

Features

- High input voltage (up to -24V)
- Low power consumption
- High output current : 100mA ($P_d \leq 250mW$)
- Low voltage dropout
- Low temperature coefficient
- TO-92 & SOT-89 package

Applications

- Battery-Powered equipment
- Communication equipment
- Audio/Video equipment

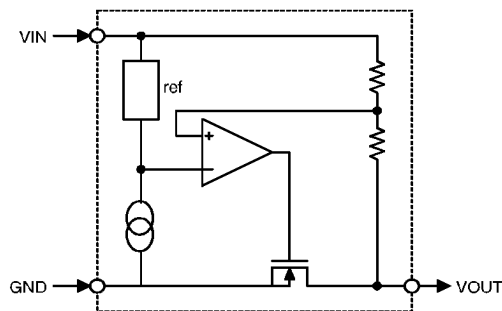
General Description

The HT79L0X series is a set of three-terminal high current high voltage regulator implemented in CMOS technology. They can deliver 100mA output current and allow an input voltage as high as -24V. They are available with several fixed output voltages ranging from -2.4V to -15V. The advantages of CMOS technology

give low voltage dropout and low quiescent current.

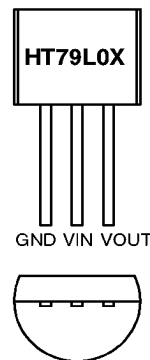
Although designed primarily as fixed voltage regulator, these devices can be used with external components to obtain variable voltages and currents.

Block Diagram

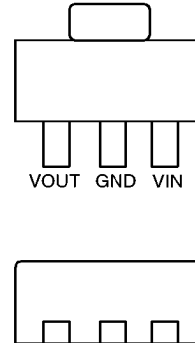


Pin Assignment

TO-92



SOT-89



Selection Guide

Item	Output Voltage	Tolerance
HT79L03	-3.0V	±2.4%, ±5%
HT79L05	-5.0V	±2.4%, ±5%

Note: Selectable regulation voltage range from -2.4V to -9V in 0.1V increments. If custom first order 100K piece. (semi-custom parts)

Absolute Maximum Ratings*

Supply Voltage +0.3V to -26V Storage Temperature..... -50°C to 125°C
 Power Dissipation 250mW Operating Temperature..... 0°C to 70°C

*Note: Stresses above those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only. Functional operation of this device at these or any other conditions above those indicated in the operational sections of this specification is not implied and exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Electrical Characteristics

HT79L0X series (-3.0V output type)

(Ta=25°C)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V _{IN}	Conditions				
V _{OUT}	Output Voltage Tolerance	-5V	I _{OUT} =10mA	-2.85	-3.0	-3.15	V
I _{OUT}	Output Current	-5V	—	60	100	—	mA
ΔV _{OUT}	Load Regulation	-5V	1mA ≤ I _{OUT} ≤ 50mA	—	60	120	mV
V _{DIF}	Voltage Dropout	—	I _{OUT} =1mA	—	100	—	mV
I _{SS}	Current Consumption	-5V	No load	—	200	350	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	Line Regulation	—	-4V ≤ V _{IN} ≤ -12V I _{OUT} =1mA	—	0.2	—	%/V
V _{IN}	Input Voltage	—	—	—	—	-24	V
$\frac{\Delta V_{OUT}}{\Delta T_a}$	Temperature Coefficient	-5V	I _{OUT} =10mA 0°C < T _a < 70°C	—	±0.45	—	mV/°C

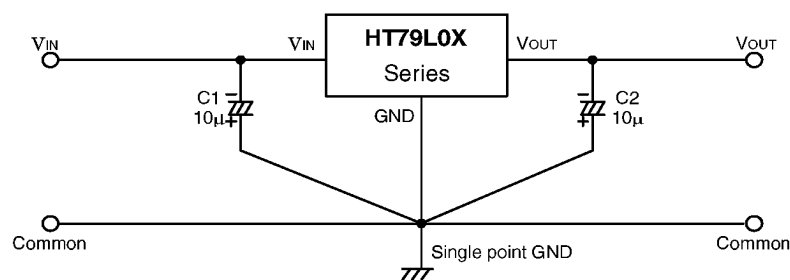
HT79L0X series (–5.0V output type)

(Ta=25°C)

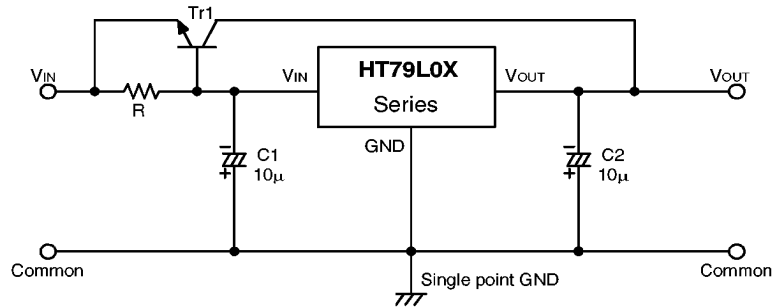
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V _{IN}	Conditions				
V _{OUT}	Output Voltage	–7V	I _{OUT} =10mA	–4.75	–5.0	–5.25	V
I _{OUT}	Output Current	–7V	—	100	150	—	mA
ΔV _{OUT}	Load Regulation	–7V	1mA≤I _{OUT} ≤30mA	—	60	150	mV
V _{DIF}	Voltage Dropout	—	I _{OUT} =1mA	—	100	—	mV
I _{SS}	Current Consumption	–7V	No load	—	330	500	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	Line Regulation	—	–6V≤V _{IN} ≤–15V I _{OUT} =1mA	—	0.2	—	%/V
V _{IN}	Input Voltage	—	—	—	—	–24	V
$\frac{\Delta V_{OUT}}{\Delta T_a}$	Temperature Coefficient	–7V	I _{OUT} =10mA 0°C<Ta<70°C	—	±0.75	—	mV/°C

Application Circuit

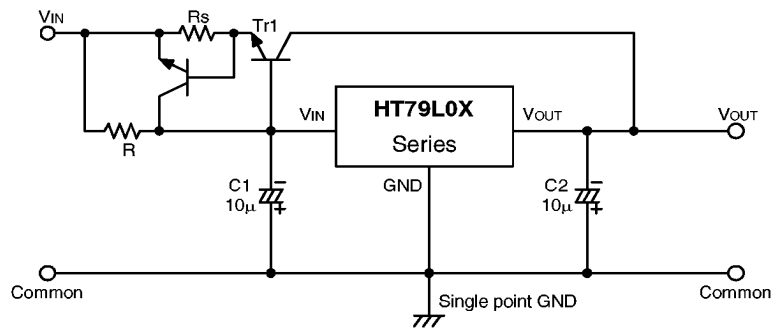
Basic circuit



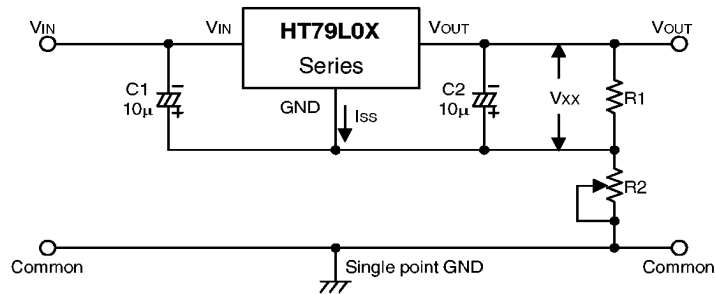
High output current positive voltage regulator



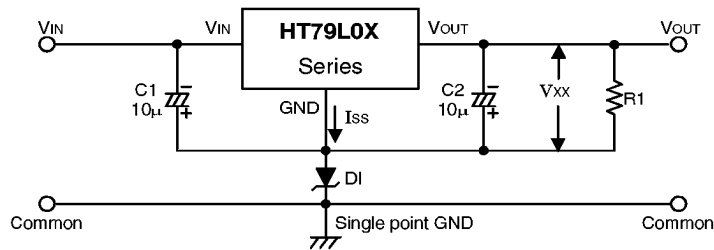
Short-Circuit protection for $Tr1$



Circuit for increasing output voltage

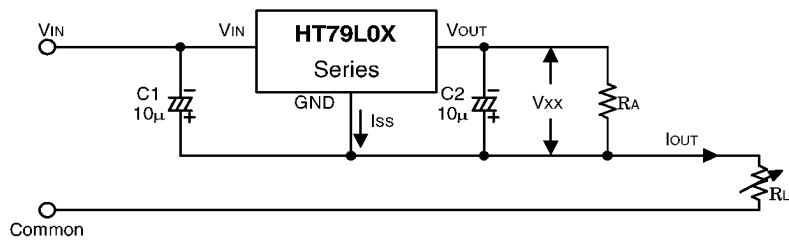


$$V_{OUT} = V_{XX} \left(1 + \frac{R2}{R1} \right) + I_{SS} R2$$



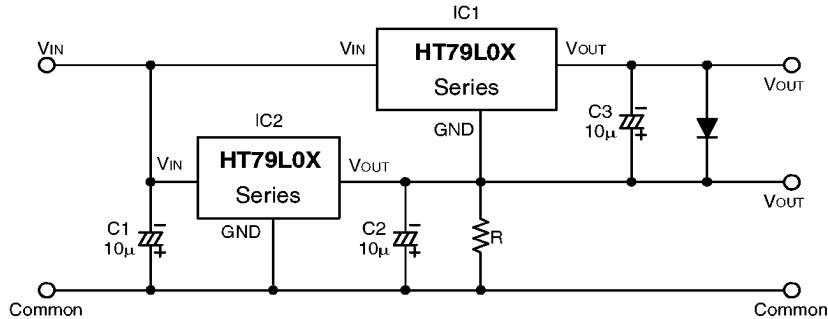
Circuit for increasing output voltage

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



Constant current regulator

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



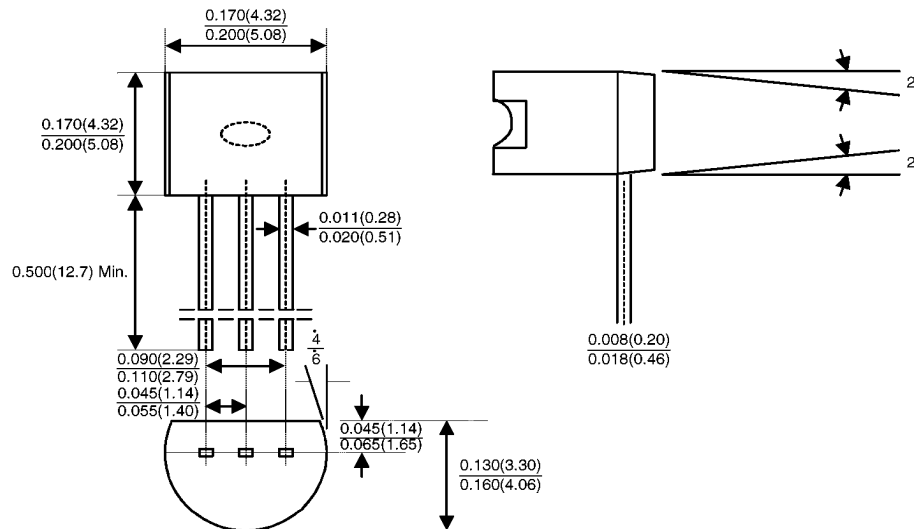
Dual supply

Package Outlines

Dimension

All linear dimensions are in inches and parenthetically in millimeters ($\frac{\text{Min.}}{\text{Max.}}$)

3-pin TO-92 package



SOT-89 package

