

TEKTRONIX

TDS3012C

The Tektronix TDS3012C is a 100 MHz, 2-channel Digital Phosphor Oscilloscope (DPO) from the popular TDS3000C series. Known for its compact design, optional battery capability, and rapid 3,600 wfms/s continuous waveform capture rate, it provides reliable performance for engineering, manufacturing, and service environments.

SPECIFICATIONS

General

Interfaces	USB Host (front panel), USB Device (rear panel), LAN (10Base-T); GPIB, RS-232, VGA video output (optional TDS3GV module)
Display	6.5-inch (165.1 mm) active-matrix color TFT, 640 × 480 pixels
Standard Warranty	3 years (excluding probes)

Physical

Power Supply	100 V to 240 V AC $\pm 10\%$, 47 Hz to 440 Hz (100 V to 120 V), 47 Hz to 63 Hz (115 V to 240 V), 75 W maximum
Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	375 mm × 176 mm × 149 mm mm
Weight	3.2 kg kg

Vertical System (Analog Channels)

Number of Channels	2
Analog Bandwidth (-3 dB)	100 MHz
Calculated Rise Time	3.5 ns
Hardware Bandwidth Limits	20 MHz
Input Coupling	AC, DC, GND
Input Impedance	1 M Ω $\pm 1\%$ in parallel with 13 pF ± 2 pF, or 50 Ω $\pm 1\%$
Input Sensitivity Range (1 M Ω)	1 mV/div to 10 V/div
Input Sensitivity Range (50 Ω)	1 mV/div to 1 V/div
Vertical Resolution	9 bits
Maximum Input Voltage (1 M Ω)	150 V RMS CAT I
Maximum Input Voltage (50 Ω)	5 V RMS
Channel-to-Channel Isolation	$\geq 100:1$ at 100 MHz

Horizontal System

Time Base Range	4 ns/div to 10 s/div
Time Base Accuracy	± 20 ppm

Acquisition System

Max Real-Time Sample Rate	1.25 GS/s
Record Length (Max Points)	10 k points
Acquisition Modes	Sample, Peak Detect, Envelope, Average, Single Sequence
Peak Detect Resolution	9.3 ns
Continuous Waveform Capture Rate	3,600 wfms/s

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Source	CH1, CH2, AC Line, External, External/10
Trigger Coupling	AC, DC, Noise Reject, HF Reject, LF Reject

Waveform Measurements & Analysis

Automatic Measurements	25
Fast Fourier Transform (FFT)	Standard
Waveform Math Operations	Add, Subtract, Multiply, Divide, FFT
Waveform Anomaly Detection	WaveAlert®
Optional Analysis Modules	Advanced Analysis, Limit Testing, Telecom Mask Testing, Extended Video, 601 Serial Digital Video

Display System

Display Type	VGA Active Matrix Color TFT
Display Size	6.5 in (165.1 mm) diagonal
Display Resolution	640 × 480 pixels
Graticule Types	Full, Grid, Crosshair, Frame
Display Formats	YT, XY, Zoom
Waveform Display Styles	Vectors, Dots, Variable Persistence, Infinite Persistence

Input/Output Ports

USB Host Port	1x USB 2.0 (front panel)
Ethernet Port (LAN)	1x RJ-45 (10Base-T)
VGA Video Output	1x DB-15 female (requires optional TDS3GV module)
External Trigger Input	BNC, 1 MΩ
Probe Compensator Output	5 V into ≥1 MΩ, 1 kHz

Power and Battery System

Line Voltage Range	100 V to 240 V AC ±10%
Line Frequency Range	47 Hz to 440 Hz (100–120 V), 47 Hz to 63 Hz (115–240 V)
Power Consumption	75 W maximum
Optional Battery Operation	TDS3BATC lithium-ion battery pack
Battery Life (Typical)	Up to 3 hours

Environmental and Safety

Non-Operating Temperature	-20 °C to +60 °C
Operating Humidity	Up to 95% RH at or below +30 °C, up to 45% RH up to +50 °C
Operating Altitude	Up to 3,000 m
Non-Operating Altitude	Up to 15,000 m

Physical Characteristics

Width	375 mm
Height	176 mm
Depth	149 mm
Weight (Instrument Only)	3.2 kg
Weight (with Battery)	4.5 kg

Trigger

Trigger Level Range	Internal: ± 8 divisions from screen center; External: ± 1.2 V; External /10: ± 12 V
Trigger Holdoff Range	250 ns to 8 s
External Trigger Input Impedance	1 M Ω in parallel with 17 pF
Internal Edge Trigger Sensitivity	0.35 div from DC to 50 MHz, increasing to 1 div at 100 MHz
External Edge Trigger Sensitivity	150 mV from DC to 50 MHz, increasing to 500 mV at 100 MHz
External /10 Edge Trigger Sensitivity	1.5 V from DC to 50 MHz, increasing to 5 V at 100 MHz

Vertical System

Channel-to-Channel Deskew Range	± 10 ns
Common Mode Rejection Ratio	100:1 at 60 Hz, 10:1 at 50 MHz (with equal Volts/div settings)
Input Capacitance (1 M Ω)	13 pF ± 2 pF

Compliance

Safety Compliance	UL61010B-1, CSA C22.2 No. 1010.1, EN61010-1
EMC Compliance	EN61326 Class A, FCC Part 15 Subpart B Class A, AS/NZS 2064

Environmental

Operating Shock	30 g, 11 ms half-sine
Non-Operating Shock	50 g, 11 ms half-sine
Operating Vibration	0.31 g RMS from 5 Hz to 500 Hz
Non-Operating Vibration	2.46 g RMS from 5 Hz to 500 Hz
Cooling Clearance Requirement	At least 51 mm (2 in.) on left side and rear of instrument

Accessories

Standard Probes Shipped	Two P3010 100 MHz 10X passive probes
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Storage

Internal Setup Storage	10 setups
Internal Waveform Storage	4 waveforms

User Interface

Autoset Function	Single-button automatic setup of vertical, horizontal, and trigger systems
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Interfaces

GPIB Interface	Supported via optional TEK-USB-488 Adapter connected to USB device port
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TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic Design, Debugging, Manufacturing Test, Service and Repair, Education

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