HT10XX
Voltage Regulator

Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- Wide operating voltage (12V max.)
- TO-92/SOT-89 package

Applications

- Battery-powered equipment
- Communication equipment
- Audio/Video equipment

General Description

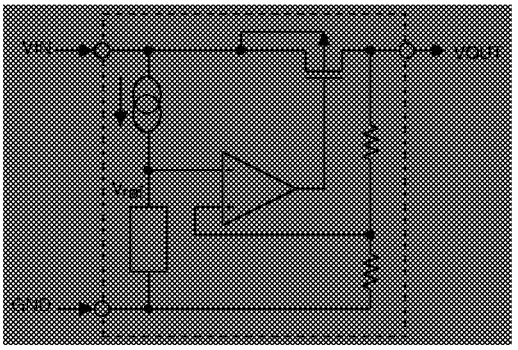
The HT10XX is a set of three-terminal low power voltage regulators implemented in CMOS technology. It is available with a fixed output voltages at 1.5V. CMOS technology ensures low voltage drop and low quiescent current.

Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain variable voltages and currents.

Selection Table

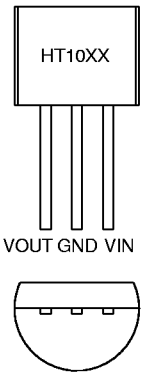
Part No.	Pin Assignment	Output Voltage	Tolerance
HT1015	B, C	1.5V	5%
HT1016	A		

Block Diagram

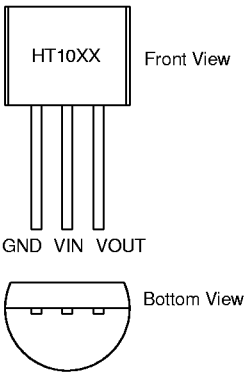


Pin Assignment

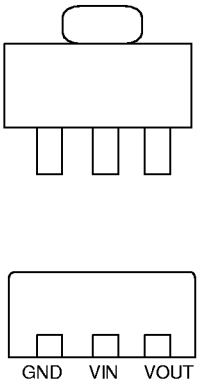
A. TO-92



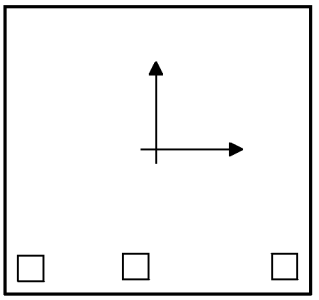
B. TO-92



C. SOT-89



Pad Assignment



Pad Coordinates

Unit: m

Pad No.	X	Y
1	544.8	553
2	95.2	555.6
3	575.8	547.6

Chip size: 1524 1524 (m)^2

* The IC substrate should be connected to VDD in the PCB layout artwork.

Absolute Maximum Ratings

Supply Voltage ..... 0.3V to 13V
Power Consumption 250mW
Storage Temperature..... 50 C to 125 C
Operating Temperature .....0 C to 70 C

Note: These are stress ratings only. Stresses exceeding the range specified under Absolute Maximum Ratings may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

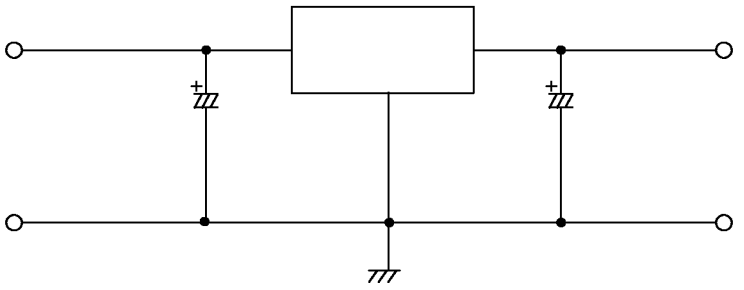
Electrical Characteristics

HT10XX series (HT1015, HT1016, +1.5V output type) Ta=25 C

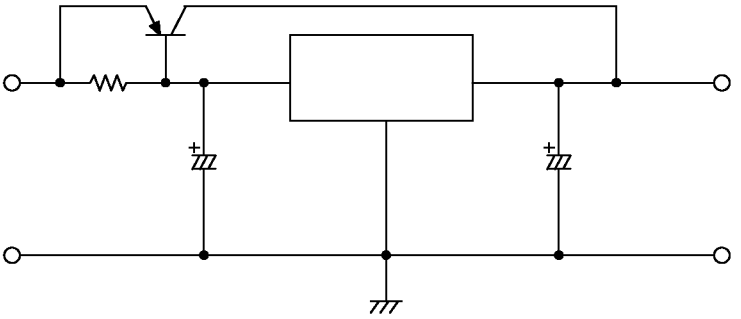
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage Tolerance	3.5V	I_{OUT}=0.5mA	1.425	1.5	1.575	V
I_{OUT}	Output Current	3.5V		7.0			mA
V_{OUT}	Load Regulation	3.5V	1mA I_{OUT} 7mA		80		mV
V_{DIF}	Voltage Drop		I_{OUT}=0.5mA		300		mV
I_{SS}	Current Consumption	3.5V	No load		2.2	5.0	A
$\frac{V_{OUT}}{V_{IN} \quad V_{OUT}}$	Line Regulation		2.5V V_{IN} 12V I_{OUT}=0.5mA		0.2		%/V
V_{IN}	Input Voltage					12	V
$\frac{V_{OUT}}{T_a}$	Temperature Coefficient	3.5V	I_{OUT}=0.5mA 0 C<Ta<70 C		0.25		mV/ C

Application Circuits

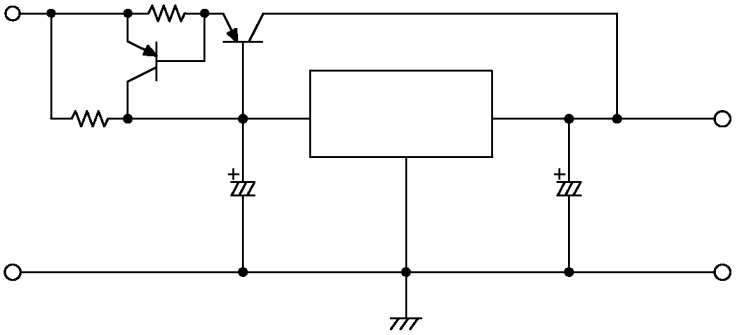
The basic circuits of the HT10XX series



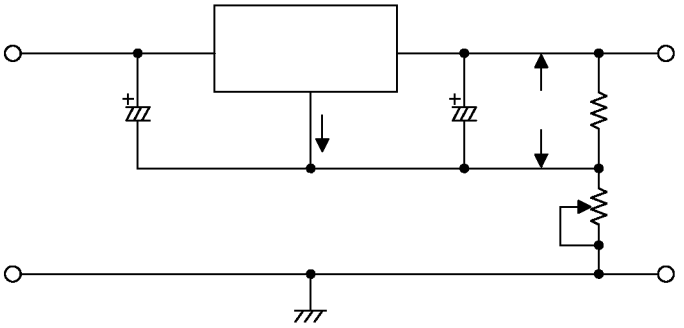
High output current positive voltage regulator



Short-Circuit protection by Tr1

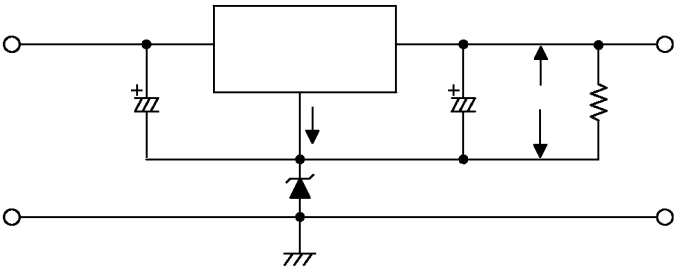


Circuit for increasing output voltage



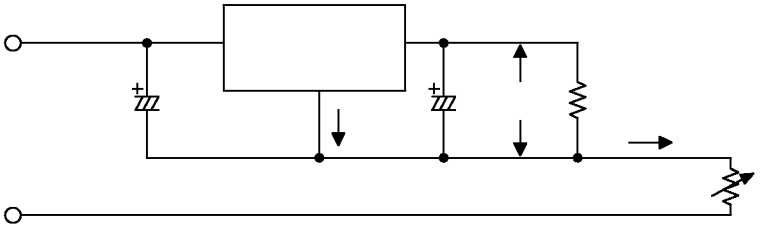
$$V_{OUT} = V_{XX} \left(1 + \frac{R2}{R1}\right) + I_{SS} R2$$

$$V_{XX} \left(1 + \frac{R2}{R1}\right)$$



$$V_{OUT} = V_{XX} + V_{D1}$$

Constant current regulator



$$I_{OUT} = \frac{V_{XX}}{R_A} + I_{SS}$$

Dual supply