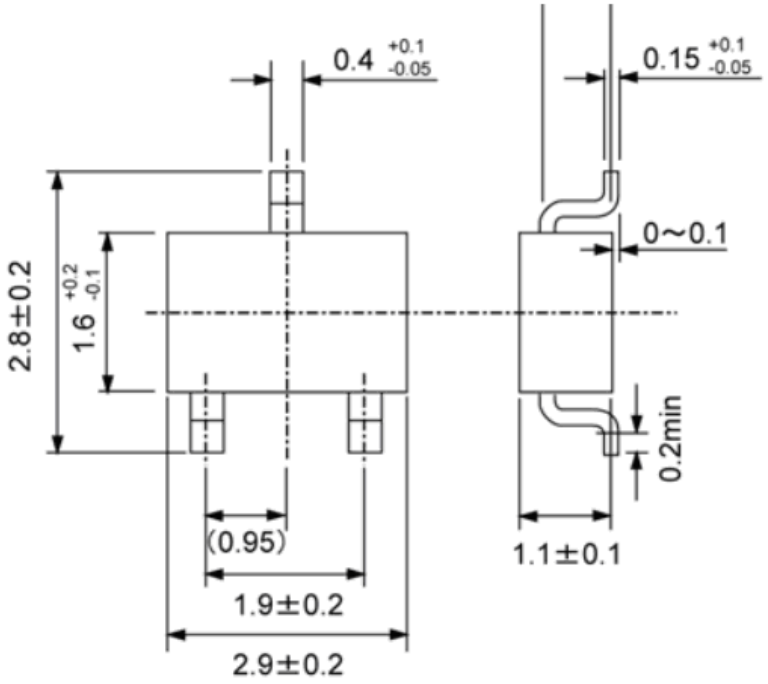
3.V_{DIF}： V_{IN1} –V_{OUT} (E)’

V_{IN1} ： The input voltage when V_{OUT}(E)’ appears as input voltage is gradually decreased.

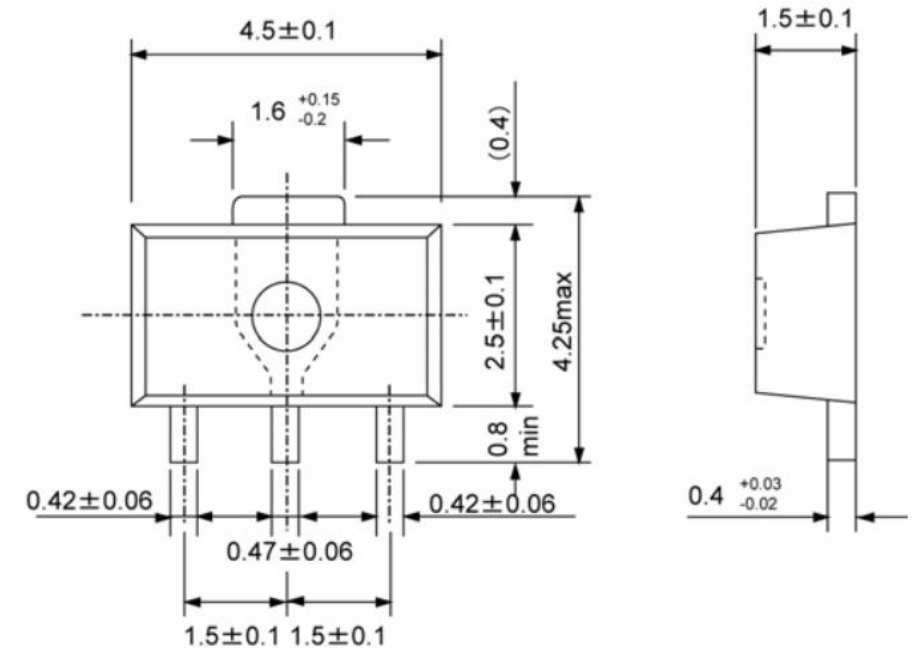
V_{OUT} (E)’=A voltage equal to 98% of the output voltage whenever an amply stabilized Iout and {V_{OUT} (T)+1.0V} is input.

Packaging Information:

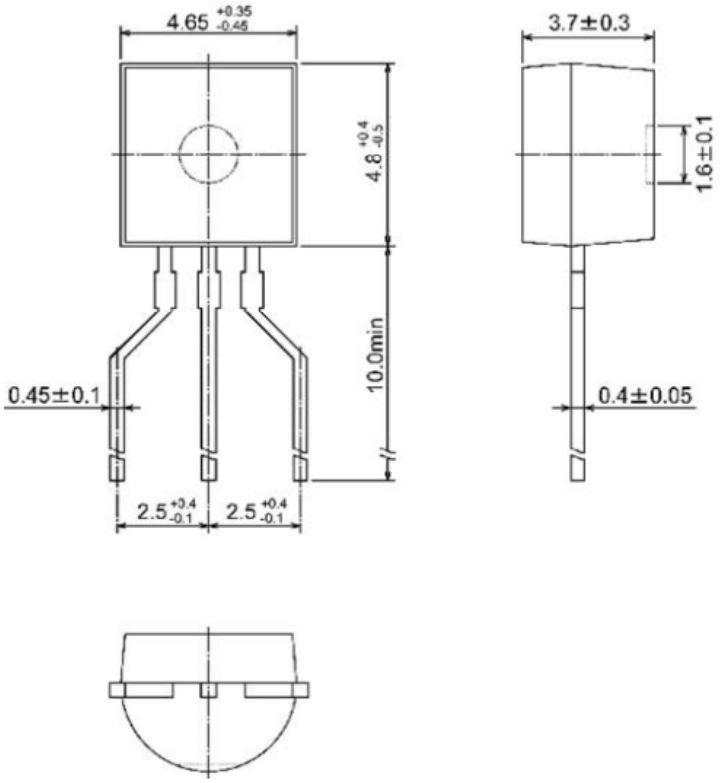
● SOT23-3



● SOT89-3



- TO-92


4.65 +0.35 -0.45
3.7±0.3
4.8 +0.4 -0.5
1.6±0.1
10.0min
0.45±0.1
0.4±0.05
2.5 +0.4 -0.1
2.5 +0.4 -0.1

- 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.