

The new industry standard 370 and 371 curve tracers provide dc parameter characterization of transistors, diodes, SCRs, MOSFETs, optoelectronic components, solar cells, solid state displays and other semiconductor devices. The 370 and 371 provide measurements to compare a device to the manufacturer's specifications, identification of components with the same characteristics and failure analysis.

Typical measurements include leakage, breakdown voltages up to 3000 V, MOSFET $g_m/I_{dss}/V_{gs(th)}/I_{gss}$, $V_{dr}/V_{dr}/I_{dr}/I_{rr}/V_{gt}/I_{gt}$, DIODE $V_f/PIV/I_r$, ZENER V_z/I_z resistance as well as other dc parameters.

PROGRAMMABLE CONTROL

With non-volatile memory cartridges, the 370/371 provide automatic test sequencing. Also the GPIB interface and a PEP 301 or other IBM compatible PC allow external controller test sequencing. With either method, the 370 or 371 front panel setting can be recalled and measurements made with storage of the results for later review or comparison.

INTERACTIVE CONTROL

The 370 and 371 use the same familiar interactive manual controls that are available on Tektronix 576, 577D1 and 577D2 curve tracers. With interactive control, characterizations can be refined for unique devices during research or design. After the completion of the characterization definition, the interactive setting can be automated by storing the curve tracer setting in the curve tracer's non-volatile memory or an external controller.

DIGITAL STORAGE DISPLAY

The digital storage display provides a bright, flicker-free trace and allows precise measurements and comparisons. There are 100 points per division in the vertical and horizontal directions for high resolution measurements. On-screen readout displays specific values to assure accurate measurements and eliminate interpretation errors.

On-screen annotation with 24 characters of displayed information can be done from either the front panel of 370 and 371 or remotely from an IBM PC compatible controller such as the Tektronix PEP 301.

HARDCOPY

Plotter output data is sent directly from the 370 and 371 without the need for a controller. While plotting, the 370 and 371 can continue performing the next tasks.

INTERFACE

The 370 and 371 provide both a GPIB interface conforming to IEEE Standard 488.1-1987 and with Tektronix codes and formats as well as an 8-bit parallel port supporting HPGL compatible plotters.

TEST FIXTURING

Adapters allow mounting most popular devices for easy test characterizations. For other devices, the blank adapter allows mounting custom sockets.

SOFTWARE

For automated custom device characterization, the 370 Utility Software or 371 Utility Software with an IBM PC such as the Tektronix PEP 301 provides customized tests, consistent measurements and logging of results. The 370 Device Test Software allows automatic characterization of most semiconductor components.

370 CHARACTERISTICS

Range	16 V	80 V	400 V	2000 V
Max Peak Current	10 A	2 A	.4 A	.05 A
Peak Current Pulsed	20 A	4 A	.8 A	.1 A
Min. Series Res. (ohms)	.26	6.4	160	20 k
Max Series Res. (ohms)	800	20 k	500 k	12.5 M

ACQUISITION

In storage mode, information is displayed in one of three ways: normal, envelope or average.

COLLECTOR/EMITTER CURRENT

Measurement range is 100 nA/div (1 nA resolution) to 2 A/div for collector current and 100 pA/div (1 pA resolution) to 2 mA for emitter current.

COLLECTOR/BASE/EMITTER VOLTAGE

Measurement range is 5 mV/div (50 μ V resolution) to 500 V/div for the collector and 5 mV/div (50 μ V resolution) to 2 V/div for base or emitter voltage.

STEP GENERATOR

The step generator has 0 to 10 steps, 50 nA to 200 mA in the current mode and 50 mV to 2 V in the voltage mode. Offset control is variable from -10 to +10X step amplitude. In pulsed mode, the step generator changes from stair step output to either 80 μ s or 300 μ s wide pulses.

AUXILIARY SUPPLY

The auxiliary supply is a third voltage source for biasing devices from -40 V to +40 V with 20 mV resolution.

S370DT

The S370DT is a complete 370 curve tracer system that includes the 370, PEP 301 controller (IBM compatible computer) with GPIB interface/GPIB software/system software, HC100 four color plotter for direct 370 hardcopy, S48P104 Device Test Software for automatic measurements and S48P105 Utility Software for custom device measurements.

S370FA

The 370 automates the task of identifying failed pins on integrated circuits with up to 567 pins. The S370FA is specifically for identification of the pins which have failed before lid removal of integrated circuits. The S370FA system software highlights results from pins that don't match normal performance as well as logs results from all pins for future reference or comparison. The S370FA can be easily reconfigured as a standard 370 with a PEP 301 and GPIB interface.

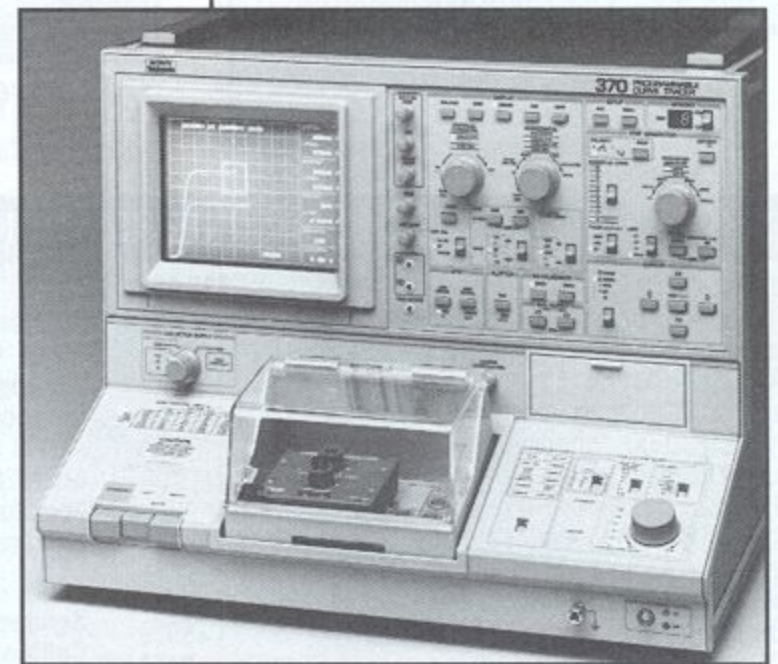
Programmable Curve Tracer

AUTOMATED DEVICE CHARACTERIZATION FOR:

- Manufacturing Processes
- Incoming Inspection
- Semiconductor R & D
- Quality Control
- Component Engineering
- Component Matching
- Failure Analysis

FEATURES

- Automatic Tests Sequences
- Non-Volatile Storage via GPIB Interface
- Waveform Comparison
- Dot Cursor
- Windowing
- Auxiliary Supply
- On Screen Readout
- Envelope Display
- Digital Storage Display and Non-Storage Mode
- Waveform Averaging



370 Curve Tracer