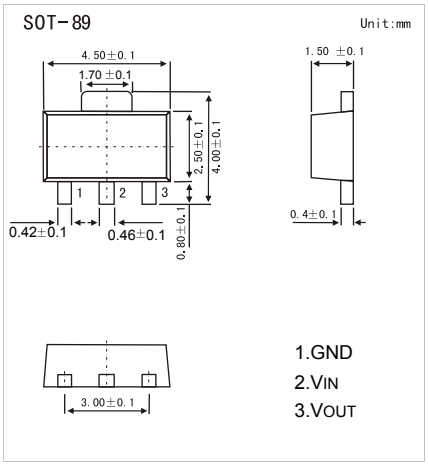
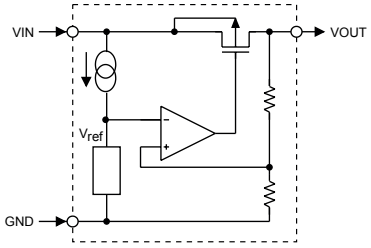
SMD Type IC

■ Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- High input voltage (up to 24V)





Selection Table

Part No.	Output Voltage	Tolerance
HT7130	3.0V	±5%
HT7133	3.3V	±5%
HT7136	3.6V	±5%
HT7144	4.4V	±5%
HT7150	5.0V	±5%

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Supply Voltage		-0.3 to 28	V
Power Consumption	P_C	200	mW
Junction Temperature	T_J	125	℃
Operating Temperature	T_{op}	0 to 70	
Storage Temperature range	T_{stg}	-50 to 125	

■ Electrical Characteristics Ta = 25℃

HT7130, +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
Input Voltage	V_{IN}	-				24	
Load Regulation	$\triangle V_{OUT}$	5V	1mA≤ I_{OUT} ≤ 20mA		60	100	mV
Voltage Drop	V_{DIF}	-	I_{OUT}=1mA		100		
Output Current	I_{OUT}	5V		20	30		mA
Current Consumption	I_{SS}	5V	No load		4	6	uA
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} X V_{OUT}}$	-	4V ≤ V_{IN} ≤ 24V I_{OUT}=1mA		0.2		%/V
Temperature Coefficient	$\frac{\triangle V_{OUT}}{\triangle Ta}$	5V	I_{OUT}=10mA 0 ℃<Ta<70 ℃		±0.45		mV/℃

HT7133, +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	3.135	3.3	3.465	V
Input Voltage	V_{IN}	-				24	
Load Regulation	$\triangle V_{OUT}$	5.5V	1mA≤ I_{OUT} ≤ 30mA		60	100	mV
Voltage Drop	V_{DIF}	-	I_{OUT}=1mA		100		
Output Current	I_{OUT}	5.5V		20	30		mA
Current Consumption	I_{SS}	5.5V	No load		4	6	uA
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} X V_{OUT}}$	-	4.5V ≤ V_{IN} ≤ 24V I_{OUT}=1mA		0.2		%/V
Temperature Coefficient	$\frac{\triangle V_{OUT}}{\triangle Ta}$	5.5V	I_{OUT}=10mA 0 ℃<Ta<70 ℃		±0.5		mV/℃

HT7136, +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
Input Voltage	V_{IN}	-				24	
Load Regulation	$\triangle V_{OUT}$	5.6V	1mA≤ I_{OUT} ≤ 30mA		60	100	mV
Voltage Drop	V_{DIF}	-	I_{OUT}=1mA		60		
Output Current	I_{OUT}	5.6V		20	30		mA
Current Consumption	I_{SS}	5.6V	No load		3	7	uA
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} X V_{OUT}}$	-	4.6V ≤ V_{IN} ≤ 12V I_{OUT}=1mA		0.2		%/V
Temperature Coefficient	$\frac{\triangle V_{OUT}}{\triangle Ta}$	5.6V	I_{OUT}=10mA 0 ℃<Ta<70 ℃		±0.6		mV/℃

■ Electrical Characteristics Ta = 25℃

HT7144, +4.4V output type

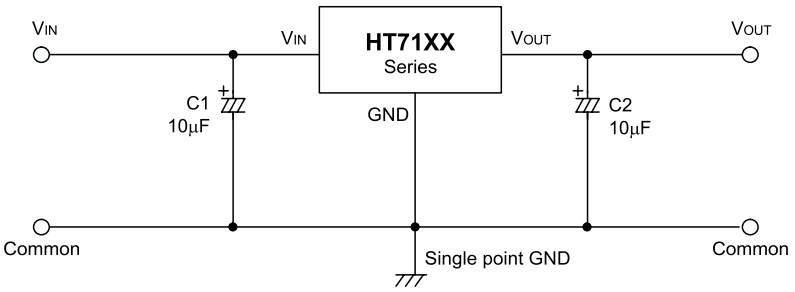
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage Tolerance	V_{OUT}	6.4V	I_{OUT}=10mA	4.18	4.4	4.62	V
Input Voltage	V_{IN}	-				24	
Load Regulation	$\triangle V_{OUT}$	6.4V	1mA≤ I_{OUT} ≤ 30mA		60	100	mV
Voltage Drop	V_{DIF}	-	I_{OUT}=1mA		100		
Output Current	I_{OUT}	6.4V		20	30		mA
Current Consumption	I_{SS}	6.4V	No load		4	7.5	uA
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} X V_{OUT}}$	-	5.4V ≤ V_{IN} ≤ 24V I_{OUT}=1mA		0.2		%/V
Temperature Coefficient	$\frac{\triangle V_{OUT}}{\triangle Ta}$	6.4V	I_{OUT}=10mA 0 ℃<Ta<70 ℃		±0.7		mV/℃

HT7150, +5.0V output type

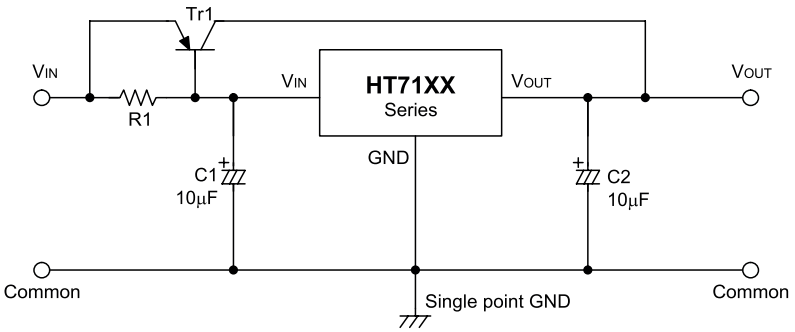
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
		V_{IN}	Conditions				
Output Voltage Tolerance	V_{OUT}	7V	I_{OUT}=10mA	4.75	5	5.25	V
Input Voltage	V_{IN}	-				24	
Load Regulation	$\triangle V_{OUT}$	7V	1mA≤ I_{OUT} ≤ 30mA		60	100	mV
Voltage Drop	V_{DIF}	-	I_{OUT}=1mA		100		
Output Current	I_{OUT}	7V		20	30		mA
Current Consumption	I_{SS}	7V	No load		5	9	uA
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} X V_{OUT}}$	-	6V ≤ V_{IN} ≤ 24V I_{OUT}=1mA		0.2		%/V
Temperature Coefficient	$\frac{\triangle V_{OUT}}{\triangle Ta}$	7V	I_{OUT}=10mA 0 ℃<Ta<70 ℃		±0.75		mV/℃

■ Application Circuits

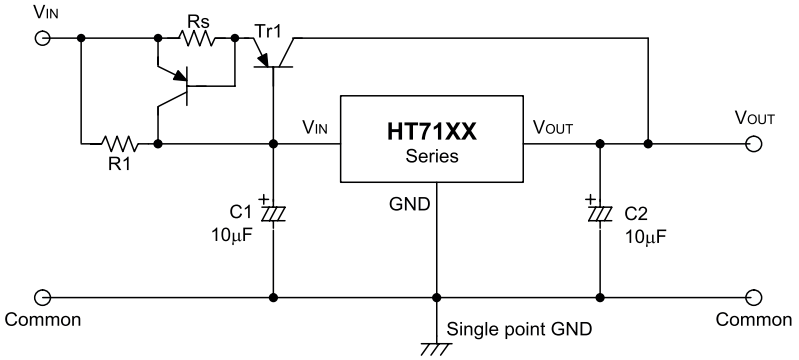
Basic circuits



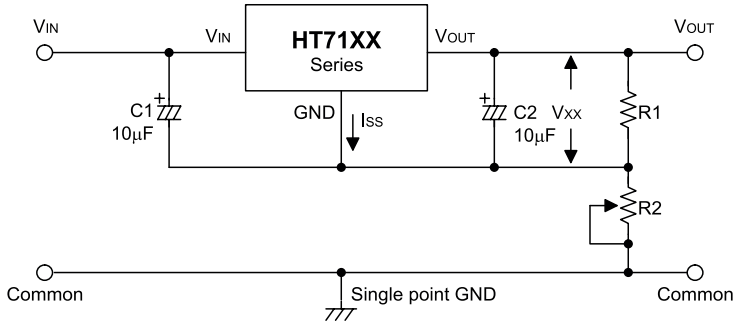
High output current positive voltage regulator



Short-Circuit protection by Tr1



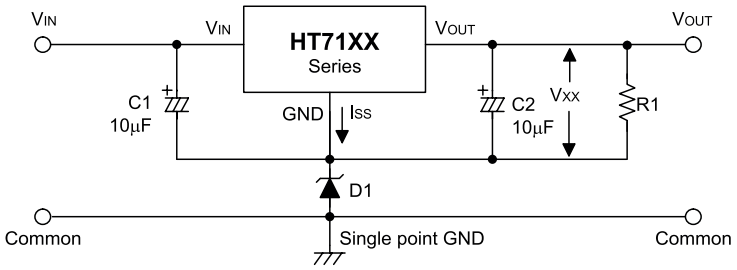
Circuit for increasing output voltage



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

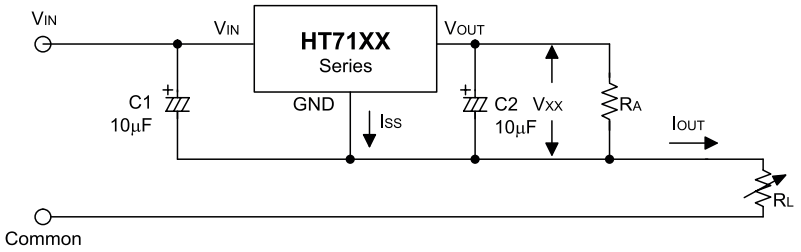
■ Application Circuits

Circuit for increasing output voltage



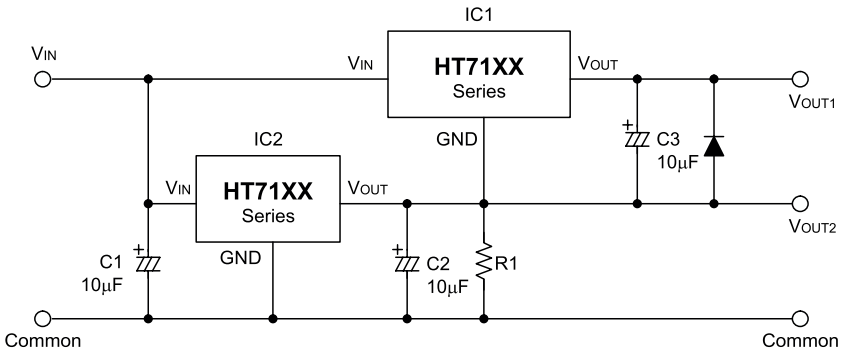
$$V_{OUT}=V_{XX}+V_{D1}$$

Constant current regulator



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

Dual supply



Package Outline

Dimensions in mm

