

Depending on model, one time (for the TSI10N-xx10) you have to put 2130 as R1 and the other time (for the TSI10N-xx11) you have to put 3840 as R1. Now let's make an example with the TSI 10N-1211. Let's say we want to adjust the output voltage to 5.0Vdc (Vout = 5.0V):

$$R_x = ((3840 \times 1200) \times (5.0 - 1.195)) / ((3840 \times 1.195) - (1200 \times (5.0 - 1.195))) = (4608000 \times 3.805) / (4588.8 - (1200 \times 3.805)) = 17533440 / (4588.8 - 4566) = 17533440 / 22.8 = 769010.526 \text{ Ohm} = R_x = 769.010\text{kOhm} \Rightarrow \text{To adjust Vout to 5.0Vdc you have to use a 806kE resistor (768kOhm / 1\% Resistor)}$$

An other example, when Vout = 3.0V than also with the TSI 10N-1211:

$$R_x = ((3840 \times 1200) \times (3.0 - 1.195)) / ((3840 \times 1.195) - (1200 \times (3.0 - 1.195))) = (4608000 \times 1.805) / (4588.8 - (1200 \times 1.805)) = 8317440 / (4588.8 - 2166) = 8317440 / 2422.8 = 3432.987 \text{ Ohm} = 3.433\text{kOhm} \Rightarrow \text{To adjust Vout to 3.0Vdc you have to use a 3.40kE resistor (3.40kOhm / 1\% Resistor)}$$

In case you would be using a TSI 10N-1210 than you have to replace all 3840 with 2130 but keep in mind that the output voltage can be adjusted only between 1.8 and 3.3Vdc. Example to adjust the output voltage to 3.3Vdc

$$R_x = ((2130 \times 1200) \times (3.0 - 1.195)) / ((2130 \times 1.195) - (1200 \times (3.0 - 1.195))) = (2556000 \times 1.805) / (2545.35 - (1200 \times 1.805)) = 4613580 / (2545.35 - 2166) = 4613580 / 379.35 = 12161.803 \text{ Ohm} = R_x = 12.162\text{kOhm} \Rightarrow \text{To adjust Vout to 3.0Vdc you have to use a 12.1kE resistor (12.1kOhm / 1\% Resistor)}$$

An other example, when Vout = 1.8V than also with the TSI 10N-1210:

$$R_x = ((2130 \times 1200) \times (1.8 - 1.195)) / ((2130 \times 1.195) - (1200 \times (1.8 - 1.195))) = (2556000 \times 0.605) / (2545.35 - (1200 \times 0.605)) = 1546380 / (2545.35 - 726) = 1546380 / 1819.35 = 849.963 \text{ Ohm} = R_x = 850\text{Ohm} \Rightarrow \text{To adjust Vout to 1.8Vdc you have to use a 845E resistor (845Ohm / 1\% Resistor)}$$

I hope these examples explain the formula on page 4 of the TSI 10N datasheet.

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