

JIS

JAPANESE INDUSTRIAL STANDARD

**Measurement of Minority Carrier
Life Time in Germanium by
Photoconductive Decay Method**

JIS H 0603—1978

Translated and Published

by

Japanese Standards Association

Printed in Japan

AVA Documents
Document Sharing Hub

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

JAPANESE INDUSTRIAL STANDARD

J I S

Measurement of Minority Carrier
Life Time in Germanium by
Photoconductive Decay MethodH 0603-1978
(Reaffirmed: 1983)1. Scope

This Japanese Industrial Standard specifies the method of minority carrier life time, hereinafter referred to as the "life time", in germanium single crystal by photoconductive decay method. The single crystal to be measured has homogeneous composition and the value of its life time shall be within a range of 5 to 1000 μ s.

2. Test Single Crystal

2.1 The single crystal shall be of a prism and its size shall be sufficiently large relative to the value of the life time to be measured.

The relation between the minimum size of a sample and the maximum value of life time capable of being measured is given in Tables 1 and 2.

Table 1. Size of Test Single Crystal

Unit: cm		
Class	Length	Section
I	1.5	0.25 x 0.25
II	2.5	0.5 x 0.5
III	2.5	1.0 x 1.0

Table 2. Maximum Life Time Capable of Being Measured
(Theoretical Value)

Unit: μ s			
Class	I	II	III
Conductive type			
P type	32	125	460
N type	64	250	950

2.2 The surface of a test single crystal shall be of a polishing finish.

2.3 The lead wire of a non-rectifying property is attached to both ends of the specimen single crystal by soldering or plating and other suitable method. In that case, the sample is treated at a temperature of not higher than 300°C.