High Driver Regulator
HT75XX

SOT-89   Unit:mm

1.GND
2.VIN
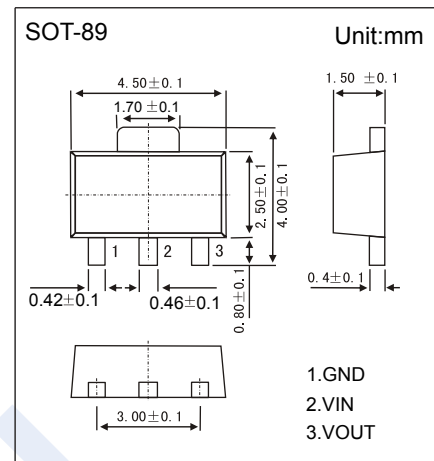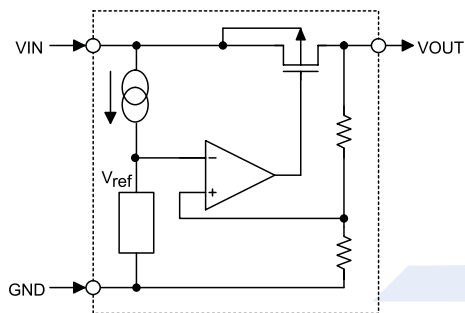3.VOUT

■ Features

● Low power consumption

● Low voltage drop

● Low temperature coefficient

● High input voltage (up to 24V)

● High output current : 100mA

■ Selection Table

Part No.	Output Voltage	Tolerance
HT7530	3V	±5%
HT7533	3.3V	±5%
HT7536	3.6V	±5%
HT7544	4.4V	±5%
HT7550	5V	±5%
HT7580	8V	±5%

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{SS}	-0.3 to 26	V
Power Consumption	P_C	250	mW
Junction Temperature	T_J	125	℃
Operating Temperature	T_{opr}	0 to 70	
Storage Temperature range	T_{stg}	-50 to 125	

■ Marking

NO.	HT7530	HT7533	HT7536	HT7544	HT7550	HT7580
Marking	D7530 *****	D7533 *****	D7536 *****	D7544 *****	D7550 *****	D7580 *****

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■ Electrical Characteristics Ta = 25℃

HT7530, +3.0V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage Tolerance	V_{OUT}	5V	I_{OUT}= 10mA	2.85	3	3.15	V
Output Current	I_{OUT}	5V		60	100		mA
Load Regulation	$\triangle V_{OUT}$	5V	1mA≤I_{OUT}≤50mA		60	150	mV
Voltage Drop	V_{DIF}		I_{OUT}= 1mA		100		mV
Current Consumption	I_{SS}	5V	No load		10	20	uA
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}X\triangle V_{OUT}}$		4V≤V_{IN}≤12V I_{OUT}=1mA		0.2		%/V
Input Voltage	V_{IN}					24	V
Temperature Coefficient	$\dfrac{\triangle V_{OUT}}{\triangle Ta}$	5V	I_{OUT}=10mA 0 ℃<Ta<70℃		±0.45		mV/℃

HT7533, +3.3V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage Tolerance	V_{OUT}	5.5V	I_{OUT}= 10mA	3.14	3.3	3.47	V
Output Current	I_{OUT}	5.5V		60	100		mA
Load Regulation	$\triangle V_{OUT}$	5.5V	1mA≤I_{OUT}≤50mA		60	150	mV
Voltage Drop	V_{DIF}		I_{OUT}= 1mA		100		mV
Current Consumption	I_{SS}	5.5V	No load		10	20	uA
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}X\triangle V_{OUT}}$		4.5V≤V_{IN}≤12V I_{OUT}=1mA		0.2		%/V
Input Voltage	V_{IN}					24	V
Temperature Coefficient	$\dfrac{\triangle V_{OUT}}{\triangle Ta}$	5.5V	I_{OUT}=10mA 0 ℃<Ta<70℃		±0.5		mV/℃

HT7536, +3.6V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage Tolerance	V_{OUT}	5.6V	I_{OUT}= 10mA	3.42	3.6	3.78	V
Output Current	I_{OUT}	5.6V		60	100		mA
Load Regulation	$\triangle V_{OUT}$	5.6V	1mA≤I_{OUT}≤50mA		60	150	mV
Voltage Drop	V_{DIF}		I_{OUT}= 1mA		100		mV
Current Consumption	I_{SS}	5.6V	No load		10	20	uA
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}X\triangle V_{OUT}}$		4.6V≤V_{IN}≤12V I_{OUT}=1mA		0.2		%/V
Input Voltage	V_{IN}					24	V
Temperature Coefficient	$\dfrac{\triangle V_{OUT}}{\triangle Ta}$	5.6V	I_{OUT}=10mA 0 ℃<Ta<70℃		±0.6		mV/℃

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■ Electrical Characteristics Ta = 25℃

HT7544, +4.4V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V$_{IN}$	Conditions				
Output Voltage Tolerance	V$_{OUT}$	6.4V	I$_{OUT}$= 10mA	4.18	4.4	4.62	V
Output Current	I$_{OUT}$	6.4V		60	100		mA
Load Regulation	△V$_{OUT}$	6.4V	1mA≤I$_{OUT}$≤50mA		60	150	mV
Voltage Drop	V$_{DIF}$		I$_{OUT}$= 1mA		100		mV
Current Consumption	I$_{SS}$	6.4V	No load		10	20	uA
Line Regulation	$\frac{△V_{OUT}}{△V_{IN}X△V_{OUT}}$		5.4V≤V$_{IN}$≤12V I$_{OUT}$=1mA		0.2		%/V
Input Voltage	V$_{IN}$					24	V
Temperature Coefficient	$\frac{△V_{OUT}}{△T_a}$	6.4V	I$_{OUT}$=10mA 0 ℃<Ta<70℃		±0.7		mV/℃

HT7550, +5.0V output type

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V$_{IN}$	Conditions				
Output Voltage Tolerance	V$_{OUT}$	7V	I$_{OUT}$= 10mA	4.75	5	5.25	V
Output Current	I$_{OUT}$	7V		100	150		mA
Load Regulation	△V$_{OUT}$	7V	1mA≤I$_{OUT}$≤70mA		60	150	mV
Voltage Drop	V$_{DIF}$		I$_{OUT}$= 1mA		100		mV
Current Consumption	I$_{SS}$	7V	No load		10	20	uA
Line Regulation	$\frac{△V_{OUT}}{△V_{IN}X△V_{OUT}}$		6V≤V$_{IN}$≤15V I$_{OUT}$=1mA		0.2		%/V
Input Voltage	V$_{IN}$					24	V
Temperature Coefficient	$\frac{△V_{OUT}}{△T_a}$	7V	I$_{OUT}$=10mA 0 ℃<Ta<70℃		±0.75		mV/℃

HT7580, +8.0V output type

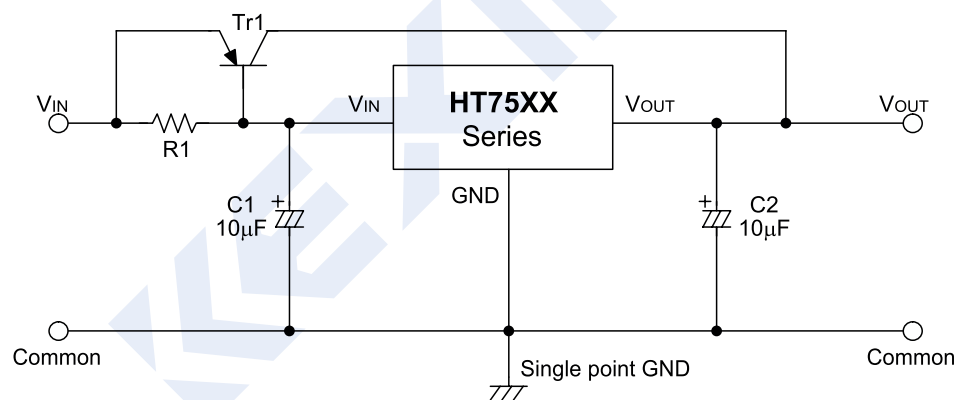| Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V$_{IN}$	Conditions				
Output Voltage Tolerance	V$_{OUT}$	10V	I$_{OUT}$= 10mA	7.61	8	8.4	V
Output Current	I$_{OUT}$	10V		100	150		mA
Load Regulation	△V$_{OUT}$	10V	1mA≤I$_{OUT}$≤70mA		60	150	mV
Voltage Drop	V$_{DIF}$		I$_{OUT}$= 1mA		100		mV
Current Consumption	I$_{SS}$	10V	No load		10	20	uA
Line Regulation	$\frac{△V_{OUT}}{△V_{IN}X△V_{OUT}}$		9V≤V$_{IN}$≤20V I$_{OUT}$=1mA		0.2		%/V
Input Voltage	V$_{IN}$					24	V
Temperature Coefficient	$\frac{△V_{OUT}}{△T_a}$	10V	I$_{OUT}$=10mA 0 ℃<Ta<70℃		±1.2		mV/℃

High Driver Regulator
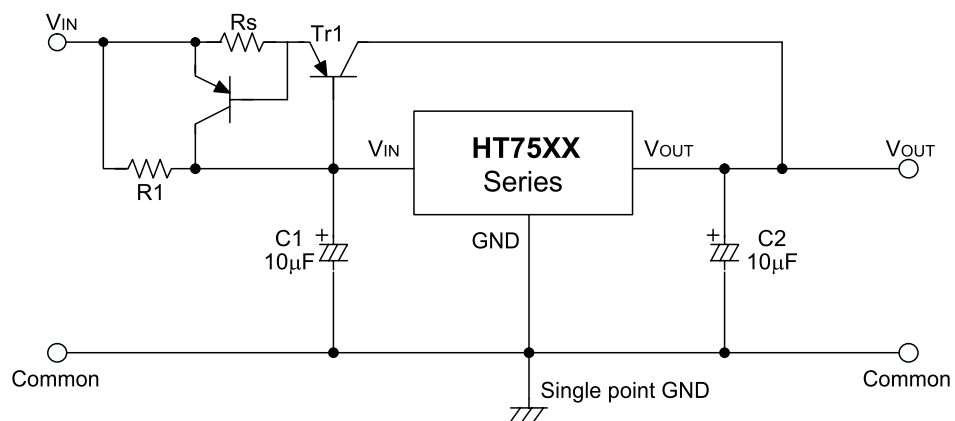## HT75XX

■ Typical Characterisitics

Basic circuit

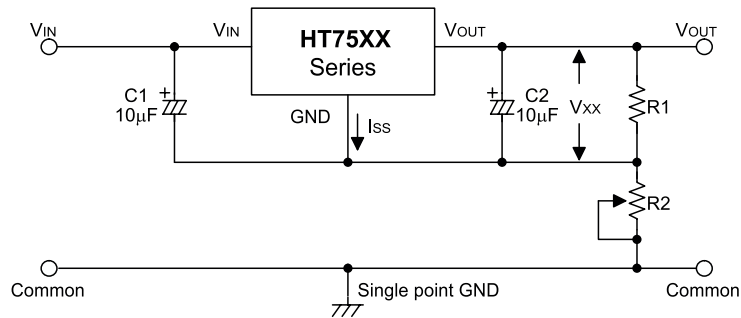High output current positive voltage regulator
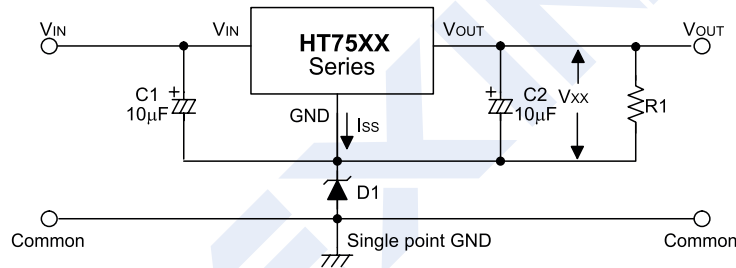

Short-Circuit protection for Tr1

High Driver Regulator
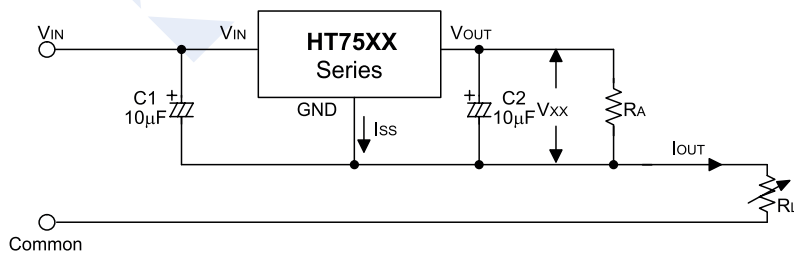# HT75XX

■ Typical Characterisitics

$$V_{OUT} = V_{XX} \left(1 + \frac{R2}{R1} \right) + I_{SS} R2$$
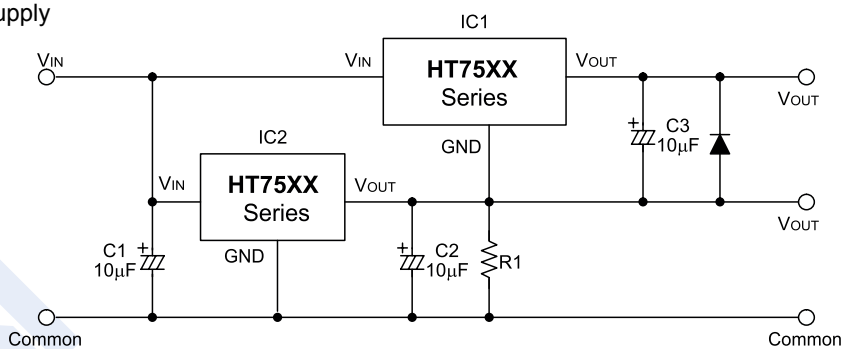
Circuit for increasing output voltage

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

Constant current regulator

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

Dual supply

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