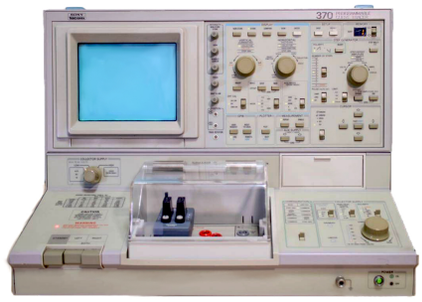
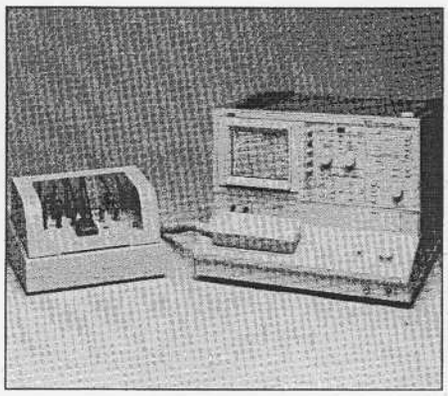
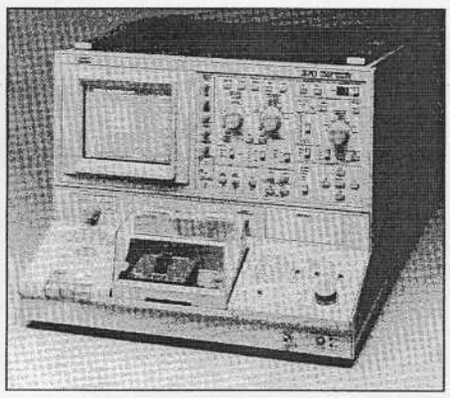
Advanced Test Equipment Corp.
www.atecorp.com 800-404-ATEC (2832)

Tektronix 370
Programmable Curve Tracer



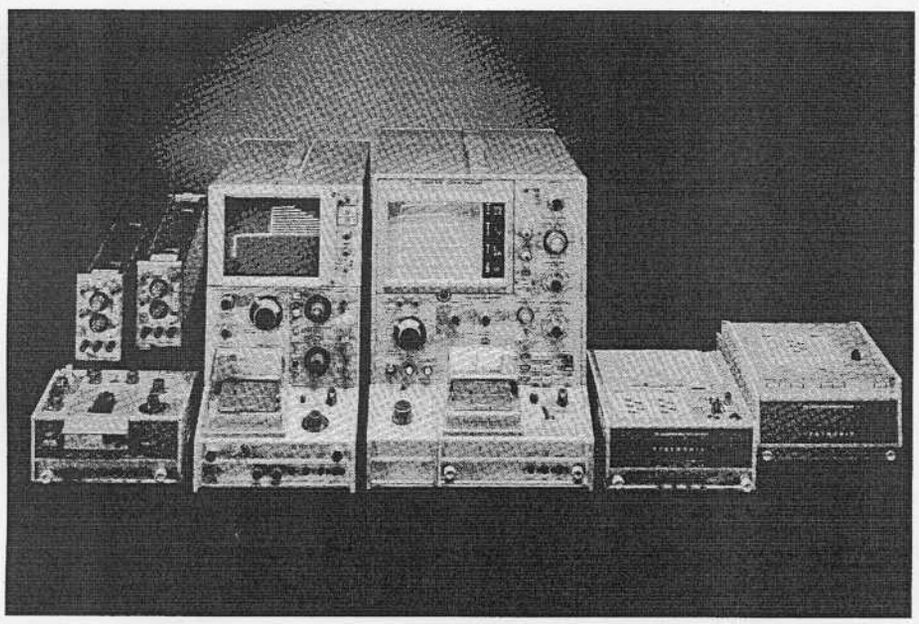
CURVE TRACERS





CONTENTS

The NEW 371 Programmable High-Power Curve Tracer gives fast, repeatable design and troubleshooting data on a wide variety of semiconductor devices. In particular, the 371 is optimized for testing high-power devices and for making relatively high-power tests on more conventional devices, such as bipolar transistors, and FETs. The 371 is ideal for testing solid-state switches and control devices in applications like switching regulators and motor controls.



Pulsed power supplies allow testing devices at peak power limits without overheating or damaging the device under test.

The 370 Programmable Curve Tracer delivers comprehensive information on a range of semiconductor devices and integrated circuits—from two-, three-, and four-terminal devices such as diodes (signal, rectifier, zener); transistors (bipolar, FET); thyristors (SCR, UJT, Triac) to optoelectronic (optoisolator, photodetector), and ICs.

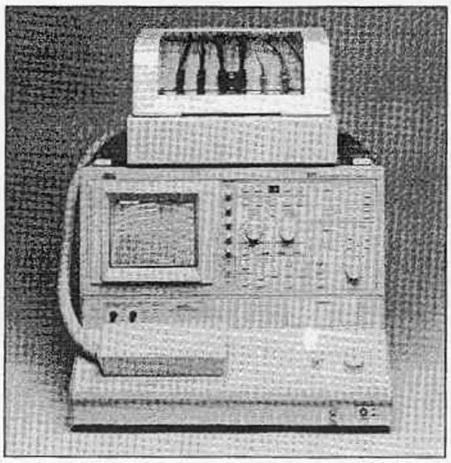
Like other curve tracers, the 370 and 371 reveal more than pinpointed parameters. They show you what happens between specified points in a quickly graphed curve, thus providing the valuable performance data necessary for accurate design, analysis, and evaluation.

In addition, the 370 and 371 offer all the benefits of programmable instrumentation, from curve storage to precise repetition of test parameters and data; from automatic test sequencing to various comparisons of device behavior at different points in time—all with the added capability of computerized control and analysis.

The 576 and 577 Curve Tracers use standard plug-in test fixtures for a variety of low- or high-current applications. The 176 Pulsed High-Current Fixture is designed for use in the 576. The 178 Linear-IC Test Fixture is designed for use in the 577.

The 5CT1N and 7CT1N plug-in units are designed for use in the 5000-Series and 7000-Series oscilloscopes, respectively.

The following Curve-Tracer System descriptions will help you choose the system that best meets your requirements. Additional information is available. Contact your local Sales Engineer.



New 371 High-Power Programmable Curve Tracer

370/NEW 371

Programmable Curve Tracers

GPIB IEEE-488 The 370 and 371 comply with IEEE Standard 488-1978, and with Tektronix *Standard Codes and Formats.*

- **Digitized Waveforms**
- **Bubble-Memory Storage**
  - **Store 16 Test Set-Ups**
  - **Store 16 Families of Curves**
- **GPIB and Plotter Interfaces**
- **Test Sequencing Without Controller**
- **Waveform Comparisons**
- **Display/Waveform Cursors**
- **Displays 24 Characters of Text**
- **On-Screen Readout of Control Settings/Cursor Values**
- **Maximum Volts 2000 (370) and 3000 (371)**
- **Vertical Sensitivity 100 pA/Div (1 pA Resolution) (370)**
- **3 kW Collector Power-Supply Capability (371)**
- **20-A or 50-V Base Drive (371)**

370, 371 TYPICAL APPLICATIONS

Automated Semiconductor Manufacturing Processes
Incoming Inspection
Production Device Testing
Semiconductor R & D

371 TYPICAL APPLICATIONS

Nondestructive Breakdown Tests
High-Power Semiconductor Evaluation

Program Control

The 370/371 are programmable via the IEEE Standard 488 General Purpose Interface Bus (GPIB). This interface provides remote control and automated acquisition of curve data. You can send characteristic-curve data in either direction over the bus (from the 370/371 to the controller, or vice versa).

When using a controller, you can remotely control the front panel except for controls intended for local use only (such as Intensity). The GPIB complies with Tektronix' Interface Standard for GPIB Codes, Formats, Conventions, and Features.

Digitized Waveforms

Display modes are selected by pushbuttons labeled Nonstore, Store, Compare, View, and Enter. When you select Nonstore, the 370/371 operate like conventional curve tracers. When you choose Store, the 370/371 display digitized characteristic curves with a bright, flicker-free trace. The Enter button lets you put the digitized display into bubble memory. The View button recalls displays from memory. With Compare mode, you contrast characteristic curves by displaying Store and View curves simultaneously.

Bubble Memory

The 370/371 provide nonvolatile memory via a bubble-memory cassette plugged into a front-panel opening. Each cassette can store 16 families of curves and 16 front-panel set-ups. This storage technology is virtually impervious to the dust and grime that impair other storage-media performance, making the 370/371 ideal for harsh environments like factory floors and incoming-inspection areas.

Front-Panel Set-Up

The 370/371 can store 16 sets of front-panel-control settings and recall them later. Pressing the Save button saves all current front-panel settings in bubble memory. Pressing Recall restores the front-panel settings that were previously saved.

With stored set-ups, you can easily cycle through a series of tests—either semi-automatically, by pressing front-panel controls to begin each test, or automatically, under program control.

Test Sequencing

You can sequence through as many as 16 device tests from the front panel without using a controller.

Performance Conditions

The following electrical and environmental characteristics are valid for instruments operated at ambient temperatures from +10 to +40°C after an initial warm-up period of 20 minutes, when previously calibrated at a temperature from +15 to +25°C.

371 CHARACTERISTICS

COLLECTOR SUPPLY

Modes/Polarity—High-Current: + pulses, – pulses. High Voltage: + rectified sine wave, – rectified sine wave.

Maximum Peak Voltage and Voltage Accuracy

Peak Power Range (W)	3 k*1	300*1	30*2	3*2
Minimum Collector Current Available (A)	400	40	40 m	4 m
Maximum Peak Collector Voltage (V)	30	30	3 k	3 k
Accuracy (%)	+10, −5	+10, −5	+10, −0	+10, −0

*1 *Pulsed collector supply.*
*2 *Sine-wave collector supply.*

Pulsed Collector Supply—300 μsec ±10% pulse width; 0.25X line-frequency repetition rate.

STEP GENERATOR

Current Mode—Normal step, 1 μA to 2 mA in 1-2-5 sequence with Peak Power at 30 or 3 W. Pulsed Step, 1 mA to 2 A in 1-2-5 sequence with Peak Power at 3 kW or 300 W. Maximum current is 10X step amplitude ±2%. Maximum voltage is 12 V ±20%.
Voltage Mode—200 mV to 5 V in 1-2-5 sequence. Maximum current is 100 mA. Maximum voltage is 10X Step Amplitude.
Step Rate—0.25X line frequency at 3 kW and 300 W. 1.0X line frequency at 30 and 3W.
Pulsed Current Steps—Pulse width, 500 μsec ±10%; rise and fall times, ≤40 μsec.

VERTICAL DISPLAY SYSTEM

Collector Current—Range, 500 mA to 50 A/div in 1-2-5 sequence at 3 kW and 300 W or 10 μA/div in 1-2-5 sequence at 30 and 3 W. Accuracy, ±0.1 div. Cursor accuracy, ±2% of readout +0.2 div in Nonstore mode and ±1.5% of readout +0.1 div in Store mode.

HORIZONTAL DISPLAY SYSTEM

Collector Supply—500 mV to 5 V/div in 1-2-5 sequence at 3 kW and 300 W or 50 to 500 V/div in 1-2-5 sequence at 30 and 3 W.
Step Generator—100 mV to 5 V/div in 1-2-5 sequence.
Accuracy—±0.1 div.
Cursor Accuracy—Within 2% of readout +0.2 div in Nonstore mode or 1.5% of readout +0.1 div in Store Mode.