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

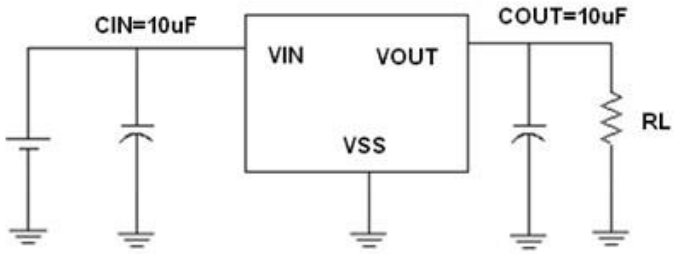
HK 7 3 X XX X X

- 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

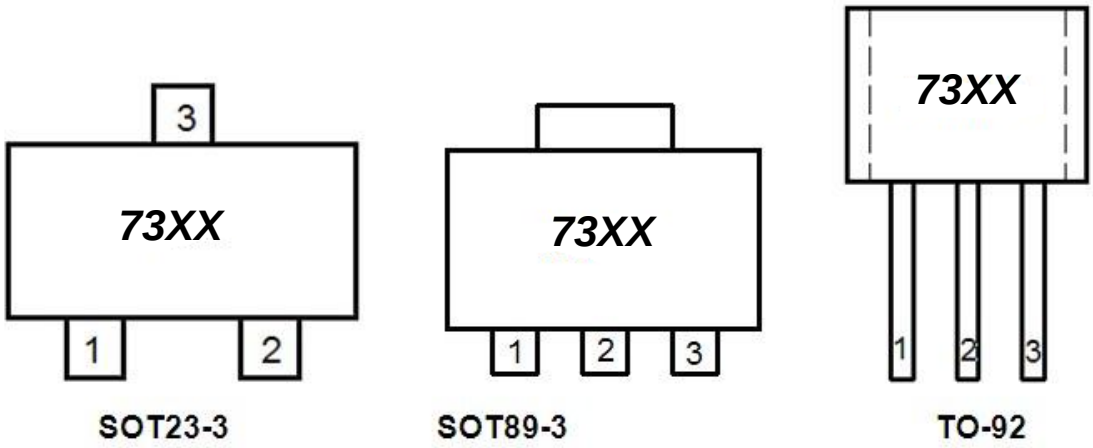
Typical Application

- 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

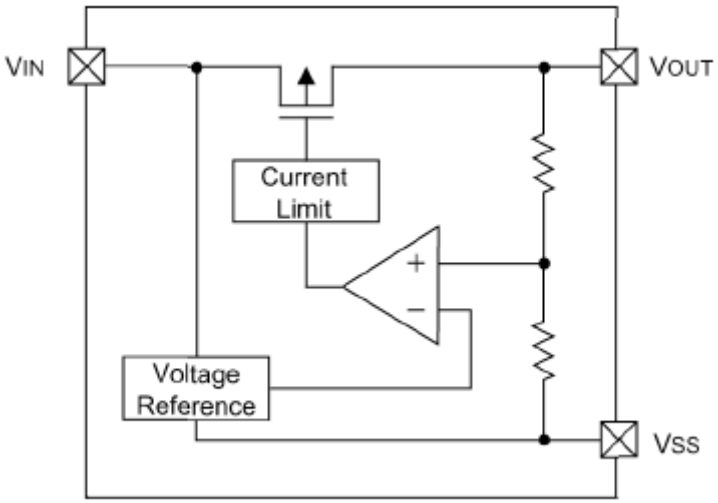
HK73XX

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.)

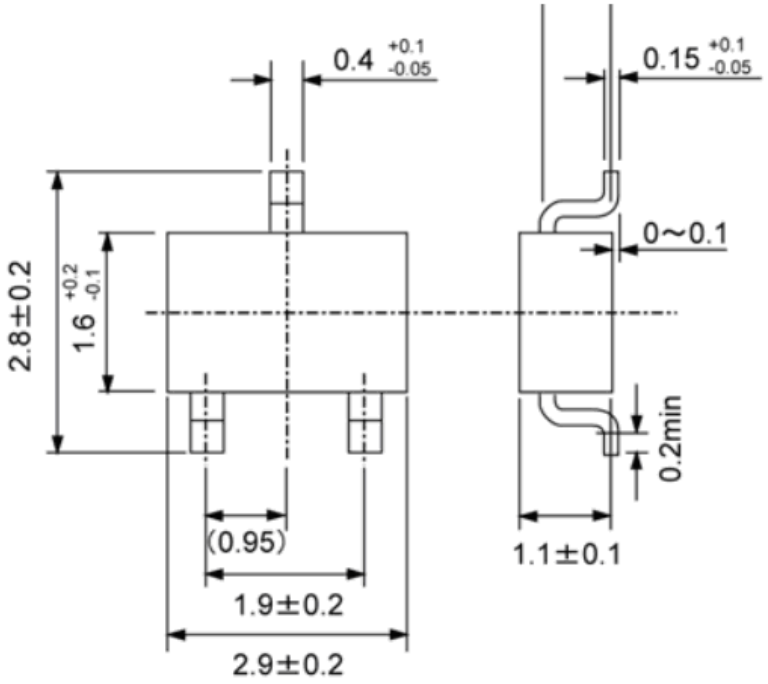
3.V_{DIF}： V_{IN1} –V_{OUT} (E)’

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

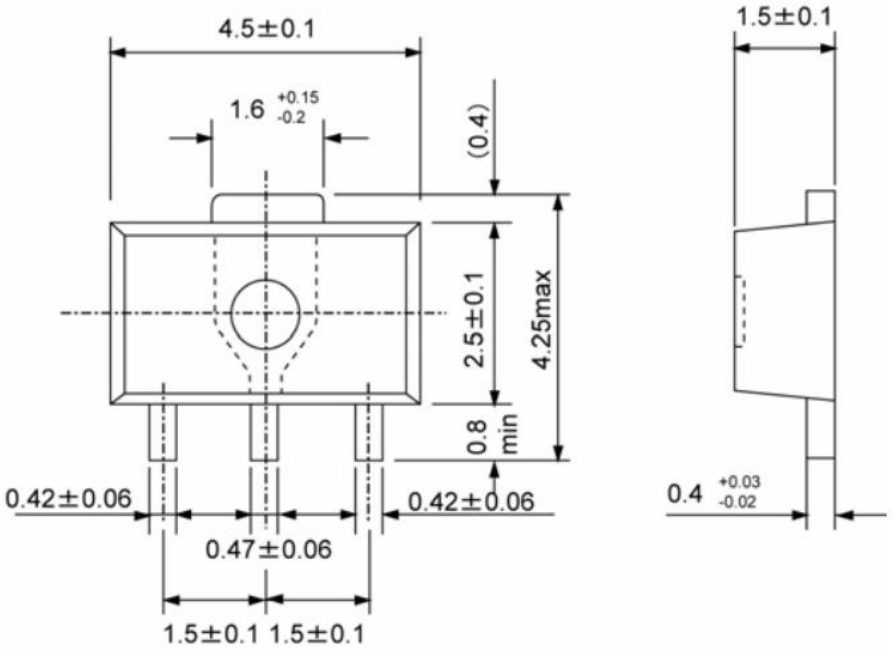
V_{OUT} (E)’=A voltage equal to 98% of the output voltage whenever an amply stabilized Iout and {V_{OUT} (T)+1.0V} is input.

Packaging Information:

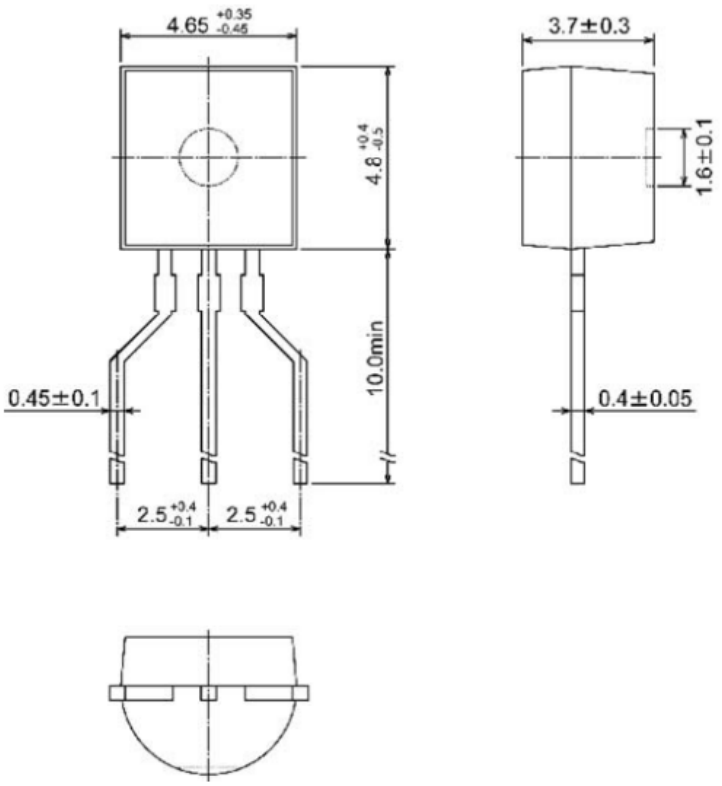
● SOT23-3



● 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

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