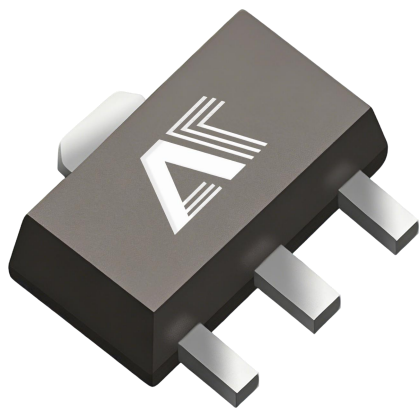




Three terminal low-power regulator

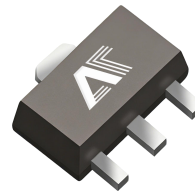
HT71XX-1

Product Data Sheet

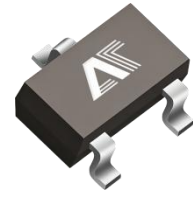
AOTE DCC
RELEASE

◆ Summary :

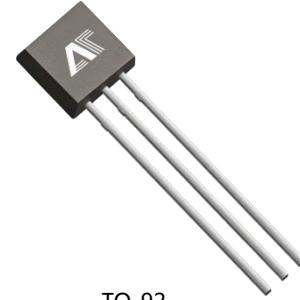
The HT71XX-1 series is a low-power high-voltage regulator manufactured using CMOS technology. The output current is 100mA and the maximum input voltage can reach 30V, with an output voltage range of 2.1V~5.0V. It has the characteristics of low voltage drop and low static current.



SOT-89



SOT-23-3



TO-92

◆ Product features

- Small Package: TO-92.SOT-89.SOT-23-3L
- low power consumption
- Low pressure drop
- Low temperature coefficient
- High current output
- High precision output voltage: tolerance of $\pm 2\%$

◆ Applications

- Power supply equipment such as batteries
- Various communication devices
- Audio/video equipment

◆ Model Selection

Product Name	Output voltage	Packing Specification	Package form
HT7121-1	2.1V	Tape and Reel, 1000	SOT-89 SOT-23-3 TO-92
HT7123-1	2.3V	Tape and Reel, 1000	
HT7125-1	2.5V	Tape and Reel, 1000	
HT7127-1	2.7V	Tape and Reel, 1000	
HT7130-1	3.0V	Tape and Reel, 1000	
HT7133-1	3.3V	Tape and Reel, 1000	
HT7136-1	3.6V	Tape and Reel, 1000	
HT7140-1	4.0V	Tape and Reel, 1000	
HT7144-1	4.4V	Tape and Reel, 1000	
HT7150-1	5.0V	Tape and Reel, 1000	

Note: "XX" represents the output voltage, -1 "is the internal version code, representing the HT75xx-1 series

◆ **Schematic diagram**

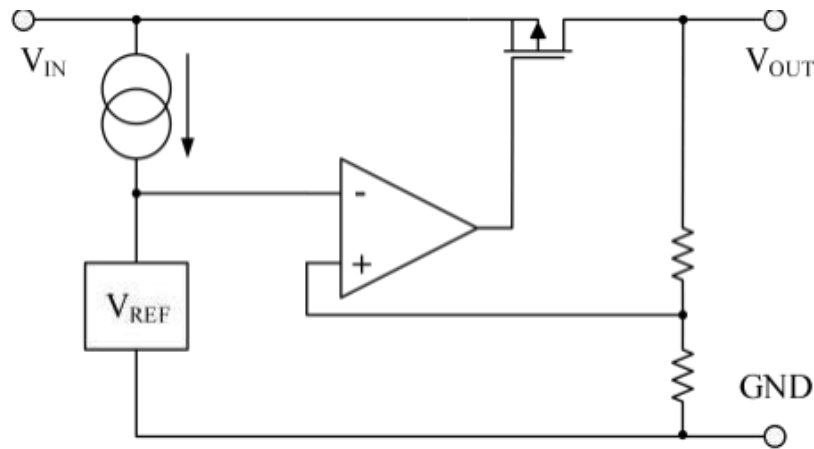


Figure 1.HT71XX schematic diagram

◆ **Pin description**

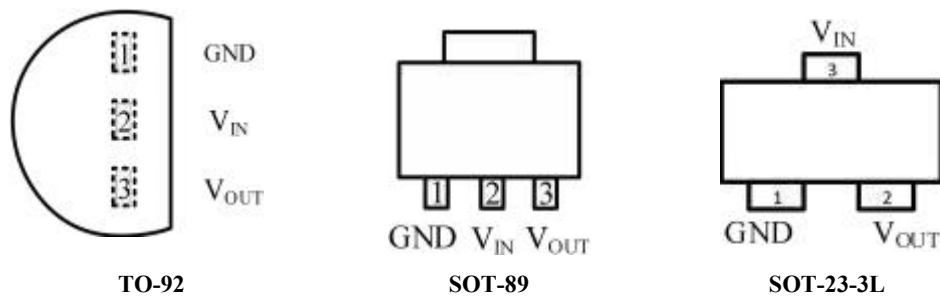


Figure 2.HT71XX Pin

Pin number			Symbol	Description
TO-92	SOT-89	SOT-23-3L		
1	1	1	GND	land
2	2	3	V _{IN}	Input pin
3	3	2	V _{OUT}	Output pin

◆ **limit parameter** (Unless otherwise specified, T_A=25 °C)

Parameter	Symbol	Scope	Unit
input voltage	VIN	-0.3 ~ +33	V
Maximum Power Consumption	PD	200	mW
Operating Temperature	TOPR	-20~+125	°C
Storage temperature	TSTG	-65~+150	°C

◆ Electrical parameters (Unless otherwise specified, $T_A=25\text{ }^{\circ}\text{C}$)

7121

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	$V_{IN} = V_{OUT}+2V$, $I_{OUT} = 10\text{mA}$	2.037	2.100	2.163	V
Output current	IOUT	$V_{IN} = V_{OUT}+2V$	60	100	-	mA
Load regulation	ΔV_{OUT}	$V_{IN} = V_{OUT}+2V$, $1\text{mA} \leq I_{OUT} \leq 50\text{mA}$	-	60	100	mV
Dropout voltage	VDIF	$I_{OUT} = 1\text{mA}$	-	100	-	mV
Static current	IQ	$V_{IN} = V_{OUT}+2V$, no-load	-	2	5	uA
Linear adjustment rate	$\Delta V_{OUT} / (\Delta V_{IN} * V_{OUT})$	$V_{OUT}+1V \leq V_{IN} \leq 30V$, $I_{OUT} = 1\text{mA}$	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	$\Delta V_{OUT} / \Delta T_A$	$I_{OUT} = 10\text{mA}$, $-20 \sim +125^{\circ}\text{C}$	-	± 0.45	-	mV/ $^{\circ}\text{C}$

7123

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	$V_{IN} = V_{OUT}+2V$, $I_{OUT} = 10\text{mA}$	2.231	2.300	2.369	V
Output current	IOUT	$V_{IN} = V_{OUT}+2V$	60	100	-	mA
Load regulation	ΔV_{OUT}	$V_{IN} = V_{OUT}+2V$, $1\text{mA} \leq I_{OUT} \leq 50\text{mA}$	-	60	100	mV
Dropout voltage	VDIF	$I_{OUT} = 1\text{mA}$	-	100	-	mV
Static current	IQ	$V_{IN} = V_{OUT}+2V$, no-load	-	2	5	uA
Linear adjustment rate	$\Delta V_{OUT} / (\Delta V_{IN} * V_{OUT})$	$V_{OUT}+1V \leq V_{IN} \leq 30V$, $I_{OUT} = 1\text{mA}$	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	$\Delta V_{OUT} / \Delta T_A$	$I_{OUT} = 10\text{mA}$, $-20 \sim +125^{\circ}\text{C}$	-	± 0.45	-	mV/ $^{\circ}\text{C}$

7125

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOUT = 10mA	2.425	2.500	2.575	V
Output current	IOUT	VIN = VOUT+2V	60	100	-	mA
Load regulation	ΔV_{OUT}	VIN = VOUT+2V, 1 mA ≤ IOUT ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOUT = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} * V_{OUT})}$	VOUT+1V ≤ VIN ≤ 30V, IOUT = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	$\Delta V_{OUT} / \Delta T_a$	IOUT = 10mA, -20 ~ +125°C	-	±0.45	-	mV/ °C

7127

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOUT = 10mA	2.619	2.700	2.781	V
Output current	IOUT	VIN = VOUT+2V	60	100	-	mA
Load regulation	ΔV_{OUT}	VIN = VOUT+2V, 1 mA ≤ IOUT ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOUT = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} * V_{OUT})}$	VOUT+1V ≤ VIN ≤ 30V, IOUT = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	$\Delta V_{OUT} / \Delta T_a$	IOUT = 10mA, -20 ~ +125°C	-	±0.45	-	mV/°C

7130

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOU _T = 10mA	2.910	3.000	3.090	V
Output current	IOU _T	VIN = VOUT+2V	60	100	-	mA
Load regulation	Δ VOUT	VIN = VOUT+2V, 1 mA ≤ IOU _T ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOU _T = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	Δ VOUT / (Δ VIN * VOUT)	VOUT+1V ≤ VIN ≤ 30V, IOU _T = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	Δ VOUT / Δ Ta	IOU _T = 10mA, -20 ~ +125°C	-	±0.45	-	mV/ °C

7133

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOU _T = 10mA	3.201	3.300	3.399	V
Output current	IOU _T	VIN = VOUT+2V	60	100	-	mA
Load regulation	Δ VOUT	VIN = VOUT+2V, 1 mA ≤ IOU _T ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOU _T = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	Δ VOUT / (Δ VIN * VOUT)	VOUT+1V ≤ VIN ≤ 30V, IOU _T = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	Δ VOUT / Δ Ta	IOU _T = 10mA, -20 ~ +125°C	-	±0.5	-	mV/°C

7136

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOUT = 10mA	3.492	3.600	3.708	V
Output current	IOUT	VIN = VOUT+2V	60	100	-	mA
Load regulation	ΔV_{OUT}	VIN = VOUT+2V, 1 mA ≤ IOUT ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOUT = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} * V_{OUT})}$	VOUT+1V ≤ VIN ≤ 30V, IOUT = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	$\Delta V_{OUT} / \Delta T_a$	IOUT = 10mA, -20 ~ +125°C	-	±0.6	-	mV/ °C

7140

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOUT = 10mA	3.880	4.000	4.120	V
Output current	IOUT	VIN = VOUT+2V	60	100	-	mA
Load regulation	ΔV_{OUT}	VIN = VOUT+2V, 1 mA ≤ IOUT ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOUT = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} * V_{OUT})}$	VOUT+1V ≤ VIN ≤ 30V, IOUT = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	$\frac{\Delta V_{OUT}}{\Delta T_a}$	IOUT = 10mA, -20 ~ +125°C	-	±0.45	-	mV/°C

7144

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOU _T = 10mA	4.268	4.400	4.532	V
Output current	IOU _T	VIN = VOUT+2V	60	100	-	mA
Load regulation	Δ VOUT	VIN = VOUT+2V, 1 mA ≤ IOU _T ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOU _T = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	Δ VOUT / (ΔVIN *VOUT)	VOUT+1V ≤ VIN ≤ 30V, IOU _T = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	Δ VOUT / Δ Ta	IOU _T = 10mA, -20 ~ +125°C	-	±0.7	-	mV/ °C

7150

Parameter	symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	VOUT	VIN = VOUT+2V, IOU _T = 10mA	4.850	5.000	5.150	V
Output current	IOU _T	VIN = VOUT+2V	60	100	-	mA
Load regulation	Δ VOUT	VIN = VOUT+2V, 1 mA ≤ IOU _T ≤ 50 mA	-	60	100	mV
Dropout voltage	VDIF	IOU _T = 1mA	-	100	-	mV
Static current	IQ	VIN = VOUT+2V , no-load	-	2	5	uA
Linear adjustment rate	Δ VOUT / (ΔVIN *VOUT)	VOUT+1V ≤ VIN ≤ 30V, IOU _T = 1mA	-	0.2	-	%/V
input voltage	VIN	-	-	-	30	V
temperature coefficient	Δ VOUT / Δ Ta	IOU _T = 10mA, -20 ~ +125°C	-	±0.75	-	mV/°C

◆ **Typical application routes**

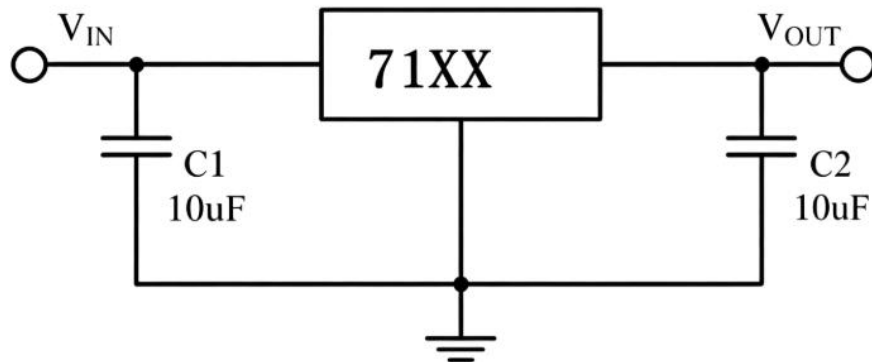
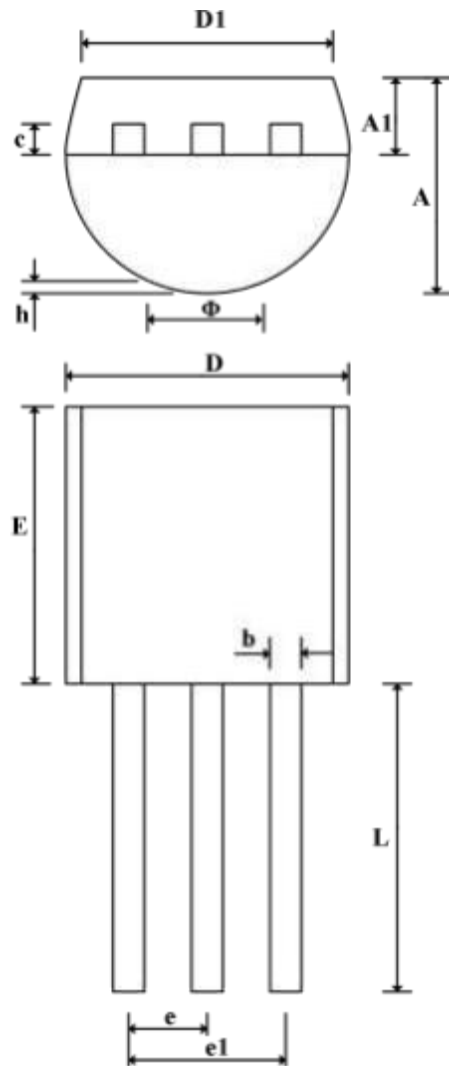


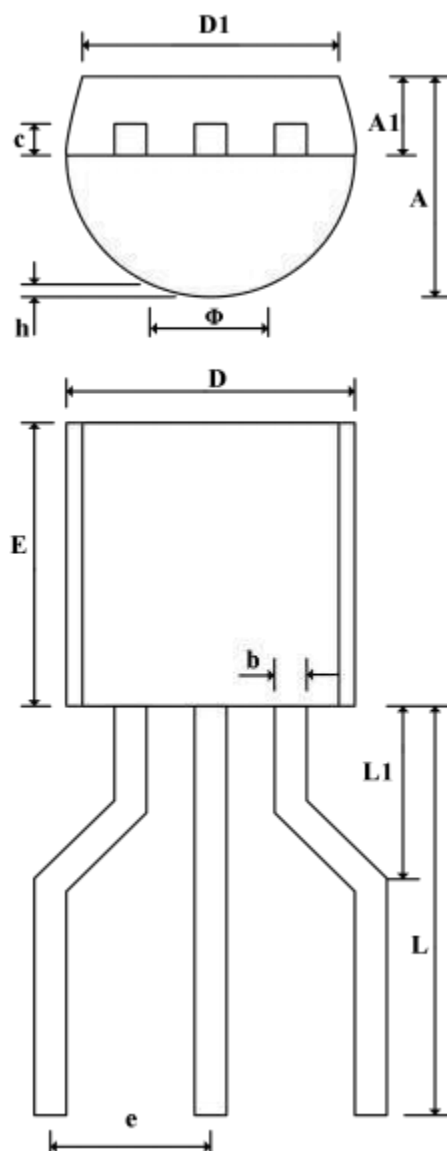
Figure 3. Basic Circuit

♦ Packaging specifications and dimensions

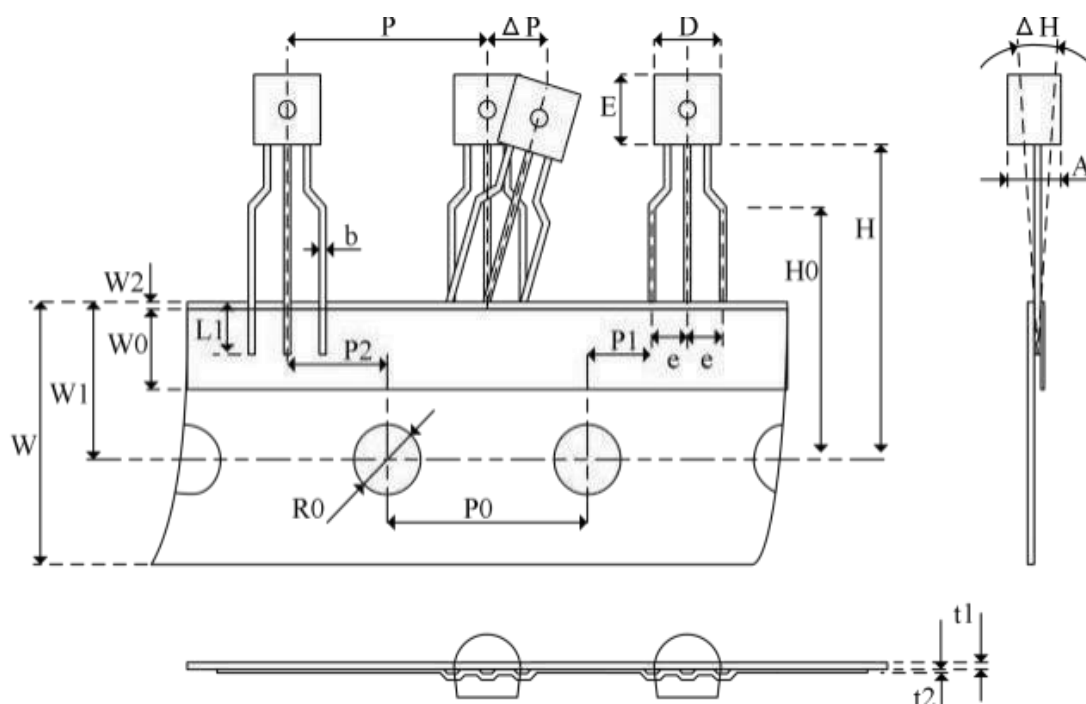
TO-92



symbol	Dimensions (unit: mm)		symbol	Dimensions (unit: mm)	
	Min	Max		Min	Max
A	3.300	3.700	E	4.300	4.700
A1	1.100	1.400	e	1.270 (TYP)	
b	0.360	0.560	e1	2.440	2.640
c	0.280	0.510	L	14.100	14.500
D	4.300	4.700	Φ		1.600
D1	3.430		h	0.000	0.380

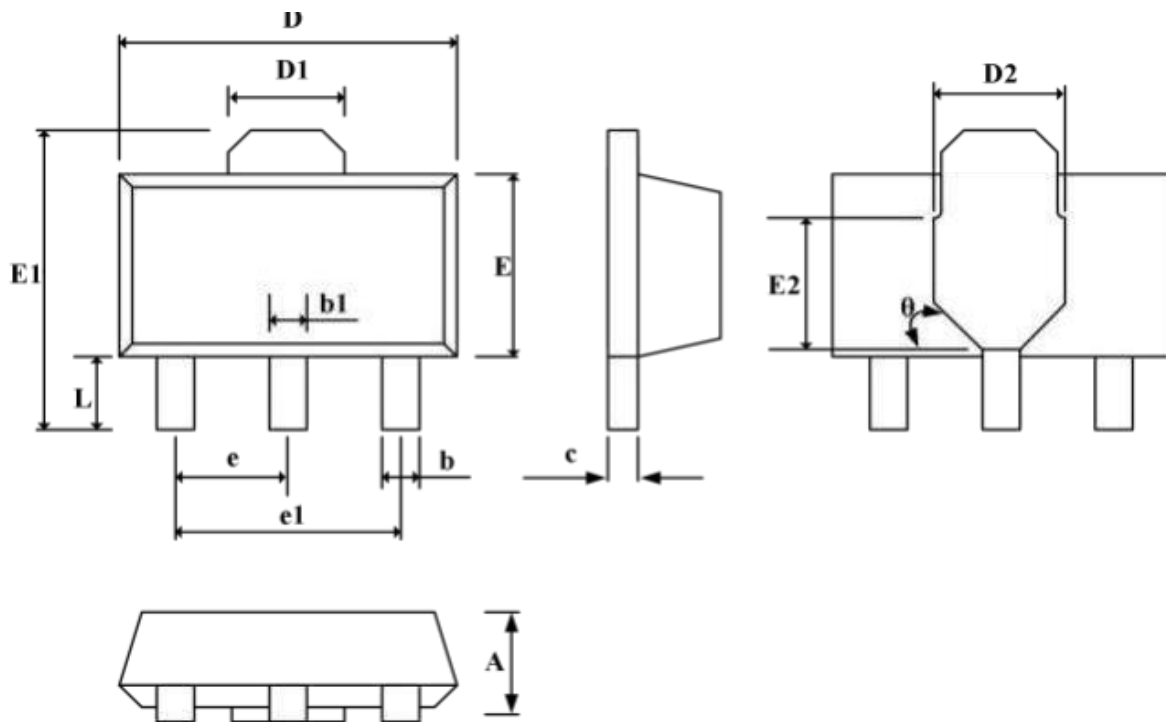
TO-92(Cutting feet)


symbol	Dimensions (unit: mm)		symbol	Dimensions (unit: mm)	
	Min	Max		Min	Max
A	3.300	3.700	E	4.300	4.700
A1	1.100	1.400	e	2.500 (TYP)	
b	0.380	0.550	L	6.100	6.900
c	0.360	0.510	L1	2.700	3.300
D	4.400	4.700	ϕ		1.600
D1	3.430		h	0.000	0.380

TO-92(Paper woven tape)


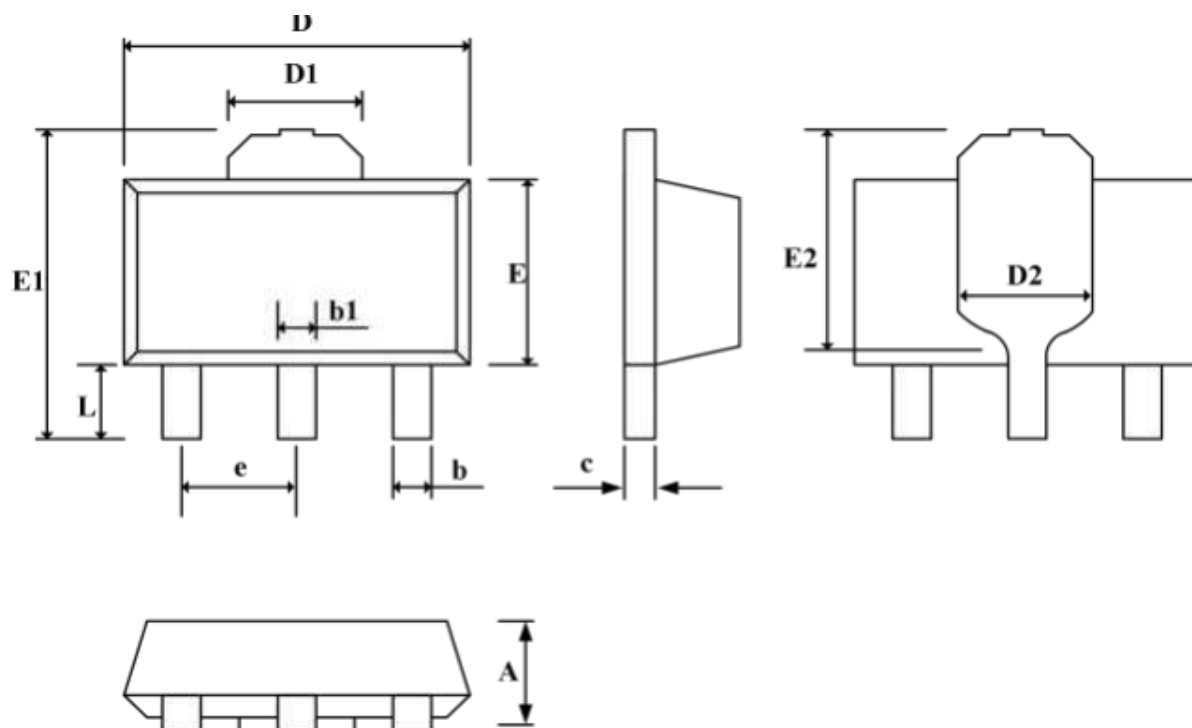
symbol	Dimensions (unit: mm)		symbol	Dimensions (unit: mm)	
	Min	Max		Min	Max
A	3.300	3.700	P ₀	12.500	12.900
D	4.300	4.700	P ₁	3.550	4.150
E	4.300	4.700	P ₂	6.050	6.650
b	0.380	0.550	R ₀	3.800	4.200
e	2.200	2.800	t ₁	0.350	0.450
L ₁	2.500		t ₂	0.150	0.250
H	18.000	21.000	W	17.500	19.000
ΔH	0	1.000	W ₀	5.500	6.500
H ₀	15.500	16.500	W ₁	8.500	9.500
P	12.400	13.000	W ₂		1.0
ΔP	0	1.000			

SOT-89



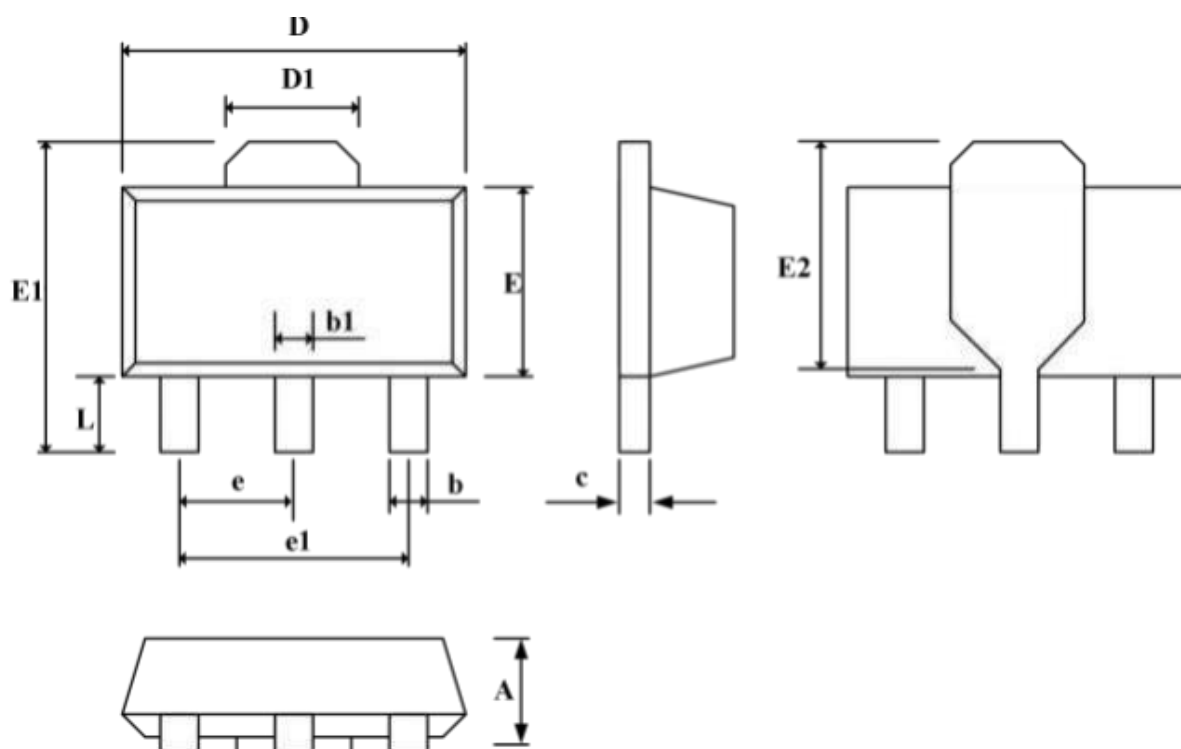
symbol	Dimensions (unit: mm)		symbol	Dimensions (unit: mm)	
	Min	Max		Min	Max
A	1.400	1.600	E	2.300	2.600
b	0.320	0.520	E1	3.940	4.250
b 1	0.400	0.580	E2	1.900 (REF)	
c	0.350	0.440	e	1.500 (REF)	
D	4.400	4.600	e1	3.000 (REF)	
D1	1.550 (REF)		L	0.900	1.200
D2	1.750 (REF)		θ	45°	

SOT-89



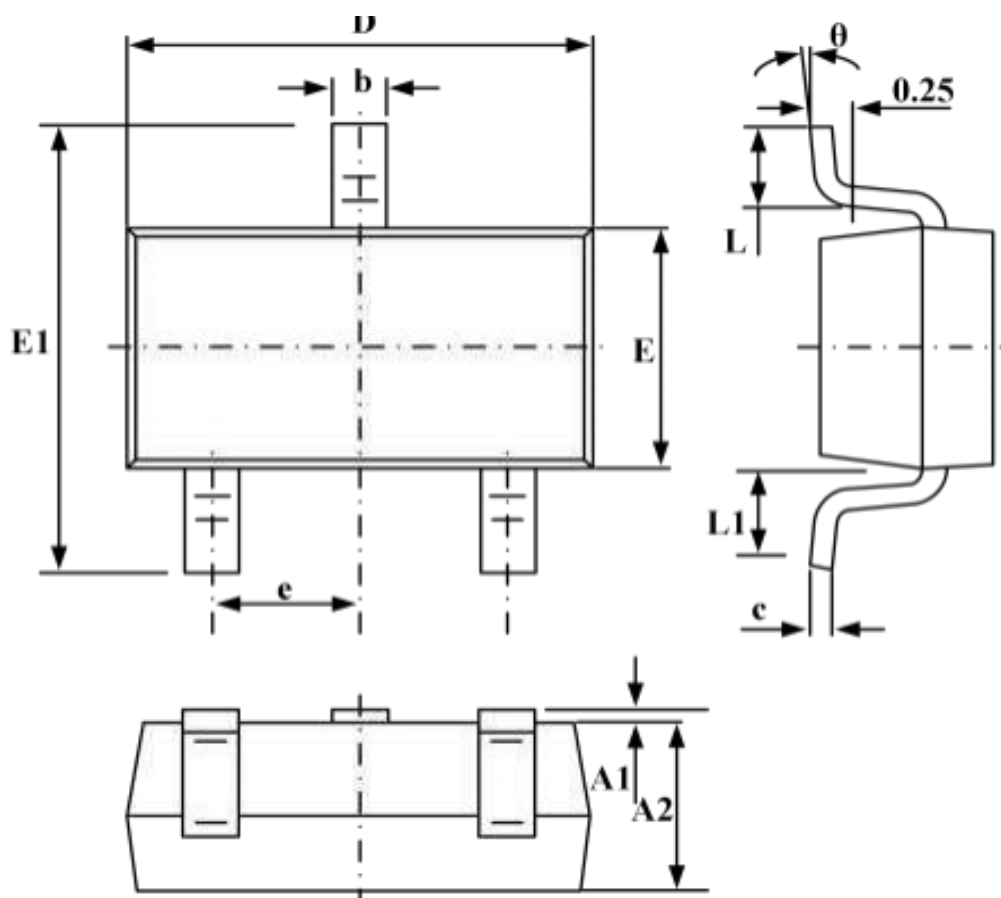
symbol	Dimensions (unit: mm)		symbol	Dimensions (unit: mm)	
	Min	Max		Min	Max
A	1.450	1.550	c	0.390	0.410
b	0.350	0.450	e	1.500 (REF)	
b 1	0.400	0.550	E	2.350	2.550
D	4.400	4.600	E1	4. 135	4.335
D1	1.550 (REF)		E2	2.650	2.850
D2	1.630 (REF)		L	0.950	1.050

SOT-89



symbol	Dimensions (unit: mm)		symbol	Dimensions (unit: mm)	
	Min	Max		Min	Max
A	1.400	1.600	E	2.350	2.550
b	0.350	0.520	E1	3.940	4.250
b 1	0.400	0.580	E2	2.700	(REF)
c	0.350	0.440	e	1.500	(REF)
D	4.400	4.600	e1	3.000	(REF)
D1	1.550	(REF)	L	0.900	1.100

SOT-23-3L



symbol	Dimensions (unit: mm)		symbol	Dimensions (unit: mm)	
	Min	Max		Min	Max
A1	0.03	0.130	E	1.520	1.720
A2	1.050	1.150	E1	2.800	3.000
b	0.350	0.450	L	0.400	0.500
c	0.120	0.135	L1	0.600	0.700
e	0.900	1.000	θ	0°	10°
D	2.820	3.020			

◆ Attention

- AOTE implements dynamic technical updates. Specifications are subject to change. Refer to the official website for the latest version.
- Users must strictly adhere to specified conditions. Failures caused by misuse (overload, high temperature, incompatible circuits) are excluded from warranty.
- Contact technical support for customized validation in critical applications (medical devices, industrial control).
- This document is valid until December 31, 2026 Updates will be notified on the official website.
- For further clarification on technical specifications or application solutions, please contact us through official channels: