# APPLICATION NOTES

## SP/SPW Series Trim Function

The following information is provided to allow quick calculation of the trim resistor value for a desired output voltage. The general procedure for calculating a trim resistor is as follows:

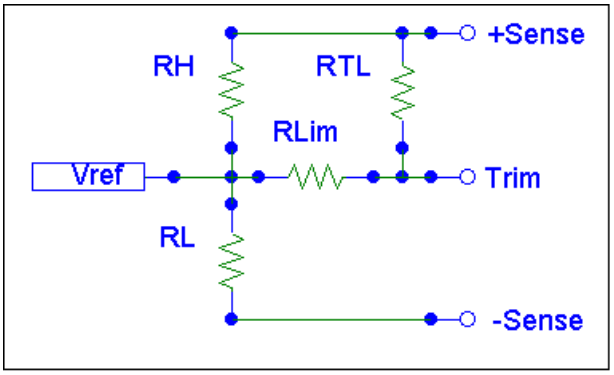
1. Determine the desired output voltage (Vo)
2. Select Equation. (Trim Low/Trim High)
3. Use the data in Table 1 to complete the equation.
4. Evaluate.

In order to trim low use Equation 1 and Table 1 to calculate resistor RTL for the desired output voltage.

**Equation 1: Trim Low**

$$RT_L = \left[ \frac{V_o - V_{REF}}{(V_{REF}/R_L) - (1/R_H \cdot (V_o - V_{REF}))} \right] - R_{LIM}$$

*Vo - Desired output voltage.*
*All resistor values in K ohms.*



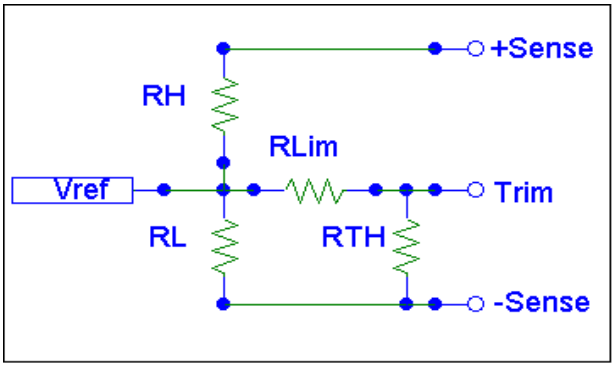

**Schematic 1: Trim Low**

In order to trim high use Equation 2 and Table 1 to calculate resistor RTH for the desired output voltage.

**Equation 2: Trim High**

$$RT_H = \left[ \frac{V_{REF}}{\left(\frac{V_o - V_{REF}}{R_H}\right) - \left(\frac{V_{REF}}{R_L}\right)} \right] - R_{LIM}$$

*Vo - Desired output voltage.*
*All resistor values in K ohms.*




**Schematic 2: Trim High**

| MODEL (Output Voltage) | $R_H$ (K OHMS) | $R_{LIM}$ (K OHMS) | $R_L$ (K OHMS) | $V_{REF}$ (VOLTS) |
|---|---|---|---|---|
| 3.3V | 0.750 | 0.499 | 2.32 | 2.495 |
| 5.0V | 2.49 | 10.0 | 2.49 | 2.495 |
| 8.0V | 5.49 | 10.0 | 2.49 | 2.495 |
| 9.0V | 6.49 | 10.0 | 2.49 | 2.495 |
| 12.0V | 9.53 | 13.7 | 2.49 | 2.495 |
| 15.0V | 12.4 | 13.7 | 2.49 | 2.495 |
| 24.0V | 21.5 | 15.4 | 2.49 | 2.495 |
| 26.0V | 17.6 | 15.4 | 1.87 | 2.495 |
| 32.0V | 23.7 | 12.7 | 2.00 | 2.495 |

**Table 1 : Trim Low/High Data Table.**

Note: Output trim +/- 10% max.