HT73XX-A series

LDO linear regulator

Product introduction

HT73XX-A series is a positive voltage regulator circuit with low voltage difference, high precision output voltage and ultra-low power consumption current developed by practical CMOS technology.Due to the built-in low on state resistance transistor, so the output voltage difference is low, and it has high input voltage bearing capacity. The maximum working voltage can reach 12V, which is suitable for the application circuit requiring high voltage withstand.

Product features

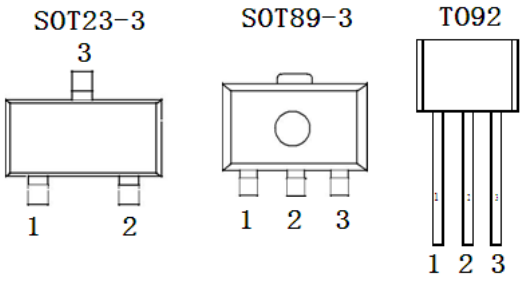
- High accuracy of output voltage: accuracy ± 3%
- Ultra low power consumption current: typical value 3ua
- Low output voltage temperature drift: 50 ppm / ℃
- High input withstand voltage: increase to 12V and keep output voltage stable
- Package form: TO-92, sot89-3, sot23-3

Product use

- Regulated power supply using battery powered equipment
- Stabilized power supply for toys
- Stabilized power supply for portable medical instruments
- Stabilized power supply of communication equipment
- Regulated power supply for mobile phone

Package form and pin function definition

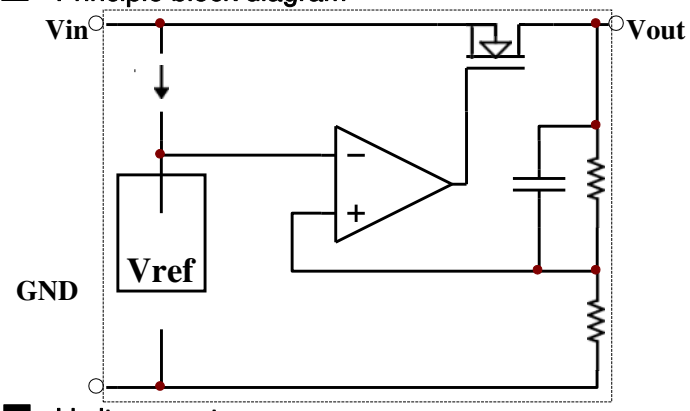
Pin No			Pin definition	Function description
TO-92	SOT89-3	SOT23-3		
1	1	1	GND	Chip ground terminal
2	2	3	VIN	Start input
3	3	2	VOUT	Chip output



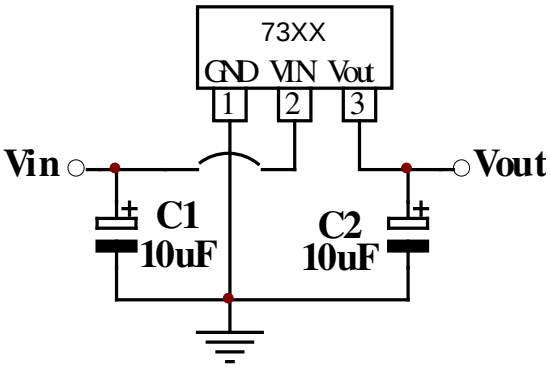
Model selection

Name	Model	Maximum input voltage (V)	Output voltage (V)	Tolerance	Packaging
HT73XX-A	HT7318-A	12	1.8	±3%	TO92 SOT89-3 SOT23-3
	HT7325-A	12	2.5	±3%	
	HT7327-A	12	2.7	±3%	
	HT7330-A	12	3.0	±3%	
	HT7333-A	12	3.3	±3%	
	HT7336-A	12	3.6	±3%	
	HT7350-A	12	5.0	±3%	

Principle block diagram



Application circuit



Limit parameter

Project	Symbol	Parameter	Limit value	Company
Voltage	VIN	Maximum input voltage	15	V
Power waste	PD	power waste	400	mW
Temperature	Tw	working temperature	-25 - 70	℃
	Tc	Storage temperature	-50 - 125	℃
	Th	welding temperature	260	℃,10s

electrical properties

◆ HT7318-A(T_{OPT}=25℃)

Symbol	Parameter	Test conditions	Minimum value	Typical value	Maximum	Company
V_{OUT}	output voltage	V_{IN}=2.8V, I_{OUT}=40mA	1.746	1.8	1.854	V
I_{OUT}	Output current	V_{IN}=2.8V, V_{OUT}≥1.62V	150	--	—	mA
$\triangle V_{OUT}$	Load regulation	V_{IN}=2.8V, 1mA≤I_{OUT} ≤60mA	—	45	90	mV
V_{DIF}	Drop voltage	I_{OUT}=40mA	—	170	—	mV
I_{SS}	Quiescent current	Vin = 2.8V, no load	—	2	3	μA
$\Delta V_{OUT}/(\Delta V_{IN}*V_{OUT})$	Line Regulation	2.8V≤V_{IN}≤12V, I_{OUT}=40mA	—	0.2	0.3	%/V
V_{IN}	input voltage	—	—	—	12	V
ΔV_{OUT} /ΔTa	temperature coefficient	V_{IN}=2.8V, I_{OUT}=40mA, 0℃≤Ta≤85℃	—	±0.7	—	mV/℃

◆ HT7325-A (T_{OPT}=25℃)

Symbol	Parameter	Test conditions	Minimum value	Typical value	Maximum	Company
V_{OUT}	output voltage	V_{IN}=3.5V，I_{OUT}=40mA	2.425	2.5	2.575	V
I_{OUT}	Output current	V_{IN}=3.5V，V_{OUT}≥2.25V	180	--	—	mA
$\triangle V_{OUT}$	Load regulation	V_{IN}=3.5V，1mA≤I_{OUT} ≤60mA	—	45	90	mV
V_{DIF}	Drop voltage	I_{OUT}=40mA	—	110	—	mV
I_{SS}	Quiescent current	Vin = 3.5V, no load	—	2	3	μA
$\Delta V_{OUT}/(\Delta V_{IN}*V_{OUT})$	Line Regulation	3.5V≤V_{IN}≤12V，I_{OUT}=40mA	—	0.2	0.3	%/V
V_{IN}	input voltage	—	—	—	12	V
ΔV_{OUT} /ΔTa	temperature coefficient	V_{IN}=3.5V，I_{OUT}=40mA，0℃≤Ta≤85℃	—	±0.7	—	mV/℃

◆ HT7327-A (T_{OPT}=25℃)

Symbol	Parameter	Test conditions	Minimum value	Typical value	Maximum	Company
V_{OUT}	output voltage	V_{IN}=3.7V，I_{OUT}=40mA	2.619	2.7	2.781	V
I_{OUT}	Output current	V_{IN}=3.7V，V_{OUT}≥2.43V	200	--	—	mA
$\triangle V_{OUT}$	Load regulation	V_{IN}=3.7V，1mA≤I_{OUT} ≤60mA	—	45	90	mV
V_{DIF}	Drop voltage	I_{OUT}=40mA	—	100	—	mV
I_{SS}	Quiescent current	Vin = 3.7V, no load	—	2	3	μA
$\Delta V_{OUT}/(\Delta V_{IN}*V_{OUT})$	Line Regulation	3.7V≤V_{IN}≤12V，I_{OUT}=40mA	—	0.2	0.3	%/V
V_{IN}	input voltage	—	—	—	12	V
ΔV_{OUT} /ΔTa	temperature coefficient	V_{IN}=3.7V，I_{OUT}=40mA，0℃≤Ta≤85℃	—	±0.7	—	mV/℃

◆ 7330-A (T_{OPT}=25℃)

Symbol	Parameter	Test conditions	Minimum value	Typical value	Maximum	Company
V_{OUT}	output voltage	V_{IN}=4V，I_{OUT}=40mA	2.91	3	3.09	V
I_{OUT}	Output current	V_{IN}=4V，V_{OUT}≥2.7V	250	--	—	mA
$\triangle V_{OUT}$	Load regulation	V_{IN}=4V，1mA≤I_{OUT} ≤60mA	—	45	90	mV
V_{DIF}	Drop voltage	I_{OUT}=40mA	—	95	—	mV
I_{SS}	Quiescent current	No load, VIN = 4V	—	2	3	μA
$\Delta V_{OUT}/(\Delta V_{IN}*V_{OUT})$	Line Regulation	4V≤V_{IN}≤12V，I_{OUT}=40mA	—	0.2	0.3	%/V
V_{IN}	input voltage	—	—	—	12	V
ΔV_{OUT} /ΔTa	temperature coefficient	V_{IN}=4V，I_{OUT}=40mA，0℃≤Ta≤85℃	—	±0.7	—	mV/℃

◆ HT7333-A (T_{OPT}=25℃)

Symbol	Parameter	Test conditions	Minimum value	Typical value	Maximum	Company
V_{OUT}	output voltage	V_{IN}=4.3V， I_{OUT}=40mA	3.201	3.3	3.399	V
I_{OUT}	Output current	V_{IN}=4.3V， V_{OUT}≥2.97V	250	--	—	mA
$\triangle V_{OUT}$	Load regulation	V_{IN}=4.3V, 1mA≤I_{OUT} ≤60mA	—	45	90	mV
V_{DIF}	Drop voltage	I_{OUT}=40mA	—	90	—	mV
I_{SS}	Quiescent current	Vin = 4.3v, no load	—	2	3	μA
ΔV_{OUT} /(ΔV_{IN} * V_{OUT})	Line Regulation	4.3V≤V_{IN}≤12V, I_{OUT}=40mA	—	0.2	0.3	%/V
V_{IN}	input voltage	—	—	—	12	V
ΔV_{OUT} /ΔTa	temperature coefficient	V_{IN}=4.3V， I_{OUT}=40mA, 0℃≤Ta≤85℃	—	±0.7	—	mV/℃

◆ HT7336-A (T_{OPT}=25℃)

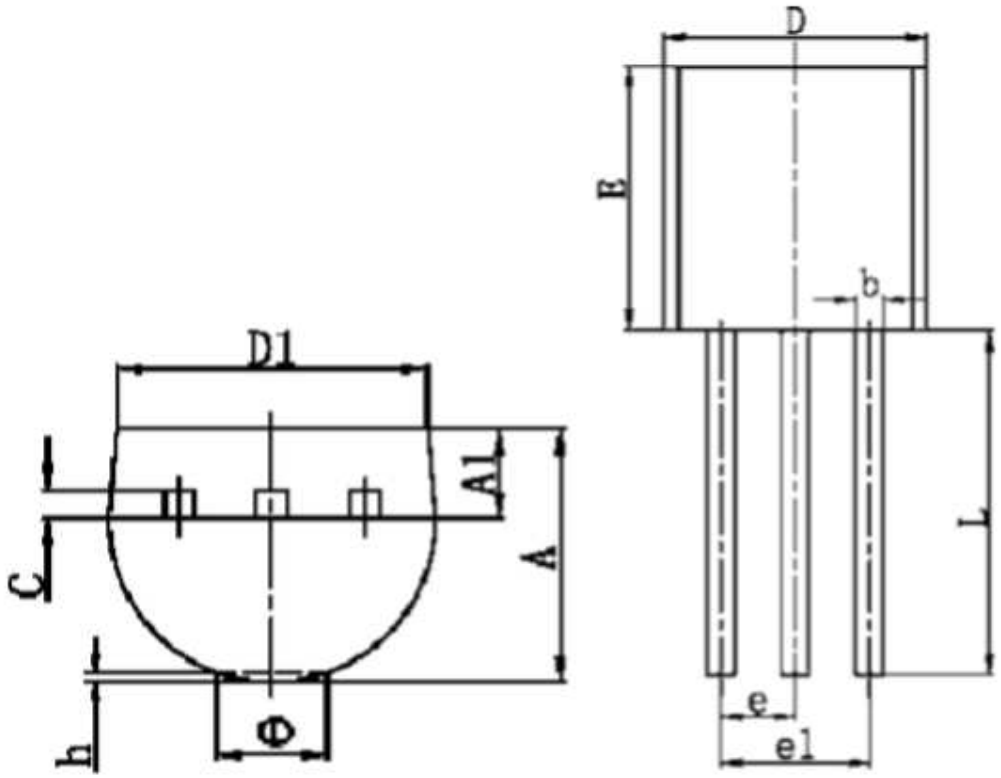
Symbol	Parameter	Test conditions	Minimum value	Typical value	Maximum	Company
V_{OUT}	output voltage	V_{IN}=4.5V， I_{OUT}=40mA	3.492	3.6	3.708	V
I_{OUT}	Output current	V_{IN}=4.5V， V_{OUT}≥3.15V	250	--	—	mA
$\triangle V_{OUT}$	Load regulation	V_{IN}=4.5V, 1mA≤I_{OUT} ≤60mA	—	45	90	mV
V_{DIF}	Drop voltage	I_{OUT}=40mA	—	80	—	mV
I_{SS}	Quiescent current	Vin = 4.5V, no load	—	2	3	μA
ΔV_{OUT}/(ΔV_{IN}*V_{OUT})	Line Regulation	4.5V≤V_{IN}≤12V, I_{OUT}=40mA	—	0.2	0.3	%/V
V_{IN}	input voltage	—	—	—	12	V
ΔV_{OUT} /ΔTa	temperature coefficient	V_{IN}=4.5V， I_{OUT}=40mA, 0℃≤Ta≤85℃	—	±0.7	—	mV/℃

◆ HT7350-A (T_{OPT}=25℃)

Symbol	Parameter	Test conditions	Minimum value	Typical value	Maximum	Company
V_{OUT}	output voltage	V_{IN}=6V， I_{OUT}=40mA	4.85	5	5.15	V
I_{OUT}	Output current	V_{IN}=6V， V_{OUT}≥4.5V	250	--	—	mA
$\triangle V_{OUT}$	Load regulation	V_{IN}=6V, 1mA≤I_{OUT} ≤60mA	—	45	90	mV
V_{DIF}	Drop voltage	I_{OUT}=40mA	—	60	—	mV
I_{SS}	Quiescent current	Vin = 6V, no load	—	2	3	μA
ΔV_{OUT}/(ΔV_{IN}*V_{OUT})	Line Regulation	6V≤V_{IN}≤12V, I_{OUT}=40mA	—	0.2	0.3	%/V
V_{IN}	input voltage	—	—	—	12	V
ΔV_{OUT} /ΔTa	temperature coefficient	V_{IN}=6V， I_{OUT}=40mA, 0℃≤Ta≤85℃	—	±0.7	—	mV/℃

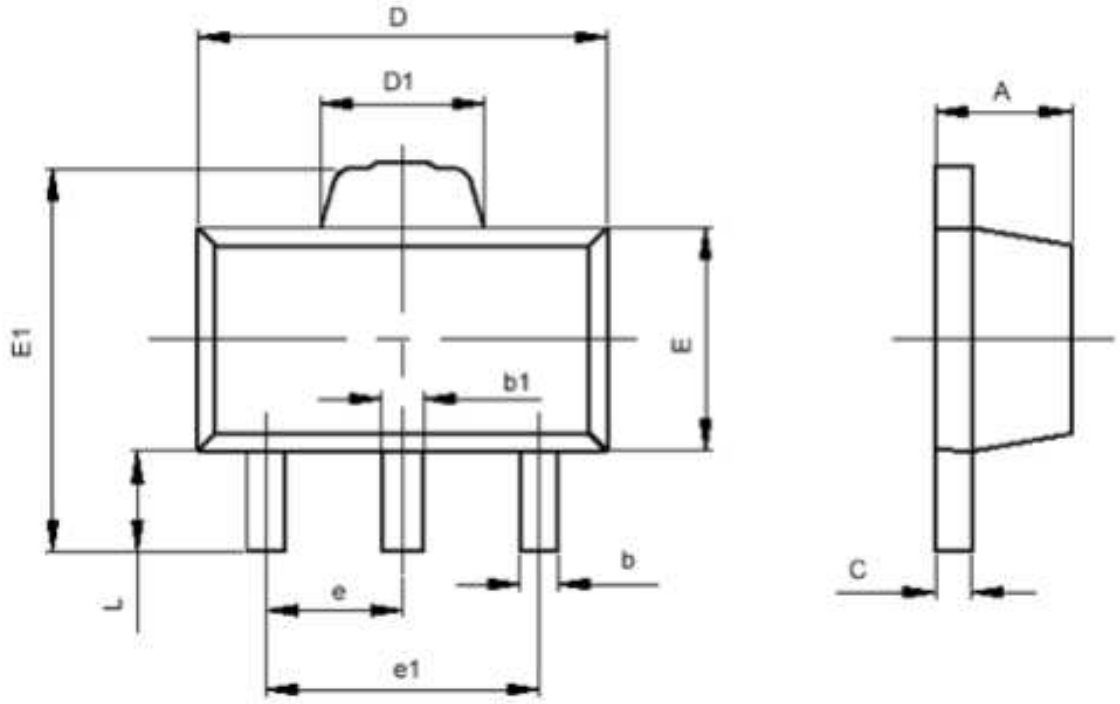
■ Encapsulation information

TO-92



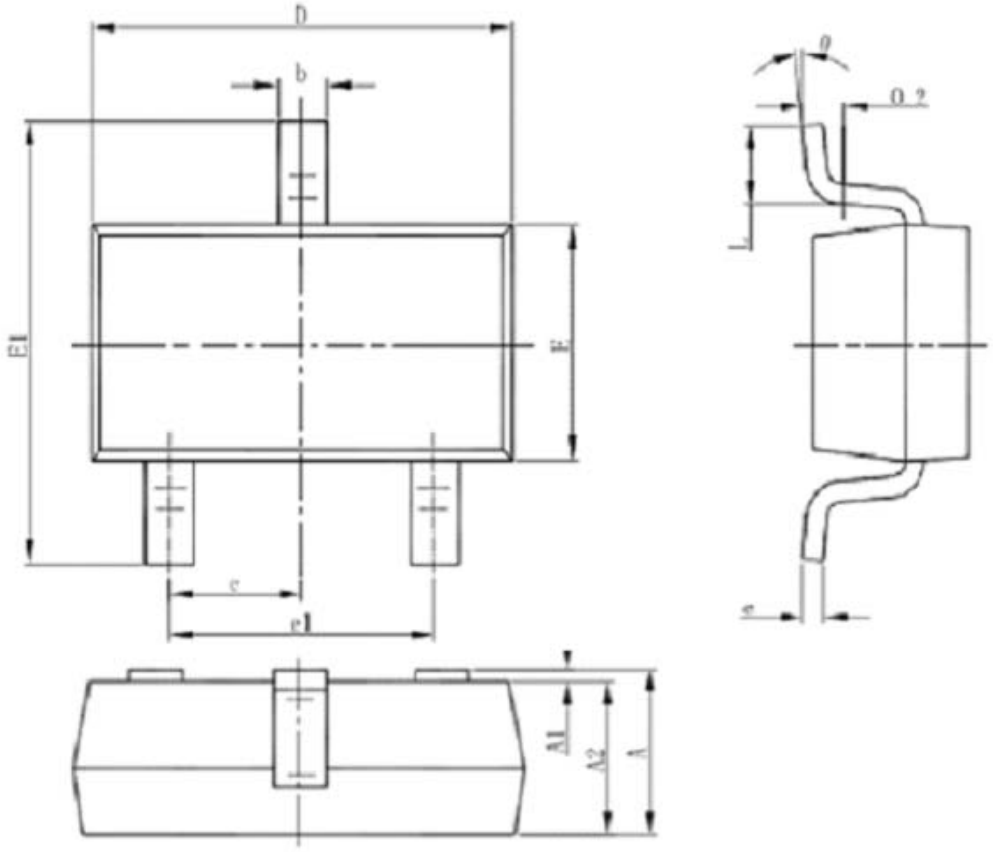
symbol	minimum value (mm)	maiximum(mm) value
A	3.300	3.700
A1	1.100	1.400
b	0.380	0.550
c	0.360	0.510
D	4.400	4.700
D1	3.430	
E	4.300	4.700
e	1.270 TYP	
e1	2.440	2.640
L	14.100	14.500
Φ		1.600
h	0.000	0.380

SOT-89-3



symbol	minimum value (mm)	maiximum value (mm)
A	1.400	1.600
b	0.320	0.520
b1	0.360	0.560
c	0.350	0.440
D	4.400	4.600
D1	1.400	1.800
E	2.300	2.600
E1	3.940	4.250
e	1.500TYP	
e1	2.900	3.100
L	0.900	1.100

SOT-23-3



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°