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AUTHORS: Löriczy, A., Németh, T., and Szebeni, P.

TITLE: Observations on germanium-metal contacts used as probes for injected carriers

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TEXT: The note reports some experimental peculiarities obtained on measuring the diffusion length by the Morton-Haynes method in n-type, Sb-doped, Ge-single crystals of  $25 \Omega \text{ cm}$  and  $6 \Omega \text{ cm}$ , covered with a stabilized oxyd layer. Diffusion length were measured with W and Sn point probes. Results obtained with the Sn probe were about half of those obtained with the W probe. Also the potential of the Sn probe was negative, whilst that of the W probe was, as expected, positive. Voltage current characteristics obtained with the Sn probe show p character for low and n character for higher voltages. On

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measuring the rectifying characteristics with 4.5V 50Hz A.C. the potential of the Sn point becomes positive after "formation" by the alternating voltage, its value decreasing to a positive saturation value after about 10 min. It is probable that before and after "formation" diffusion lengths of majority and minority carrier respectively are measured. Surface states seem to be involved in these phenomena.

ASSOCIATION: Forschungs Institut für Technische Physik d. Ungarischen Akademie der Wissenschaften, Budapest (Löriczy, A., Németh, T.,) (Research Institute for Technical Physics of the Hungarian Academy of Sciences, Budapest) and Forschungsinstitut für die Nachrichtentechnische Industrie Budapest (Szebeni, P.) (Research Institute for the Industry of Communication Technique Budapest).

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