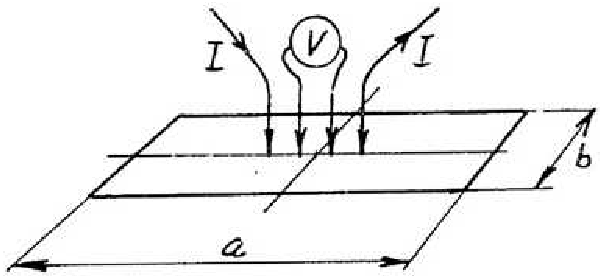
K.2) Narrow, Rectangular Slice.




thickness $t < \frac{s}{2}$

When b is smaller than 3 to 4 times s, it is convenient to express the resistivity is this way:

$$\rho = G \cdot \frac{V}{I}, \qquad G = t \cdot \frac{b}{s} \cdot \quad R_2\left(\frac{b}{s},\frac{a}{b}\right) \tag{26}$$

If $R_2 = 1$, we can write the resistance $\frac{V}{I}$ as

$\frac{V}{I} = \rho \cdot \frac{s}{b \cdot t}$ , which is the resistance of a conductor of resistivity $\rho$ ,length s and area b · t.

So, $R_2 = 1$ corresponds to constant current density in the sample between the voltage probes. As $\frac{b}{s}$ increases, the current density becomes lower far from the probes, and $R_2$ decreases. $R_2$ was computed and tabulated by Smits (e). The results are tabulated below and plotted at page 59.

$R_2(\frac{b}{s},\frac{a}{b})$

| $\frac{b}{s}$ | $\frac{a}{b} = 1$ | $\frac{a}{b} = 2$ | $\frac{a}{b} = 3$ | $\frac{a}{b} \geq 4$ |
|---|---|---|---|---|
| 1 | | | 0,9988 | 0,9994 |
| 1,25 | | | 0,9973 | 0,9974 |
| 1,5 | | 0,9859 | 0,9929 | 0,9929 |
| 1,75 | | 0,9826 | 0,9850 | 0,9850 |
| 2 | | 0,9727 | 0,9737 | 0,9737 |
| 2,5 | | 0,9413 | 0,9416 | 0,9416 |
| 3 | 0,8192 | 0,9000 | 0,9002 | 0,9002 |
| 4 | 0,7784 | 0,8061 | 0,8062 | 0,8062 |
| 5 | 0,7020 | 0,7150 | 0,7150 | 0,7150 |