

DATA SHEET / DC CIRCUIT REGULATION

Name:

Resistors: (number:) $R_L = \dots\dots\dots \text{k}\Omega$, (letter:) $R = \dots\dots\dots \text{k}\Omega$

Helipot: (....) $R_H = \dots\dots\dots \text{k}\Omega$

Source: (....) $U_T \approx \varepsilon = \dots\dots\dots \text{V}$

$$R_1 = n/1000 \cdot R_H$$

1. Serial regulation

R_1		I	$1/I$
n	[k Ω]	[mA]	[1/mA]
0			
100			
200			
300			
400			
500			
600			
700			
800			
900			
1000			

$$\frac{1}{I} = \frac{1}{\varepsilon} \cdot R_1 + \frac{R_L + R_m}{\varepsilon}$$

least squares method:

$$y = a \cdot x + b$$

$$x \Leftrightarrow R_1$$

$$y \Leftrightarrow 1/I$$

$$a \Leftrightarrow 1/\varepsilon$$

$$b \Leftrightarrow (R_L + R_m)/\varepsilon$$

here $R_m = R_i + R_A$

2. Potentiometric regulation

R_1		U with R	U without R
n	[k Ω]	[V]	[V]
0			
50			
100			
150			
200			
250			
300			
350			
400			
500			
600			
700			
800			
900			
1000			

without R:

$$U = \frac{\varepsilon}{R_H + R_i} \cdot R_1$$

least squares method:

$$y = a \cdot x$$

$$x \Leftrightarrow R_1$$

$$y \Leftrightarrow U$$

$$a \Leftrightarrow \varepsilon / (R_H + R_i)$$