
Low Quiescent Current 30mA Regulator

● General Description

The CDT71XX series is a three-terminal positive voltage regulator that is made by CMOS process. The CDT71XX series has higher precision output voltage and consumes less current than existing three-terminal voltage regulator. Battery power equipment can have a higher performance and a longer service life.

● Features

- Low Quiescent Current
- Low Drop Voltage
- Low Temperature Coefficient
- 24V Wide Supply Voltage Range
- Guaranteed 30mA Output Current
- $\pm 3\%$ Accuracy Output Voltage
- TO-92 and SOT-89 package

● Applications

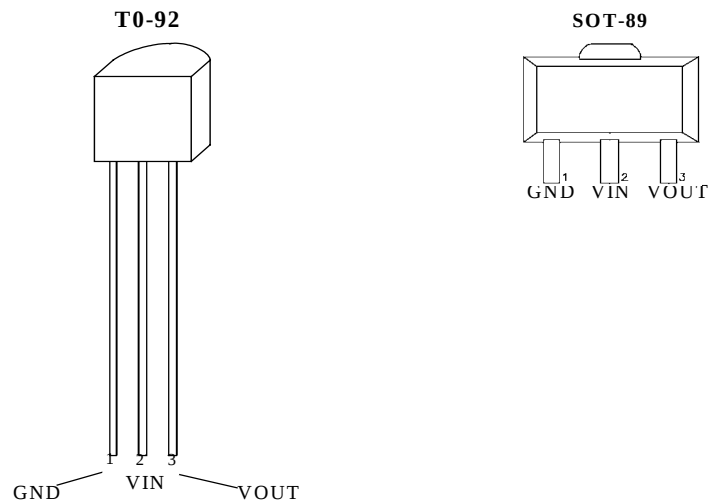
- Battery power equipment
- Communication equipment
- Audio and video equipment
- Portable Device

● Selection Table

CDT71XX

└───	Output Voltage
30:	3.0V
33:	3.3V
36:	3.6V

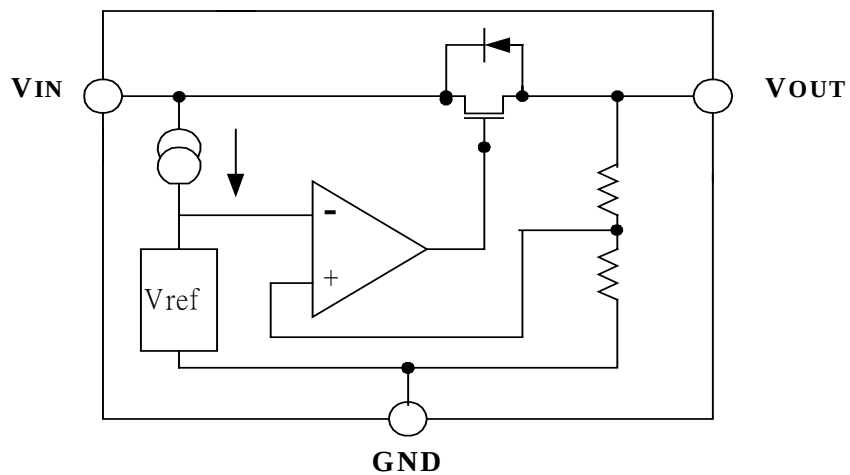
● Pin Assignment



● Pin Description

NO.	PIN_NAME	I/O	FUNCTION
1	GND	P	Power (-)
2	VIN	P	Power (+)
3	VOUT	O	Output

● Block Diagram



● Absolute Maximum Ratings

- Supply Voltage ----- -0.3V to 24V
- Input Voltage ----- -0.3V to $V_{\text{IN}}+0.3\text{V}$
- Operating Temperature ----- 0°C to 70°C
- Storage Temperature----- -50°C to 125°C

* Note : Stresses above those listed may cause permanent damage to the devices.

1. CDT7130

($V_{\text{IN}}=5\text{V}$, $T_{\text{A}} = 25^{\circ}\text{C}$, unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{IN}	Supply Voltage	-	-	-	24	V
V_{OUT}	Output Voltage	$V_{\text{IN}} = 5\text{V}$, $I_{\text{OUT}} = 10\text{mA}$	2.91	3.0	3.09	V
I_{OUT}	Output Current	$V_{\text{IN}} = 5\text{V}$	-	30	-	mA
V_{OUT1}	Load Regulation	$V_{\text{IN}} = 5\text{V}$, 1mA I_{OUT} 20mA	-	60	100	mV
V_{OUT2}	Line Regulation	4V V_{IN} 24V , $I_{\text{OUT}} = 1\text{mA}$	-	± 0.2	-	%/V
V_{DROP}	Drop Voltage	$I_{\text{OUT}} = 1\text{mA}$	-	90	-	mV
I_{Q}	Quiescent Current	$V_{\text{IN}} = 5\text{V}$, $V_{\text{OUT}} = 0\text{V}$	-	2.5	5.5	μA
$\frac{V_{\text{OUT}}}{T_{\text{a}}}$	Temperature Characteristic	$I_{\text{OUT}} = 10\text{mA}$, 0 T_{a} 70	-	± 0.45	-	mV/

2. CDT7133

($V_{\text{IN}}=5\text{V}$, $T_{\text{A}} = 25^{\circ}\text{C}$, unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{IN}	Supply Voltage	-	-	-	24	V
V_{OUT}	Output Voltage	$V_{\text{IN}} = 5\text{V}$, $I_{\text{OUT}} = 10\text{mA}$	3.20	3.3	3.39	V
I_{OUT}	Output Current	$V_{\text{IN}} = 5\text{V}$	-	30	-	mA
V_{OUT1}	Load Regulation	$V_{\text{IN}} = 5\text{V}$, 1mA I_{OUT} 20mA	-	60	100	mV
V_{OUT2}	Line Regulation	4V V_{IN} 24V , $I_{\text{OUT}} = 1\text{mA}$	-	± 0.2	-	%/V
V_{DROP}	Drop Voltage	$I_{\text{OUT}} = 1\text{mA}$	-	90	-	mV
I_{Q}	Quiescent Current	$V_{\text{IN}} = 5\text{V}$, $V_{\text{OUT}} = 0\text{V}$	-	2.5	5.5	μA
$\frac{V_{\text{OUT}}}{T_{\text{a}}}$	Temperature Characteristic	$I_{\text{OUT}} = 0\text{mA}$, 0 T_{a} 70	-	± 0.5	-	mV/

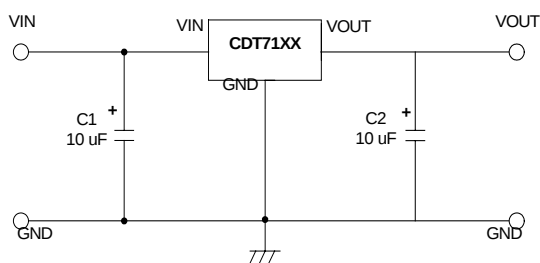
3. CDT7136

($V_{IN}=5V$, $T_A = 25^{\circ}C$, unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{IN}	Supply Voltage	-	-	-	24	V
V_{OUT}	Output Voltage	$V_{IN} = 5V$, $I_{OUT} = 10mA$	3.49	3.6	3.70	V
I_{OUT}	Output Current	$V_{IN} = 5V$	-	30	-	mA
V_{OUT1}	Load Regulation	$V_{IN} = 5V$, $1mA \leq I_{OUT} \leq 20mA$	-	60	100	mV
V_{OUT2}	Line Regulation	$4V \leq V_{IN} \leq 24V$, $I_{OUT} = 1mA$	-	± 0.2	-	%/V
V_{DROP}	Drop Voltage	$I_{OUT} = 1mA$	-	90	-	mV
I_Q	Quiescent Current	$V_{IN} = 5V$, $V_{OUT} = 0V$	-	2.5	5.5	μA
$\frac{V_{OUT}}{T_A}$	Temperature Characteristic	$I_{OUT} = 10mA$, $0 \leq T_A \leq 70$	-	± 0.6	-	mV/

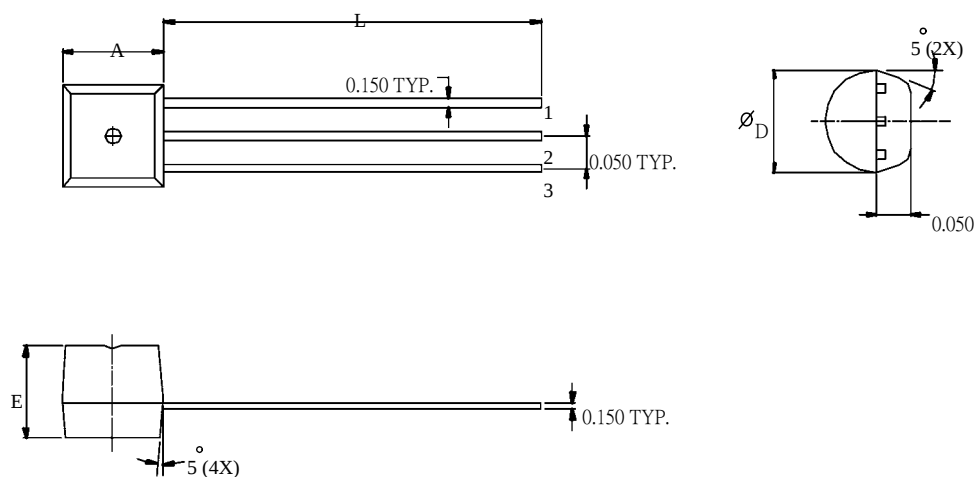
● Application Circuit

To avoid the surge voltages of V_{IN} , keep C1 with the capacitance of 10 μ F. To reduce output ripple and improve response time of load, keep C2 with the capacitance of 10 μ F. It's possible without each capacitance if V_{IN} side is closed to GND and output ripple is limited.



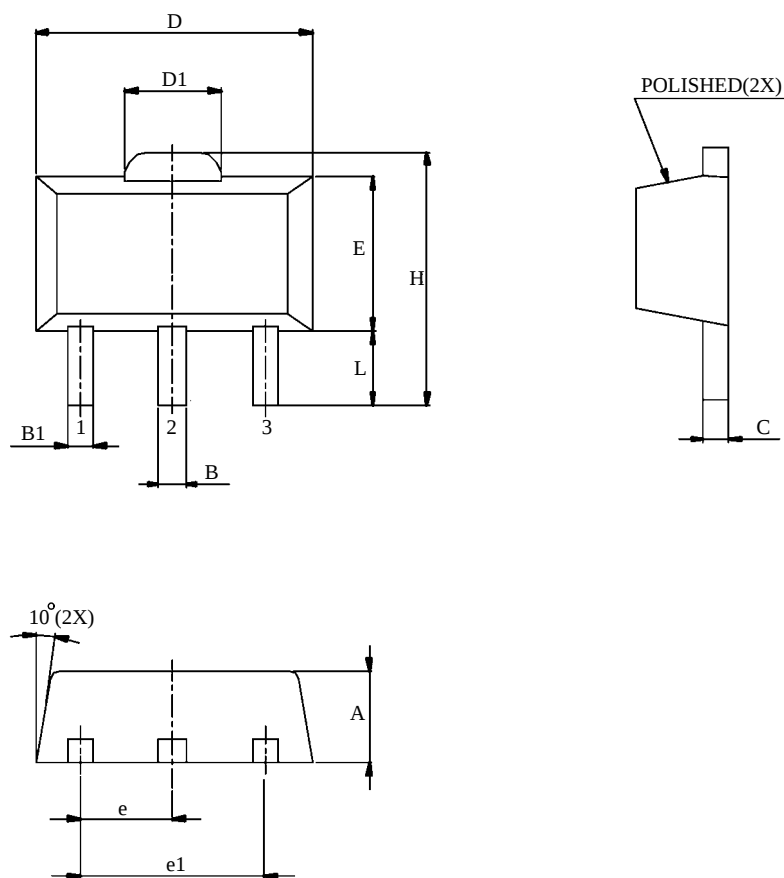
● Package Information

- TO-92 outline dimensions



Symbols	INCHES		
	MIN.	NOR.	MAX.
A	0.170	0.180	0.210
ØD	0.175	0.180	0.205
E	0.125	0.142	0.165
L	0.500	0.580	—

• SOT-89 outline dimensions



Symbols	MIN.	MAX.
A	1.40	1.60
B	0.44	0.56
B1	0.36	0.48
C	0.35	0.44
D	4.40	4.60
D1	1.35	1.83
E	2.29	2.60
H	3.94	4.25
e	1.50 BSC	
e1	3.00 BSC	
L	0.89	1.2

UNIT : MM

NOTES.

1. JEDEC OUTLINE : TO-243 AA
2. DIMENSION B1, 2 PLACES.

* CDT assumes no responsibility for the use of the specification described. CDT reserves the right to modify the product specification without notice.

(以上規格僅供參考，本公司得逕行修正，不另通知)