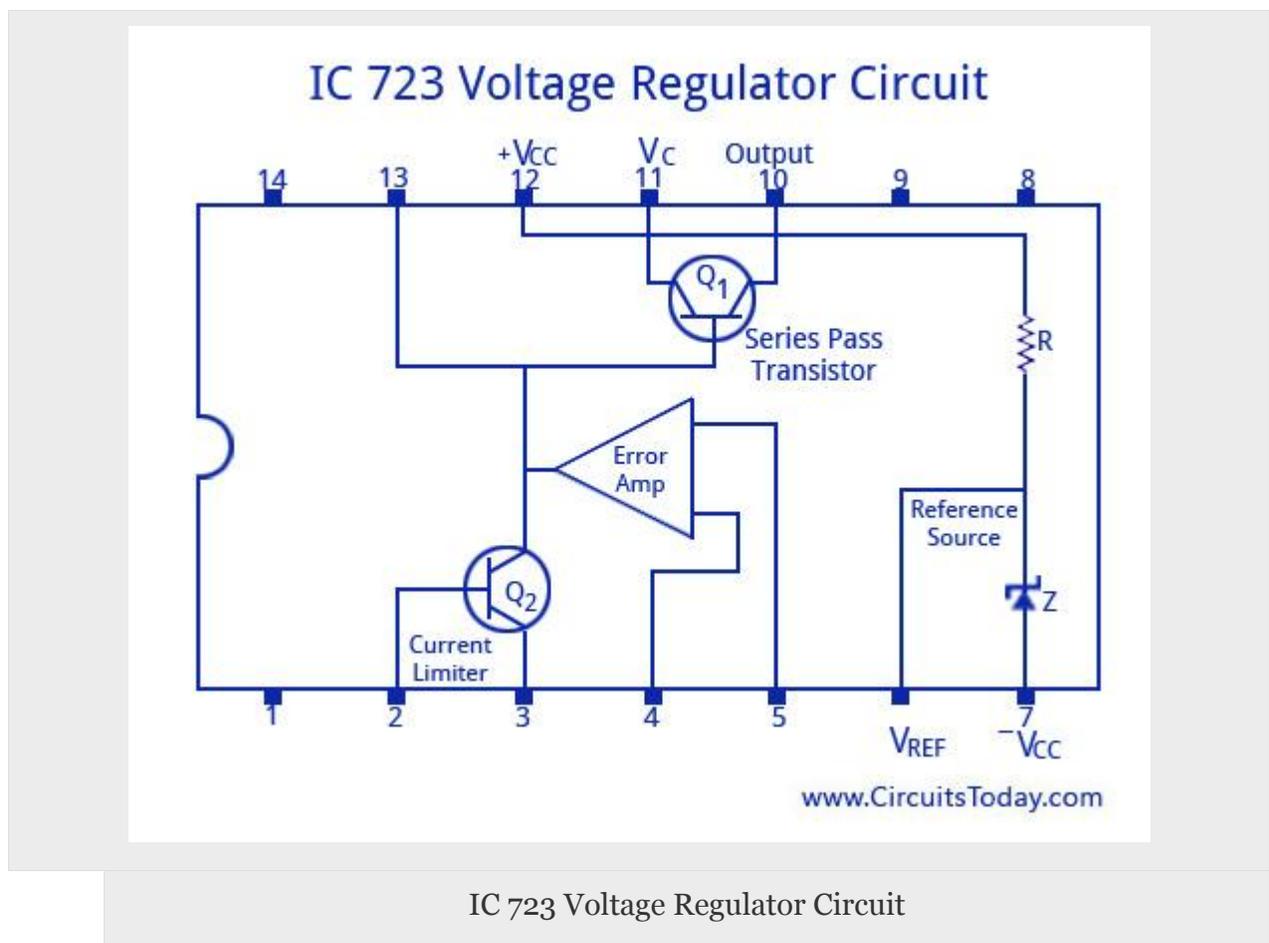


IC 723 VOLTAGE REGULATORS

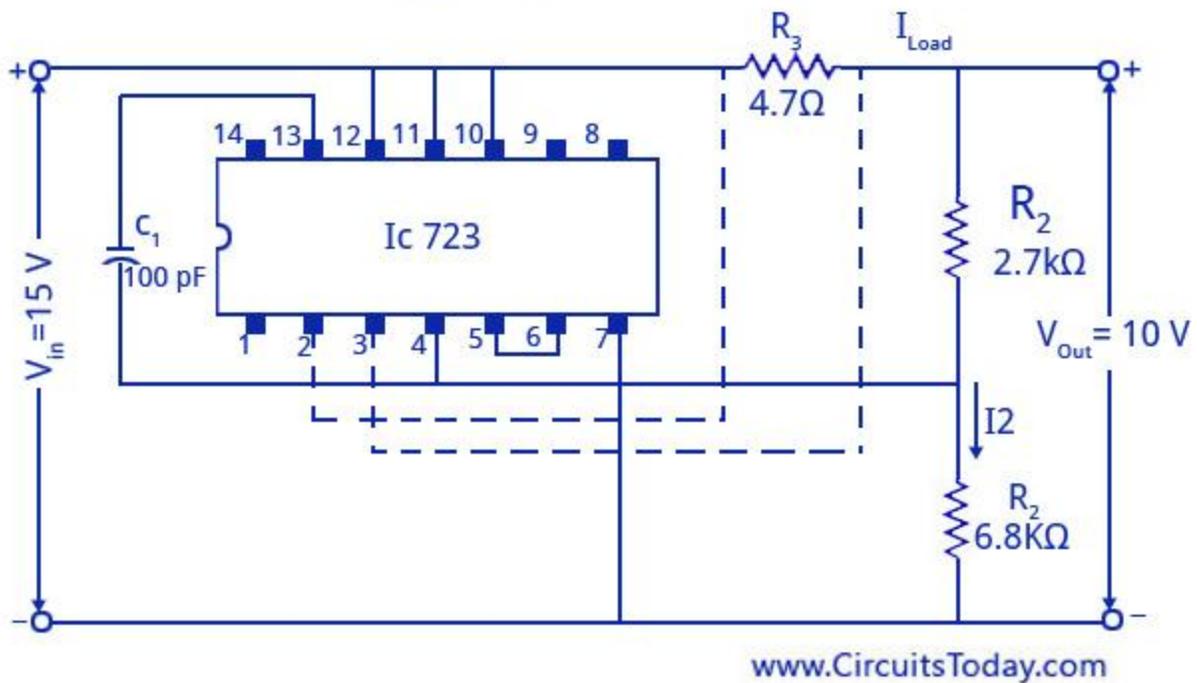
We have already explained in detail about the basics of **regulated power supply**, **voltage regulators** and **IC voltage regulators**. Let us take a look at one of the most popular IC voltage regulators, the 723 Voltage Regulator IC. The functional diagram of the voltage regulator is shown below. It consists of a voltage reference source (Pin 6), an error amplifier with its inverting input on pin 4 and non-inverting input on pin 5, a series pass transistor (pins 10 and 11), and a current limiting transistor on pins 2 and 3. The device can be set to work as both positive and negative voltage regulators with an output voltage ranging from 2 V to 37 V, and output current levels up to 150 mA. The maximum supply voltage is 40 V, and the line and load regulations are each specified as 0.01%.



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The figure shown below is a positive voltage regulator with an IC 723. The output voltage can be set to any desired positive voltage between (7-37) volts. 7 volts is the reference starting voltage. All these variations are brought with the change of values in resistors R1 and R2 with the help of a potentiometer. A darlington connection is made by the transistor to Q1 to handle large load current. The broken lines in the image indicate the internal connections for current limiting. Even foldback current limiting is possible in this IC. A regulator output voltage less than the 7 V reference level can be obtained by using a voltage divider across the reference source. The potentially divided reference voltage is then connected to terminal 5.

Positive Voltage Regulator Using IC 723



Positive Voltage Regulator Using IC 723

Another important point to note about this IC is that the supply voltage at the lowest point on the ripple waveform, should be at least 3 V greater than the output of the regulator and greater than V_{ref} . If it is not so a high-amplitude output ripple is possible to occur.

Source : <http://www.circuitstoday.com/ic-723-voltage-regulators>