

Digitizing Oscilloscope

TDS510A

Characteristics

VERTICAL SYSTEM

Bandwidth - 500 MHz*¹

Channels - Four

Waveform Capture Rate - 150 waveforms/s

Max Sample Rate -

1 and 2 Channels: 500 MS/s

4 Channels: 250 MS/s

Sensitivity - 1 mV to 10 V/div

Position Range - ± 5 divisions

Offset -

1 to 99.5 mV/div: ± 1 V

100 to 995 mV/div: ± 10 V

1 to 10 V/div: ± 100 V

DC Gain Accuracy - $\pm 1\%$

Vertical Resolution - 8-bits

Analog Bandwidth Selections - 20 MHz, 100 MHz, and Full

Input Coupling - AC, DC, or GND

Input Impedance Selections - 1 megohm in parallel with 10 pF, or 50 ohm (AC and DC coupling)

Maximum Input Voltage -

300 V CAT II; ± 400 V (peak)

Derate at 20 dB/decade above 1 MHz

1 megohm or GND coupled

Channel Isolation -

>100:1 at 100 MHz

>30:1 at BW for any two channels with equal V/div settings

AC Coupled LF Limit -

AC 1 megohm coupled: ≤ 10 Hz

AC 50 ohm coupled: ≤ 200 kHz

*1 500 MHz typical at probe tip with P6139A probe.

TIME BASE SYSTEM

Time Bases - Main, Delayed

Time/Div Range - 500 ps to 10 s/div

Time Base Accuracy - ± 25 ppm over any interval ≥ 1 ms

Record Length - 50 K points

Pretrigger Position - 0 to 100% of record

ACQUISITION SYSTEM

Acquisition Modes - Sample, Single Sequence, Average, Envelope, Hi-Res, Peak Detect

TRIGGER SYSTEM

Trigger Types - Edge (Main and Delayed), Pulse (Width, Glitch, and Runt), Logic (Pattern and State), Video - Opt. 05 (NTSC, PAL, HDTV, FlexFormat™)

Main Trigger Modes - Auto, Normal, Single

Delay Trigger Modes - Delay by time, events, or events and time

STORAGE

Waveforms - Four full 50 K point records

Setups - 10 front-panel setups

DISPLAY SYSTEM

Monitor - 7 in., 640 × 480, monochrome

Waveform Style - Dots or vectors, infinite and variable persistence

Display Formats - YT, XY Zoom, Fit-to-Screen

Automatic Measurements

Period	Frequency
High	Low
+Width	-Width
Maximum Rise	Minimum Fall

Peak-to-Peak	Amplitude
+Duty Cycle	-Duty Cycle
+Overshoot	-Overshoot
Propagation Delay	Burst Width
Mean	Cycle Mean
RMS	Cycle RMS
Area	Cycle Area
Phase	

Advanced Waveform Functions - FFT, Differentiation, Integration (Option 2F), Limit Testing.

Cursor Measurements - Absolute, Delta; volts, time, frequency. NTSC IRE units and line number with video trigger (Option 05).

Waveform Functions - Interpolation (sin(x)/x or linear), Average, Envelope, Auto-Setup.

OUTPUTS

VGA Out - Monochrome

RS-232 and Centronics - Opt. 13

Hardcopy Formats - Epson, Thinkjet, Deskjet, Laserjet, PostScript, TIFF, PCX, BMP, DPU411/412, HPGL, Interleaf

Power - 90 to 250 V_{RMS}, 45 to 440 Hz, 300 W maximum

Physical Characteristics

Dimensions mm in.

Height	193	7.6
Width	445	17.5
Depth	432	17
Weight	kg	lb.
Net	14.1	31