

## Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- High input voltage (up to 30V)
- Quiescent current 1µA
- High output current : 100mA
- Output voltage accuracy: tolerance ±2%
- TO92 and SOT89 packages

## General Description

The HT7534-3 & HT7551-3 are three-terminal high current low voltage regulator implemented in CMOS technology. They can deliver 100mA output current and allow an input voltage as high as 30V. 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.

## Applications

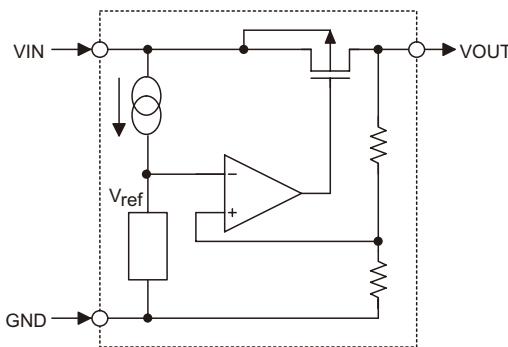
- Battery-powered equipment
- Communication equipment
- Audio/Video equipment

## Selection Table

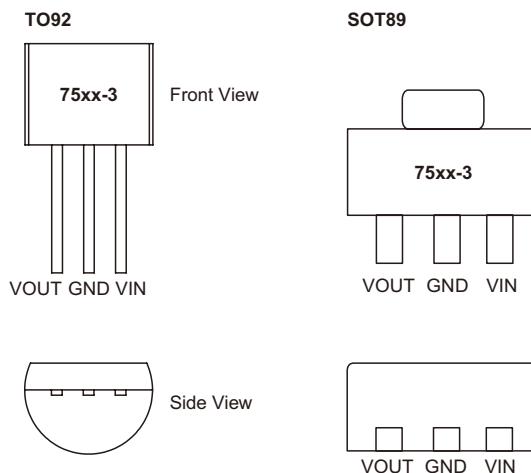
Part No.	Output Voltage	Package	Marking
HT7534-3	3.3V	TO92 SOT89	7534-3
HT7551-3	5.0V		7551-3

Note: "xx" stands for output voltages.

## Block Diagram



## Pin Assignment



## Absolute Maximum Ratings

Supply Voltage .....	-0.3V to 33V	Operating Temperature .....	-40°C to 85°C
Storage Temperature .....	-50°C to 125°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.

## Thermal Information

Symbol	Parameter	Package	Max.	Unit
$\theta_{JA}$	Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink)	SOT89	200	°C/W
		TO92	200	°C/W
$P_D$	Power Dissipation	SOT89	0.50	W
		TO92	0.50	W

Note:  $P_D$  is measured at  $T_a=25^\circ\text{C}$

## Electrical Characteristics

### HT7534-3, +3.3V Output Type

T<sub>a</sub>=25°C

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
		Conditions				
V <sub>IN</sub>	Input Voltage	—	—	—	30	V
V <sub>OUT</sub>	Output Voltage Tolerance	V <sub>IN</sub> =V <sub>OUT</sub> +2V, I <sub>OUT</sub> =10mA	3.234	3.300	3.366	V
I <sub>OUT</sub>	Output Current	V <sub>IN</sub> =V <sub>OUT</sub> +2V	70	100	—	mA
ΔV <sub>OUT</sub>	Load Regulation	V <sub>IN</sub> =V <sub>OUT</sub> +2V, 1mA≤I <sub>OUT</sub> ≤50mA	—	—	60	mV
V <sub>DIF</sub>	Dropout Voltage	I <sub>OUT</sub> =1mA, ΔV <sub>O</sub> =2%	—	—	55	mV
I <sub>SS</sub>	Quiescent Current	No load	—	1.0	1.5	μA
ΔV <sub>OUT</sub> ΔV <sub>IN</sub> × V <sub>OUT</sub>	Line Regulation	V <sub>O</sub> +1V≤V <sub>IN</sub> ≤30V, I <sub>OUT</sub> =1mA	—	—	0.2	%/V
ΔV <sub>OUT</sub> ΔT <sub>a</sub> × V <sub>OUT</sub>	Temperature Coefficient	I <sub>OUT</sub> =10mA, -40°C<T <sub>a</sub> <85°C	—	100	—	ppm/°C

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V<sub>IN</sub>= V<sub>OUT</sub>+2V with a fixed load.

### HT7551-3, +5.0V Output Type

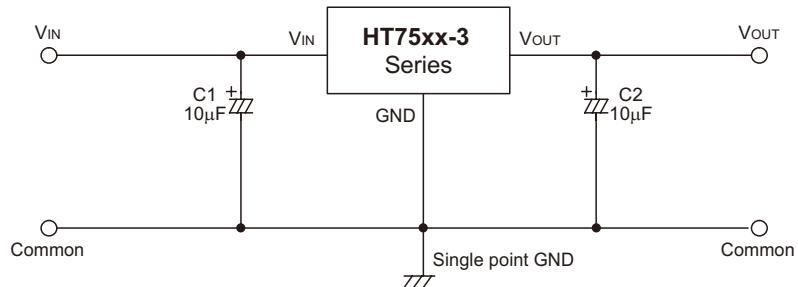
T<sub>a</sub>=25°C

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
		Conditions				
V <sub>IN</sub>	Input Voltage	—	—	—	30	V
V <sub>OUT</sub>	Output Voltage Tolerance	V <sub>IN</sub> =V <sub>OUT</sub> +2V, I <sub>OUT</sub> =10mA	4.900	5.000	5.100	V
I <sub>OUT</sub>	Output Current	V <sub>IN</sub> =V <sub>OUT</sub> +2V	100	—	—	mA
ΔV <sub>OUT</sub>	Load Regulation	V <sub>IN</sub> =V <sub>OUT</sub> +2V, 1mA≤I <sub>OUT</sub> ≤70mA	—	—	60	mV
V <sub>DIF</sub>	Dropout Voltage	I <sub>OUT</sub> =1mA, ΔV <sub>O</sub> =2%	—	—	55	mV
I <sub>SS</sub>	Quiescent Current	No load	—	1.0	1.5	μA
ΔV <sub>OUT</sub> ΔV <sub>IN</sub> × V <sub>OUT</sub>	Line Regulation	V <sub>O</sub> +1V≤V <sub>IN</sub> ≤30V, I <sub>OUT</sub> =1mA	—	—	0.2	%/V
ΔV <sub>OUT</sub> ΔT <sub>a</sub> × V <sub>OUT</sub>	Temperature Coefficient	I <sub>OUT</sub> =10mA, -40°C<T <sub>a</sub> <85°C	—	100	—	ppm/°C

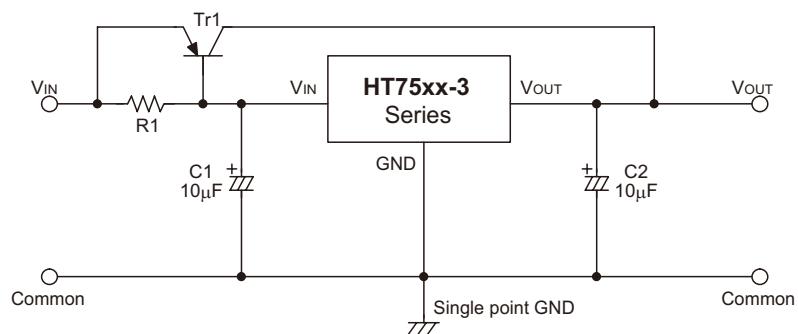
Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V<sub>IN</sub>= V<sub>OUT</sub>+2V with a fixed load.

## Application Circuits

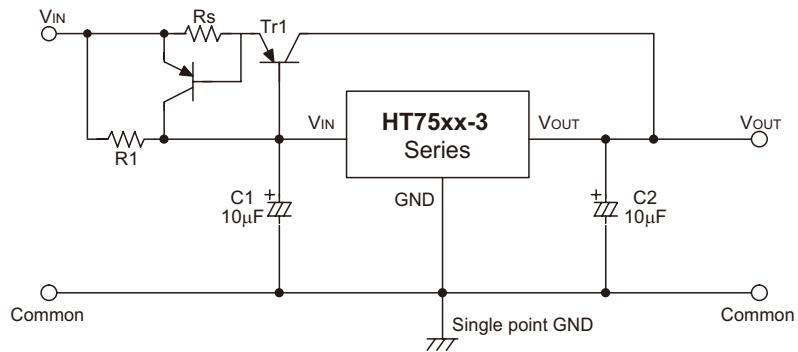
### Basic Circuit



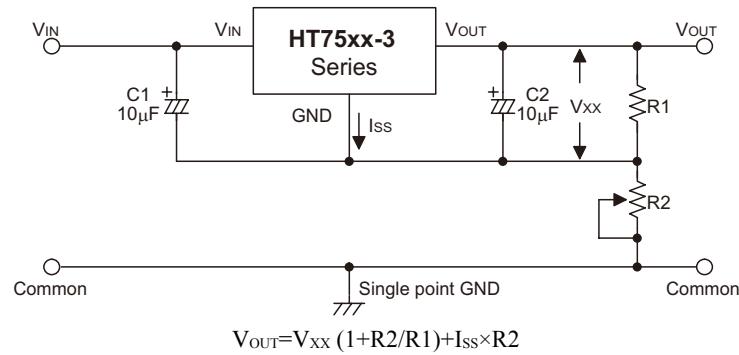
### High Output Current Positive Voltage Regulator



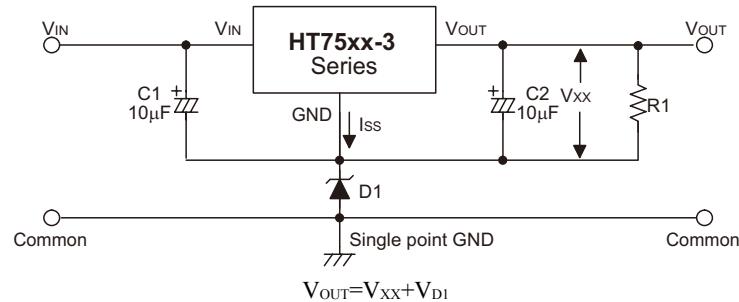
### Short-Circuit Protection for $Tr1$



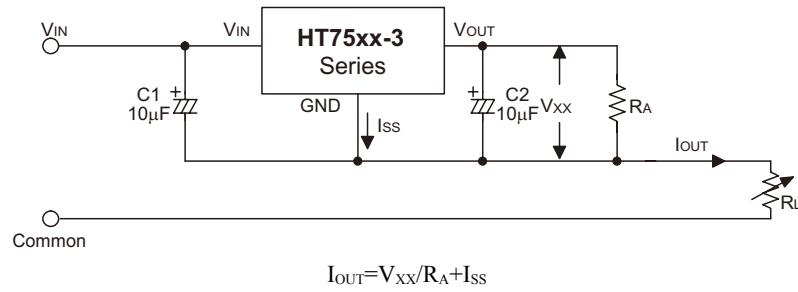
### Circuit for Increasing Output Voltage



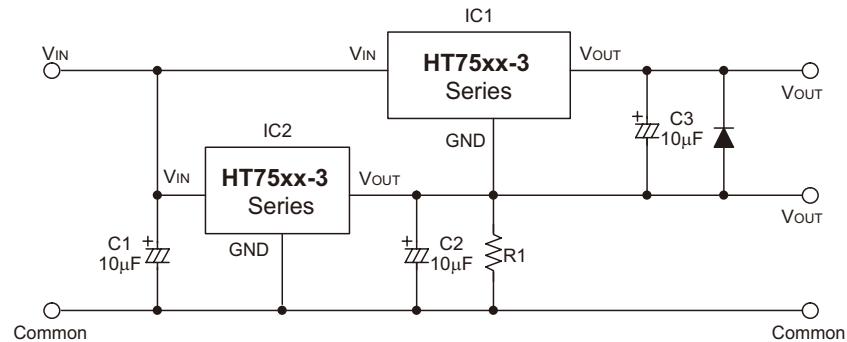
### Circuit for Increasing Output Voltage



### Constant Current Regulator



### Dual Supply



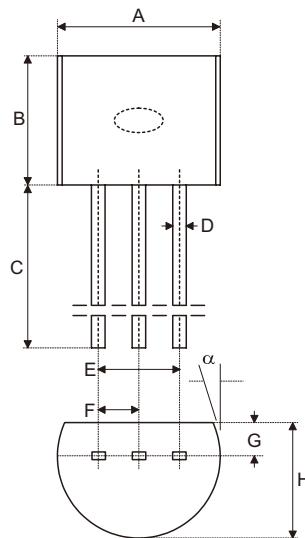
## Package Information

Note that the package information provided here is for consultation purposes only. As this information may be updated at regular intervals users are reminded to consult the [Holtek website](#) for the latest version of the package information.

Additional supplementary information with regard to packaging is listed below. Click on the relevant section to be transferred to the relevant website page.

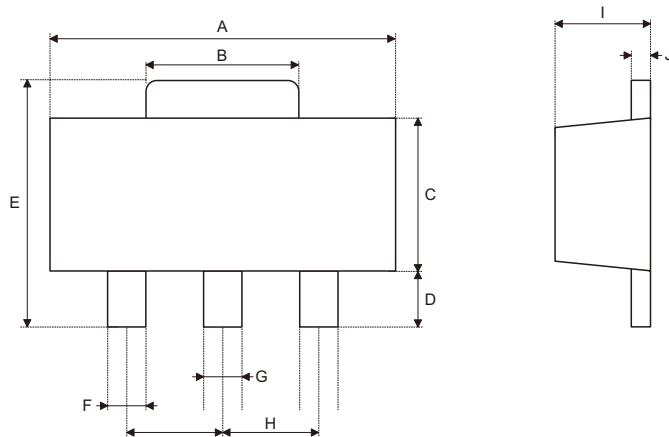
- [Further Package Information](#) (include Outline Dimensions, Product Tape and Reel Specifications)
- [Packing Materials Information](#)
- [Carton information](#)
- [PB FREE Products](#)
- [Green Packages Products](#)

## 3-pin TO92 Outline Dimensions



Symbol	Dimensions in inch		
	Min.	Nom.	Max.
A	0.170	—	0.200
B	0.170	—	0.200
C	0.500	—	—
D	0.011	—	0.020
E	0.090	—	0.110
F	0.045	—	0.055
G	0.045	—	0.065
H	0.130	—	0.160
α	0°	—	10°

Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	4.32	—	5.08
B	4.32	—	5.08
C	12.70	—	—
D	0.28	—	0.51
E	2.29	—	2.79
F	1.14	—	1.40
G	1.14	—	1.65
H	3.30	—	4.06
α	0°	—	10°

**3-pin SOT89 Outline Dimensions**


Symbol	Dimensions in inch		
	Min.	Nom.	Max.
A	0.173	—	0.181
B	0.059	—	0.072
C	0.090	—	0.102
D	0.035	—	0.047
E	0.155	—	0.167
F	0.014	—	0.019
G	0.017	—	0.022
H	—	0.059	—
I	55	—	63
J	14	—	17

Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	4.39	—	4.60
B	1.50	—	1.83
C	2.29	—	2.59
D	0.89	—	1.19
E	3.94	—	4.24
F	0.36	—	0.48
G	0.43	—	0.56
H	—	1.50	—
I	1.40	—	1.60
J	0.36	—	0.43

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