576/176
- Tests Two- and Three-Terminal Discrete Semiconductors
- Power Capability Up to 220 Watts
- Convenient Scale-Factor Readout
- Test Fixture (Optional) for Testing Power Devices to 1000 Watts

TYPICAL APPLICATIONS
- Semiconductor R & D
- Production-Device Testing
- Incoming Inspection

576/176 High-Current Test Fixture (Optional)

The Tektronix 576 Curve-Tracer System continues to hold the title "standard of the industry." This general-purpose curve-tracer system performs well in applications where high-current testing is required.

With the Standard Test Fixture, the collector supply of the 576 delivers up to 220 W peak to the device under test. The step generator can deliver up to 2 A in both its current and voltage modes of operation. With the 176 High-Current Test Fixture, the 576 is capable of pulsed-collector operation up to 200-A peak.

Alphanumeric indicators provide readout of vertical and horizontal deflection factors, step amplitude, and Beta/div or gm/div. The Beta or gm readout saves the operator from the arithmetic usually necessary to arrive at these parameters. These indicators also provide a permanent record of major knob settings in 576 CRT photographs.

Other features of the 576 Curve-Tracer include: calibrated display offset; adjustable current limiting in the step generator; either 300 or 80 μs pulse width in pulsed-base operation; pushbuttons to check display zero and calibration; and an illuminated graticule.

A safety interlock protects the operator from dangerous voltages.

576 CHARACTERISTICS
COLLECTOR SUPPLY

<table>
<thead>
<tr>
<th>Modes/Polarity</th>
<th>Normal</th>
<th>Peak Current (A)</th>
<th>Peak Pulse Current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC (at line frequency)</td>
<td>Positive or negative full-wave rectified ac</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>DC (Positive or negative dc)</td>
<td>Leakage: Emitter-current rather than collector-current measurements</td>
<td>50</td>
<td>0.1</td>
</tr>
</tbody>
</table>

1000X increase in vertical-deflection sensitivity (1 nA/div).

Voltages (V)

<table>
<thead>
<tr>
<th>Range (V)</th>
<th>15</th>
<th>75</th>
<th>350</th>
<th>1500</th>
</tr>
</thead>
</table>

Max Continuous
Peak Current (A) | 10 | 2 | 0.5 | 0.1 |

Peak Pulse
Current (A) | ±20 | ±4 | ±1 | ±0.2 |

Series Resistance—From 0.3 Ω to 5 MΩ in 12 steps, all within 5% or 0.1 Ω. Peak Power Limit Setting: 0.1, 0.5, 2, 2.2, 10, 50, and 220 W.

Safety Interlock—Protects operator from dangerous voltages.

STEP GENERATOR

Current Mode—Step/Offset Amplitude Range: 5 nA/step (with X0.1 Mult) to 200 mA/step, 1-2-5 sequence. Maximum Current (Steps and Aiding Offset): X20 amplitude setting, except X10 (2 A) at 200 mA/step and X15 (1.5 A) at 100 mA/step. Maximum Voltage (Steps and Aiding Offset): At least 10 V. Maximum Opposing Offset Current: X10 amplitude setting or 10 mA, whichever is less. Maximum opposing voltage is limited at 1 to 3 V.

Voltage Mode—Step/Offset Amplitude Range: 5 nV/step (with X0.1 Mult) to 2 V/step, 1-2-5 sequence. Maximum Voltage (Steps and Aiding Offset): X20 amplitude-switch setting, 40 V maximum. Maximum Current (Steps and Aiding Offset): At least 2 A at 10 V, derating to 10 mA at 40 V. Short-Circuit Current Limiting: 20, 100, 500 mA +100%, -0%; 2 A +50%, -0%. Maximum Opposing Offset Voltage: X10 amplitude setting. Maximum Opposing Current: Limited between 5 and 20 mA.
TEK CURVE-TRACER SYSTEM

Accuracy—Incremental: Within 5%, between steps, within 10% with X1.0 Mult. Absolute: Within 2% of total output including offset, or 1% of amplitude setting, whichever is greater.
Offset Multiplier: Continuously variable from 0 to X10 the amplitude setting, either aiding or opposing the step polarity.
Step Rate—Select from X1, X2, or X4 line frequency.
Pulsed Steps—80 or 300 µs width.
Step/Offset Polarity—Same as Collector-Supply polarity and positive in ac position. Polarity can be independently inverted with Step/Offset Polarity control or from the test fixture.
Step Family—Repetitive or single family.
Number of Steps—Select from 1 to 10.
Vertical-Deflection Factor—Collector Current: 1 µA to 2 A/div, 20 steps in 2-5 sequence (0.1 µA/div with X10 magnification). Emitter Current: 1 nA to 2 mA/div, 20 steps in 2-5 sequence. Step Generator: 1 step/div.
Horizontal-Deflection Factor—Collector Volts: 50 mV to 200 V/div, 12 steps (5 mV/div with X10 magnification). Base Volts: 50 mV to 2 V/div, 6 steps (5 mV/div with X10 magnification). Step Generator: 1 step/div.

POWER REQUIREMENTS
Voltage Ranges—90 to 136 V ac or 180 to 272 V ac (six positions).
Line Frequency—48 to 66 Hz.
Maximum Power Consumption (Including DUT Power)—305 W, Standby Power: 60 W.

ENVIRONMENTAL AND SAFETY
Ambient Temperature—Operating: +10 to +40°C. Nonoperating: -40 to +65°C.
Altitude—Operating: To 3000 m (10,000 ft). Nonoperating: 15 000 m (50,000 ft).
Vibration—Operating: 15 minutes each of the three major axes. 0.04 cm (0.015 in.) p-p displacement 10 to 50 to 10 Hz in one minute cycles. Held for three minutes at 50 Hz.
Shock—Nonoperating: 30 g, ½ sine, 11-ms duration in each direction along each major axis. Total of six shocks.
Safety—CSA Certified (CSA 556 B).

CHARACTERISTICS
COLLECTOR SUPPLY (PULSED)
Width—300 or 80 µs determined by 576.
Repetition Rate—Power-line frequency.
Polarity—determined by 576 polarity control.
Amplitude—Ranges: 15, 75, 350 V nominal, controlled by Max Peak Volts switch on 576. Current (minimum available at low line into shorted load): 15-V range, 200 A; 75-V range, 40 A; 350-V range, 8 A.
Maximum Peak Watts—Three illuminated pushbuttons select 10, 100, or 1000 W maximum peak power.

STEP GENERATOR
Current Ranges (X10 Step Selected)—Step/Offset Amplitude Range: 100 mA to 2 A, 5 steps, 1-2-5 sequence. Maximum Current (Steps and Aiding Offset): 200 x 376 Amplitude setting or 20 A, whichever is less. Maximum Voltage (Steps and Aiding Offset): At least 5 V up to 10 A and 2 V up to 20 A.

VERTICAL AMPLIFIER
Deflection Factor (X10 Vert Selected)—1 to 20 A/div, 5 steps in a 1-2-5 sequence.

ORDERING INFORMATION
576 Curve Tracer
With Standard Test Fixture $17,050
Includes: Standard test fixture (650-0459-01); transistors A1007; FET adapter A1008; TO-3-TO-66 adapter A1003 Opt. 01; axial lead diode adapter A1005 stud diode adapter (013-0110-00); Kelvin sensors for large and small plastic transistors A1002 Opt. 01; safety shield (337-1194-02); power cord (161-0006-00); instruction manual (070-0005-01).

OPTION
Option 01—Deletes the auto scale-factor readout module but maintains provisions for insertion of the module (020-0031-00) at any time. $975

CONVERSION KIT
Auto Scale-Factor Readout Module—Order 020-0031-00 $1,735

INTERNATIONAL POWER PLUG OPTIONS
Option A1—Universal Euro 220 V, 50 Hz.
Option A2—UK 240 V, 50 Hz.
Option A3—Australian 240 V, 50 Hz.
Option A4—North American 240 V, 60 Hz.
Option A5—Switzerland 220 V, 50 Hz.

OPTIONAL ACCESSORIES
Test Set-Up Chart—Package of 250. Order 070-0970-01 $10
Test Fixture—176 $6,800
Socket Adapters—In this section.
Camera—C-59A and adapter.
Cart—K217. $510

176 Pulsed High-Current Fixture

ORDERING INFORMATION
176 Pulsed High-Current Fixture $6,800
Includes: T036 adapter (013-0112-00); stud diode adapter (013-0110-00); safety shield (337-1194-02); instruction manual (070-1073-00).