

AC Current Probes

CT-1 • CT-2 • CT-6



Features and Benefits

- High Bandwidth
- Ultra-Low Inductance
- Very Small Form Factor
- Characterize Current Waveforms up to <200 pSec Rise Times
- Very Low Loading of Circuit Under Test
- Fits Into Dense, Closely-Spaced Circuit Designs



Applications

- Data Storage Read Channel Design
- Silicon Characterization
- High-Frequency Analog Design
- ESD Testing



CT-6 Current Probe

CT-6 Current Probe – New!

The CT-6 is the newest addition to the Tektronix portfolio of high-frequency current probes. It is designed to meet the needs of high-speed circuit design and test applications which require ultra high bandwidth, low inductance and extremely small form factor. The CT-6 provides up to 2 GHz bandwidth when used with high-bandwidth oscilloscopes such as the Tektronix TDS794D oscilloscope, or with other compatible 50 W input measuring instruments. Low inductance (<3 nH) assures that the loading effect of the CT-6 on the circuit-under-test will be negligible, which is especially important for today's low-amplitude, high-speed circuit designs such as disk drive read/write preamplifiers. The probe is a closed-circuit design which will accept uninsulated wire sized up to 20 gauge. This product is exempt from CE mark by virtue of its 30V voltage limit.



CT-1/CT-2 Current Probes with P6041 BNC Probe Cable.

CT-1/CT-2 Current Probes

The CT-1 and CT-2 Current Probes are designed for permanent or semi-permanent in-circuit installation. Each probe consists of a current transformer and an interconnecting cable. The current transformers have a small hole through which a current carrying conductor is passed during circuit assembly.

The P6041 Probe Cable provides the connection between the CT-1 and CT-2 Current Transformers and a BNC oscilloscope input. A 50 W termination is required to terminate the cable when connected to a high impedance (1 MW) oscilloscope input. One probe cable can be used to monitor several current transformers that have been wired into a circuit.

Characteristics

MINIATURE CONSTRUCTION

The CT-1 and CT-2 detachable cable design enables one or more probes to be located on circuit boards or in other limited space areas.

The CT-6 offers the smallest form factor available, for measurement on ever-shrinking circuit boards and components. It is designed for temporary installation and does not incorporate removable cables, as the CT-1 and CT-2 do.

HIGH SENSITIVITY

The CT-1 and CT-6 provide an output of 5 mV for each milliamp of input current when terminated in 50 W.

The CT-2 provides 1 mV per milliamp when terminated in 50 W.

TYPICAL SYSTEMS

The CT-1, CT-2 and CT-6 high frequency current transformers are dynamic (i.e., non-DC) current measuring devices. They are typically used in conjunction with compatible high bandwidth oscilloscopes and other instruments to observe and/or record high frequency current waveforms. The CT-1, CT-2, and CT-6 normally operate directly into 50 W scopes and other measuring device inputs.

The CT-1 or CT-2 can be used with 1 MW input systems; use the P6041 probe cable, and terminate the output with a 50 W feed-through termination (see Optional Accessories).

In all cases, the CT-1, CT-2 and CT-6 must work into 50 Ws to obtain specified performance and sensitivity.



See Tektronix on the World Wide Web:
<http://www.tektronix.com>



CT-6 is CE Exempt



ISO 9001 Tektronix measurement products
are manufactured in ISO
registered facilities.

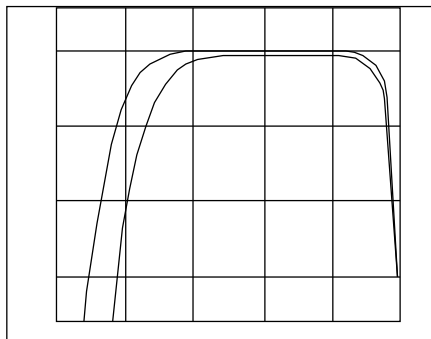
AC Current Probes

CT-1 • CT-2 • CT-6

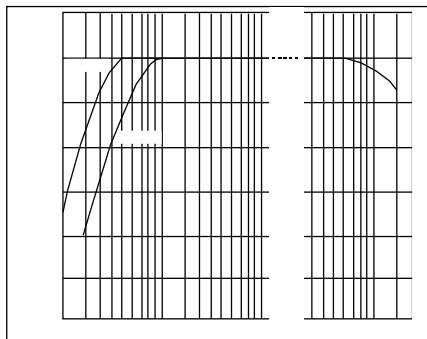
CHARACTERISTICS

CT-1, CT-2, & CT-6 CHARACTERISTICS

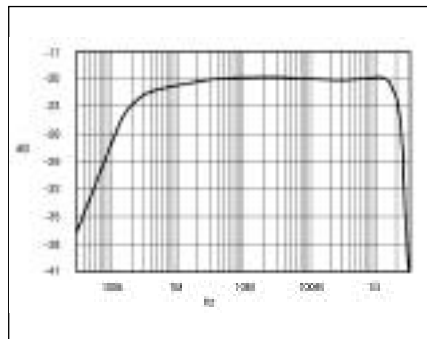
Parameter		CT-1	CT-2	CT-6
Bandwidth (typical)		25 kHz to 1 GHz	1.2 kHz to 200 MHz	250 kHz to 2 GHz
Risetime		350 p Sec	500 p Sec	200 p Sec
Sensitivity (into 50 Ws)		5 mV/mA	1 mV/mA	5 mV/mA
Accuracy		± 3%	± 3%	± 3%
Magnetizing Inductance		6 microHenries	7 microHenries	1 microHenry
Leakage Inductance		2.4 nH	1 nH	1.5 nH
Insertion Impedance:	@ 10 MHz	< 1 W	0.1 W	1.1 W
	@ 100 MHz	2 W	0.5 W	1.3 W
	@ 1 GHz	—	—	11.9 W
Max. bare wire size		#14 wire 1.78 mm (0.070")	#16 wire 1.32 mm (0.052")	#20 wire 0.8 mm (0.032")
Max. bare wire voltage:	RMS	175 V RMS CAT 1	175 V RMS CAT 1	30 V RMS CAT 1
* (< 3.25% duty factor)	Peak	1000 V *	1000 V *	30 V
	DC	175 V	175 V	30 V
Max. peak pulse current		12 A	36 A	6 A
Max. continuous current (RMS)		450 mA	2.5 A	120 mA
Amp –Second Product		1 x 10 ⁻⁶ A*Sec	50 x 10 ⁻⁶ A*Sec	0.25 x 10 ⁻⁶ A*Sec
L/R Time Constant (droop)		> 6.35 µsec	> 160 µsec	0.4 µsec
Propagation Delay		3.25 nSec	6.1 nSec	5.2 nSec



CT-1 Typical Frequency Response.



CT-2 Typical Frequency Response.



CT-6 Typical Frequency Response.

ORDERING INFORMATION

CT-1

High Frequency Current Probe

CT-2

High Frequency Current Probe

CT-6

High Frequency Current Probe

CT-1 OR CT-2 RECOMMENDED ACCESSORIES

Feed-through 50 W termination – Order 011-0049-01.

CT-6 OPTIONS

Opt. D1 – Calibration data report.

Opt. C3 – Three years calibration service.

Opt. D3 – Three years calibration data reports.

Opt. R3 – Three years repair service.

CT-6 STANDARD ACCESSORIES

SMA to BNC Adapter – Order 015-0572-00.

User Manual – Order 071-0453-00.

Color Cable Marker Bands

Probe Holder – Order 015-0682-00

Certificate of Traceable Calibration

WARRANTY

One Year

For further information, contact Tektronix:

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9/98 HB/XBS 60W-12572-0



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