

THE TRANSISTOR

SELECTED REFERENCE MATERIAL ON CHARACTERISTICS & APPLICATIONS

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FOREWORD

The material included herein covers the same ground and supplements the talks given at a symposium on transistors, which was held at the Bell Telephone Laboratories during the week beginning September 17, 1951.

In the three odd years since the transistor was announced, work has been going on to study and perfect this device in order to make it a useful and reliable tool for general application. With ultimate success along these lines now seemingly assured, it appeared desirable to spread the available information widely in order to aid the military effort.

In this volume, as in the symposium, the treatment follows the general sequence of: theory, transistor properties, circuit design principles, application and, finally, characteristics of different transistor types now under development. In the short time since the invention of the transistor, an enormous amount of information on physics, device properties and circuit applications has evolved. It is the purpose of this volume to provide enough representative material to give a picture of the current status. Included are published technical articles, reports of work carried on under contracts with the military services, and supplementary memoranda. In the symposium, some of the theory presented was drawn from Dr. William Shockley's book "Electrons and Holes in Semiconductors". The pertinent chapters have not been included as they were considered to be too voluminous.

It will be recognized that, in a broad sense, this constitutes but a progress report. The art is moving rapidly. There are still many problems to be solved and some of the material given may be soon out of date. It is too early for a full appraisal of the extent to which the transistor may find its place in the field of electronics. Just now it is a promising infant trying to shed its swaddling clothes. It is hoped that this reference material will assist in this effort.

Bell Telephone Laboratories, Inc.
Murray Hill, N. J.
November 15, 1951

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