PATRIMOINE SCIENTIFIQUE TECHNIQUE CONTEMPORAIN

PRÉSERVER
SAUVEGARDER
VALORISER

IMPRIMANTE POUR TRACEUR DE COURBE TEKTRONIX HC 200

FICHE N° 3553

Période de fabrication : 1975-1999
Fabricant : TEKTRONIX
Domaines : Physique
Sous-domaines : Electronique
Organisme : Université de Rennes, Campus de Beaulieu
Ville : Rennes
Modèle : HC 200
Matériaux : Papier

Description
Cette imprimante Tektronix HC 200 était connectée à un traceur de courbe et permettait de faire des "sorties imprimantes" des caractéristiques de composants électroniques comme des diodes et des transistors.

Utilisation
Les étudiants de travaux pratiques d'électronique de la faculté des sciences de Rennes utilisaient cette imprimante pour reproduire sur feuille les courbes caractéristiques de composants électroniques et en déduire leurs propriétés.

REVERSEDvoltage.

Connect a zener diode in the diode socket in reversed direction. Change Va max. with the right arrow key to the appropriate value for the zener diode.
Press START.
After acquisition press STORE.

To measure the forward characteristic of the zener diode, connect the zener in forward direction.
Press START.
On one picture, the forward characteristic as well as the zener characteristic are presented. (Fig. 3-15)

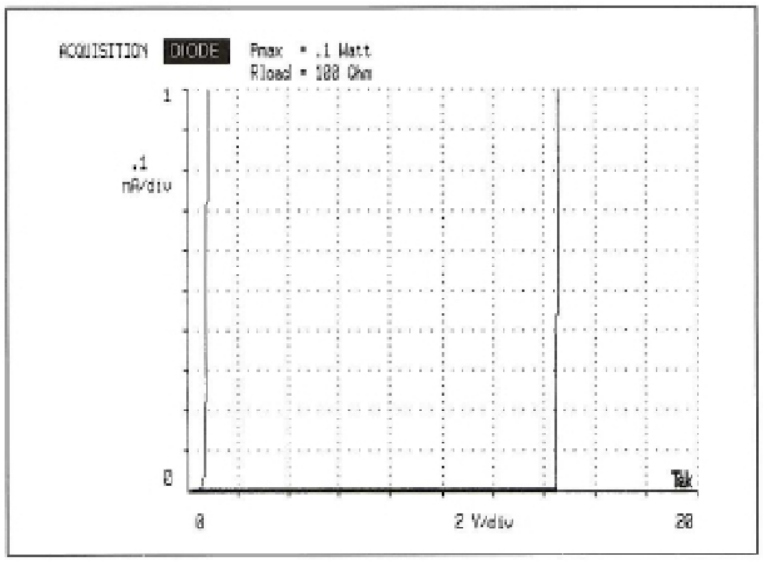

Fig. 3-15 Zener diode curve in forward and reversed direction.

PINCH OFF voltage.

Press MENU and select by using the arrow keys:

Vds max.	5 V.
Id max .	0.05 mA.
Vg/step	0.1 V.
Offset	– 2.150 V.
Rload	100 Ω

Press START. This will result in a picture of the pinch off region of the DUT. (Fig. 3-13)
Using the cursors, you can determine exactly at which curve the DUT starts to conduct. By changing the offset voltage, the pinch off voltage can be measured within 25 mV.

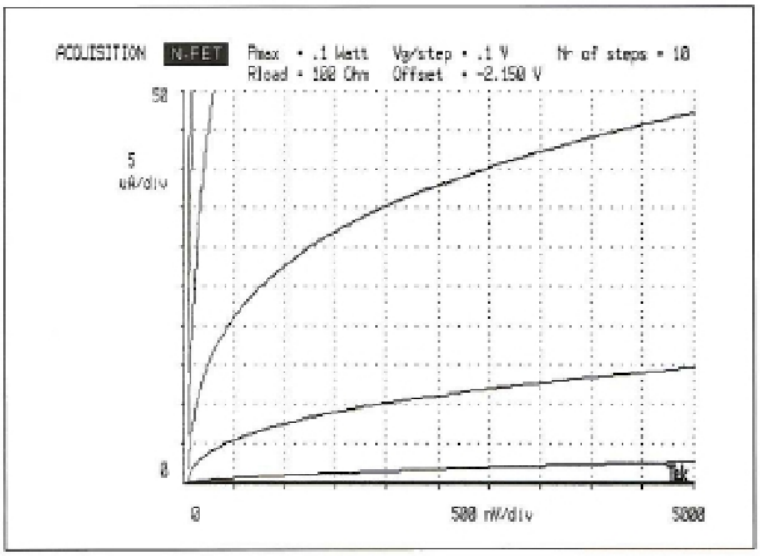

Fig. 3-13 Pinch off voltage curves.

H - PARAMETER measurements.
[hFE, hfe, hoe]

Static h-parameter measurement (h_{FE}).

h_{FE} - Create the curves according to the default settings, as indicated at the Vce - Ic test. (See figure below). Press CURSOR and notice the cursors appear in the middle of the lowest curve. The h_{FE} at the position of the blinking cursor is printed in the lower left corner of the display. The cursor can be moved by the horizontal arrow keys along the curve. After the arrow key is released, the h_{FE} is updated for the new cursor location.

Small signal h-parameter measurements (h_{fe}, h_{oe}).

h_{fe} - Move one cursor to a specific position, for instance the highest curve at 4 V. Press CURSOR to swap the activity and move the other cursor to the same voltage, one curve below. Δic divided by Δib gives the hfe under these specified conditions of collector current and collector voltage.

h_{oe} - Move both cursors to the same curve (with the vertical arrow keys). One for instance at 2 V , the other at 4 V. Δ Ic divided by ΔVce gives the hoe under these specified conditions of collector current and collector voltage.