

## 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 differential is small. Low power consumption and high accuracy is achieved through CMOS technology. They allow input voltages as high as 12V.

### Features

- Ultra low quiescent current: 3.0uA(typ)
- High input voltage (up to 12v)
- Low dropout voltage :80mV@Iout=40mA (Vout=3.3v)
- Output voltage accuracy:  $\pm 2\%$
- 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

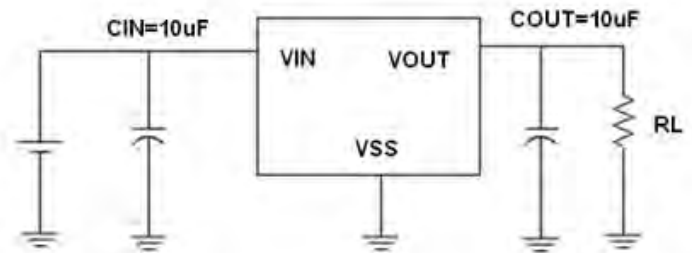
Product Series

HK

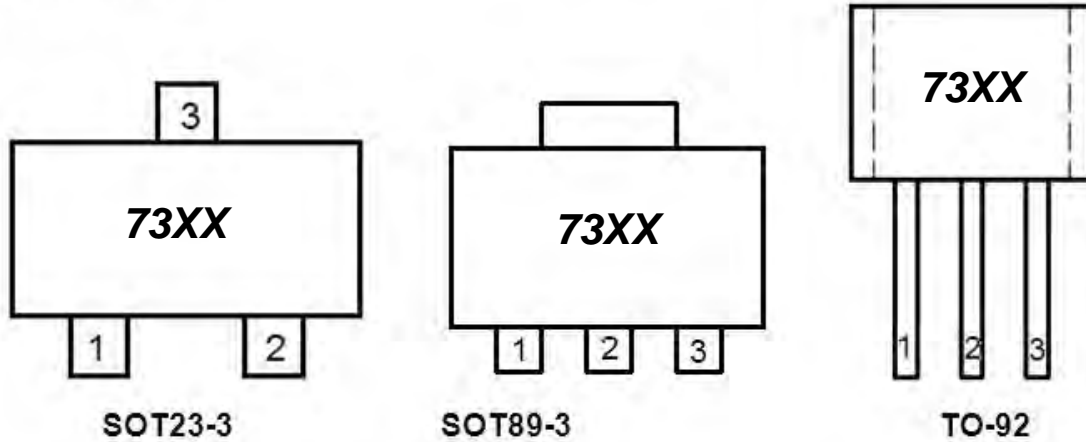
### Typical Application

- 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

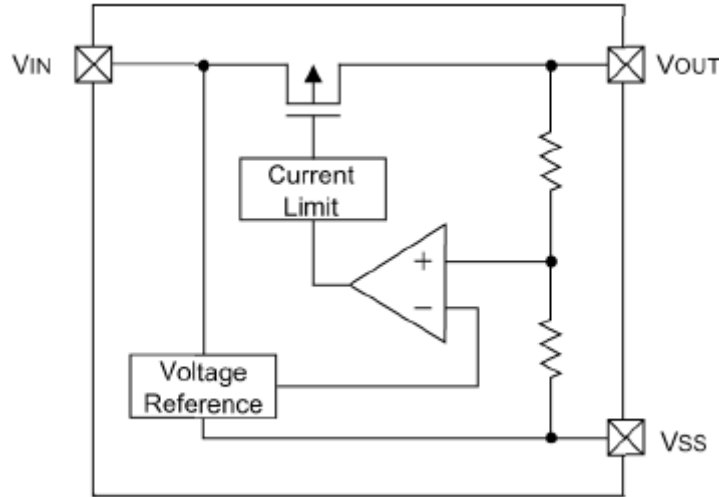
### HK73XX

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	$V_{OUT}$	$V_{SS}-0.3 \sim V_{IN} + 0.3$	V
Output Current	$I_{out}$	250	mA
Operating Temperature Range	$T_{OPR}$	-40 ~ +85	°C
Storage Temperature Range	$T_{STG}$	-40 ~ +125	°C
Power Dissipation	SOT89-3	500	mW
	TO-92	500	
	SOT23-3	300	

## Block Diagram



## Electrical Characteristics

### HK7330

( $V_{IN} = V_{OUT} + 1.0V$ ,  $C_{IN} = C_L = 10\mu F$ ,  $T_a = 25^\circ C$ , unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT} = 40mA$ , $V_{IN} = V_{out} + 1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	$V_{IN}$				18	V
Maximum Output Voltage	$I_{OUT\_max}$	$V_{IN} = V_{out} + 1V$	250			mA
Load Regulation	$\Delta V_{OUT}$	$V_{IN} = V_{out} + 1V$ , $1mA \leq I_{OUT} \leq 60mA$		15	40	mV
Dropout Voltage (Note 3)	$V_{dif}$	$I_{OUT} = 40mA$		80		mV
Supply Current	$I_{SS}$	$V_{IN} = V_{out} + 1V$		3	4	$\mu A$
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN}} \times V_{OUT}$	$I_{OUT} = 40mA$ $V_{out} + 1V \leq V_{IN} \leq 18V$		0.1	0.2	%/V
$\Delta V_{OUT} / \Delta T_a$	Temperature Coefficient	$V_{IN} = V_{out} + 1V$ , $I_{OUT} = 40mA$ $-40^\circ C < T_a < 85^\circ C$		$\pm 0.7$		mV/ $^\circ C$

### HK7340

( $V_{IN} = V_{OUT} + 1.0V$ ,  $C_{IN} = C_L = 10\mu F$ ,  $T_a = 25^\circ C$ , unless otherwise noted)

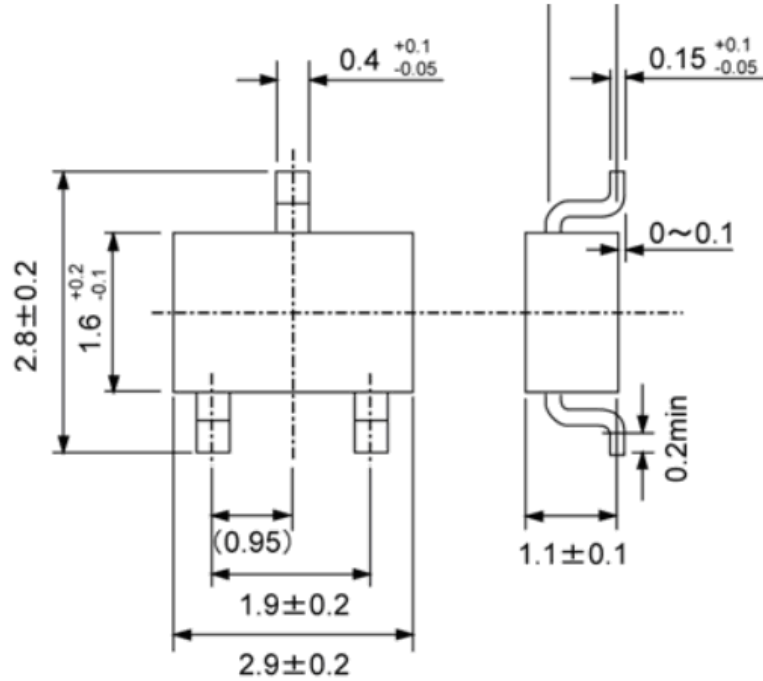
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT} = 40mA$ , $V_{IN} = V_{out} + 1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	$V_{IN}$				18	V
Maximum Output Voltage	$I_{OUT\_max}$	$V_{IN} = V_{out} + 1V$	250			mA
Load Regulation	$\Delta V_{OUT}$	$V_{IN} = V_{out} + 1V$ , $1mA \leq I_{OUT} \leq 60mA$		15	40	mV
Dropout Voltage (Note 3)	$V_{dif}$	$I_{OUT} = 40mA$		70		mV
Supply Current	$I_{SS}$	$V_{IN} = V_{out} + 1V$		3	4	$\mu A$
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN}} \times V_{OUT}$	$I_{OUT} = 40mA$ $V_{out} + 1V \leq V_{IN} \leq 18V$		0.1	0.2	%/V
$\Delta V_{OUT} / \Delta T_a$	Temperature Coefficient	$V_{IN} = V_{out} + 1V$ , $I_{OUT} = 40mA$ $-40^\circ C < T_a < 85^\circ C$		$\pm 0.7$		mV/ $^\circ C$

Note :

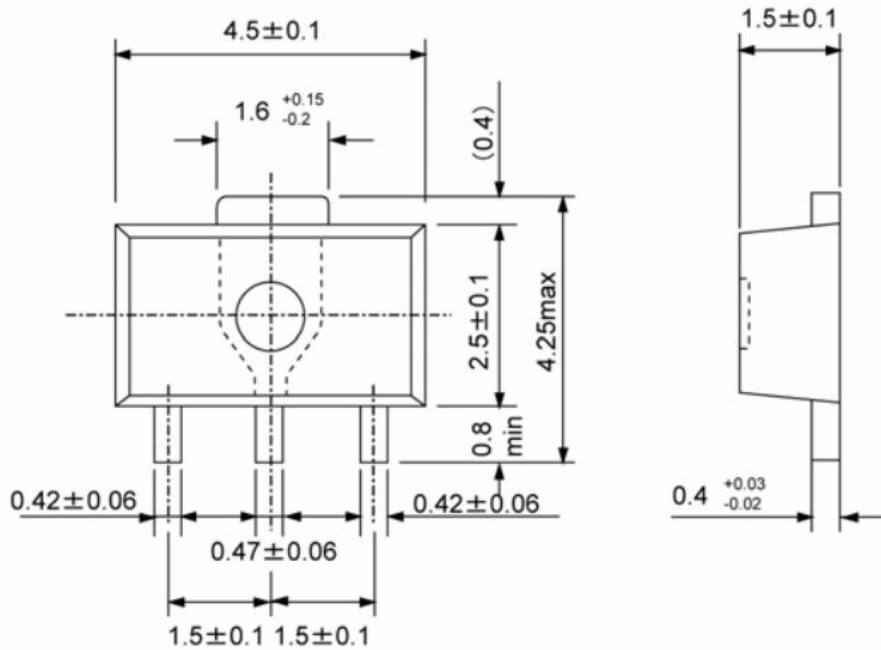
- $V_{OUT(T)}$  : Specified Output Voltage
- $V_{OUT(E)}$  : Effective Output Voltage ( ie. The output voltage when " $V_{OUT(T)} + 1.0V$ " is provided at the Vin pin while maintaining a certain Iout value.)
- $V_{DIF} = V_{IN1} - V_{OUT(E)}$   
 $V_{IN1}$  : The input voltage when  $V_{OUT(E)}$  appears 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:

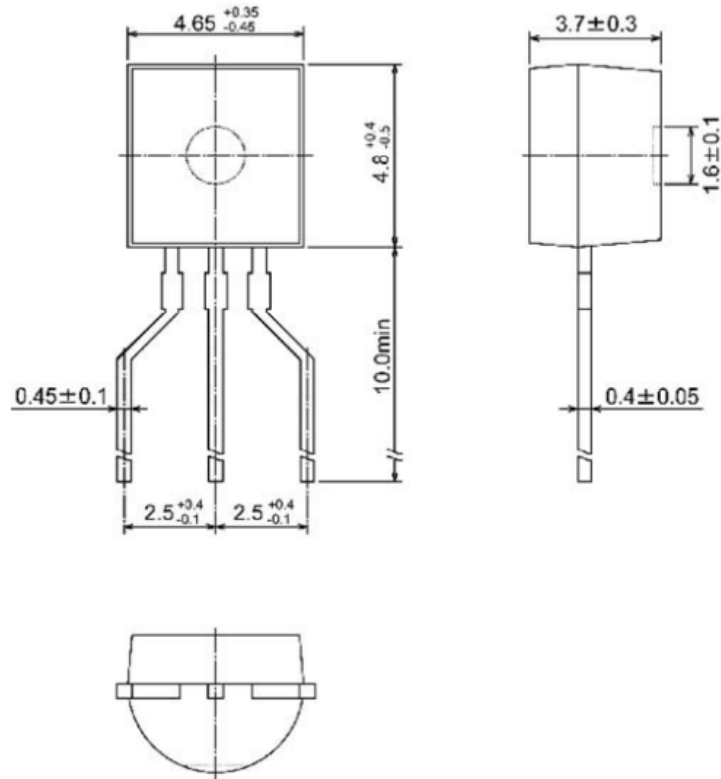
● SOT23-3



● SOT89-3



● TO-92





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HK73XX

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