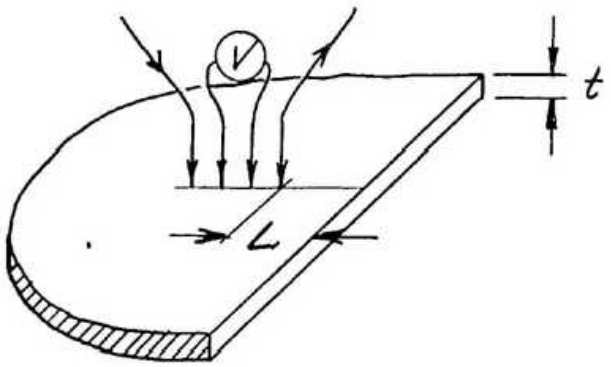
E.3) Probe Array Perpendicular to Edge, Thin Sample.



$t \leq 2s$

When the sample is thin, it is convenient to express the resistivity as follows :

$$\rho = G\frac{V}{I}, \qquad G = \frac{\pi}{\ln 2} \cdot t \cdot D_3\left(\frac{L}{s}\right) \cdot F_2\left(\frac{t}{s}, \frac{L}{s}\right) \tag{13}$$

where

$\frac{\pi}{\ln 2} \cdot t = 4.5324 \cdot t$ is the geometric factor for an infinite slice of thickness $t \ll s$,

$$D_3\left(\frac{L}{s}\right) = \frac{1}{1 + \frac{1}{2\ln 2} \ln \frac{\left(\frac{L}{s} + 2\right)\left(\frac{L}{s} + 1\right)}{\left(\frac{L}{s} + \frac{5}{2}\right)\left(\frac{L}{s} + \frac{1}{2}\right)}} \tag{14}$$

is the additional correction to apply when measuring at a distance L from the edge.

$D_3\left(\frac{L}{s}\right) \longrightarrow 1$ as $\frac{L}{s} \rightarrow \infty$

$F_2\left(\frac{t}{s}, \frac{L}{s}\right)$ deviates from unity when the thickness t of the slice becomes comparable to the probe distance s.