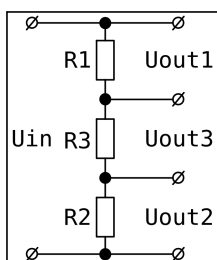


Украина. (С) Демидов С.В. Собственное творчество...



$$R1 = 1000, R3 = 3000, R2 = 2000, U_{in} = 10B$$

$$U_{out1} = \frac{R1}{R1 + R3 + R2} \cdot U_{in} = \frac{1000}{1000 + 3000 + 2000} \cdot 10 =$$

$$= \frac{1000}{6000} \cdot 10 = 0.166 \cdot 10 = 1.66B$$

$$U_{out3} = \frac{R3}{R1 + R3 + R2} \cdot U_{in} = \frac{3000}{1000 + 3000 + 2000} \cdot 10 =$$

$$= \frac{3000}{6000} \cdot 10 = 0.5 \cdot 10 = 5B$$

$$U_{out2} = \frac{R2}{R1 + R3 + R2} \cdot U_{in} = \frac{2000}{1000 + 3000 + 2000} \cdot 10 =$$

$$= \frac{2000}{6000} \cdot 10 = 0.333 \cdot 10 = 3.33B$$

$$U_{in} = U_{out1} + U_{out3} + U_{out2} = 1.66B + 5B + 3.33B = 10B$$

$$U_{in} = \frac{R1 + R3 + R2}{R1} \cdot U_{out1} = \frac{1000 + 3000 + 2000}{1000} \cdot 1.66 =$$

$$= \frac{6000}{1000} \cdot 1.66 = 6 \cdot 1.66 = 10B$$

$$U_{in} = \frac{R1 + R3 + R2}{R3} \cdot U_{out3} = \frac{1000 + 3000 + 2000}{3000} \cdot 5 =$$

$$= \frac{6000}{3000} \cdot 5 = 2 \cdot 5 = 10B$$

$$U_{in} = \frac{R1 + R3 + R2}{R2} \cdot U_{out2} = \frac{1000 + 3000 + 2000}{2000} \cdot 3.33 =$$

$$= \frac{6000}{2000} \cdot 3.33 = 3 \cdot 3.33 = 10B$$

$$R1 = \frac{U_{in} \cdot (R3 + R2)}{U_{out3} + U_{out2}} - (R3 + R2) = \frac{10 \cdot (3000 + 2000)}{5 + 3.33} -$$

$$- (3000 + 2000) = \frac{10 \cdot 5000}{8.33} - 5000 = \frac{50000}{8.33} - 5000 =$$

$$= 6000 - 5000 = 1000\Omega$$

$$R3 = \frac{U_{in} \cdot (R1 + R2)}{U_{out3}} - (R1 + R2) = \frac{10 \cdot (1000 + 2000)}{5} -$$

$$- (1000 + 2000) = \frac{10 \cdot 3000}{5} - 3000 = \frac{30000}{5} - 3000 =$$

$$= 6000 - 3000 = 3000\Omega$$

$$R2 = \frac{U_{in} \cdot (R1 + R3)}{U_{out1} + U_{out3}} - (R1 + R3) = \frac{10 \cdot (1000 + 3000)}{1.66 + 5} -$$

$$- (1000 + 3000) = \frac{10 \cdot 4000}{6.66} - 4000 = \frac{40000}{6.66} - 4000 =$$

$$= 6000 - 4000 = 2000\Omega$$

$$R_{общ} = \frac{U_{in} \cdot (R3 + R2)}{U_{out3} + U_{out2}} = \frac{10 \cdot (3000 + 2000)}{5 + 3.33} =$$

$$= \frac{10 \cdot 5000}{8.33} = \frac{50000}{8.33} = 6000\Omega$$

$$R_{общ} = \frac{U_{in} \cdot (R1 + R2)}{U_{out3}} = \frac{10 \cdot (1000 + 2000)}{5} =$$

$$= \frac{10 \cdot 3000}{5} = \frac{30000}{5} = 6000\Omega$$

$$R_{\text{общ}} = \frac{U_{\text{in}} \cdot (R1 + R3)}{U_{\text{out1}} + U_{\text{out3}}} = \frac{10 \cdot (1000 + 3000)}{1.66 + 5} =$$

$$= \frac{10 \cdot 4000}{6.66} = \frac{40000}{6.66} = 6000 \text{ Ом}$$

Потребляемый ток:

$$I = \frac{U_{\text{in}}}{R1 + R3 + R2} = \frac{10}{1000 + 3000 + 2000} = \frac{10}{6000} = 0.00166 \text{ А}$$

Рассеиваемая мощность на $R1$, $R3$, $R2$:

$$P1 = \frac{U_{\text{out1}} \cdot U_{\text{out1}}}{R1} = \frac{1.66 \cdot 1.66}{1000} = 0.00275 \text{ Вт}$$

$$P3 = \frac{U_{\text{out3}} \cdot U_{\text{out3}}}{R3} = \frac{5 \cdot 5}{3000} = 0.00833 \text{ Вт}$$

$$P2 = \frac{U_{\text{out2}} \cdot U_{\text{out2}}}{R2} = \frac{3.33 \cdot 3.33}{2000} = 0.00554 \text{ Вт}$$

$$P_{\text{общ}} = P1 + P2 + P3 = 0.00275 + 0.00833 + 0.00554 = 0.01662 \text{ Вт}$$
