

CT3681/CT3683

High Voltage Differential Probe 70 MHz / ± 7 kV

Datasheet

Overview:

Differential probes allow safe, accurate measurement between two voltage points where neither point is referenced to ground. The CT3681 and CT3683 both offer a 70 MHz bandwidth and can test up to ± 7 kV (DC + AC peak). Compatible with oscilloscopes from all major manufacturers, the probes can be battery operated, powered by a universal adapter (optional), or powered by USB power lead (optional) if the oscilloscope is so equipped.



CT3681 shown

Features:

- Meets IEC 61010-031 safety standard
- 70 MHz bandwidth (-3 dB)
- Up to ± 7 kV differential and common mode voltage
- Selectable attenuation settings of 100x/1000x
- Compatible with most oscilloscopes
- Power and over-range indicators
- High accuracy ($\pm 2\%$)
- High CMRR
- Unique high voltage input leads and hook probes (CT3683)
- Powered by 4 AA batteries (included)
- Power adapter, CT3723 (optional)
- USB power lead, CT4122 (optional)

Electrical Specifications	
	CT3681 & CT3683
Bandwidth (-3dB)	70 MHz (driving 1 M Ω oscilloscope input)
Rise Time (10%-90%)	5 ns
Attenuation ratio	100x/1000x
Accuracy	$\pm 2\%$
CMRR (typical)	-80 dB @ 50 Hz -60 dB @ 20 kHz
Maximum Differential Input Voltage (DC + AC peak)	± 700 V @ 100x attenuation ± 7000 V @ 1000x attenuation
Maximum Common Mode Input Voltage (DC + AC peak)	± 700 V @ 100x attenuation ± 7000 V @ 1000x attenuation
Absolute Maximum Rated Input Voltage (each side to ground)	5000 Vrms CAT I
Input Impedance	50 M Ω // 7 pF (each side to ground) 100 M Ω // 5 pF (between inputs)
Output Voltage Swing	± 7 V (driving 1 M Ω oscilloscope input)
Offset (typical)	± 5 mV (adjustable)
Noise (typical)	0.9 mVrms
Source Impedance	50 Ω
Power Supply	4 AA batteries (included) or CT3723 power adapter (optional) CT4122 USB power lead (optional)

Mechanical Characteristics	
Weight	500 g (probe only)
Dimensions	202 x 83 x 38 mm
BNC Cable Length	90 cm
Input Leads Length	60 cm each
CT3681 Probes	1000 V, CAT III, 20 A
CT3683 Probes	7000 V, CAT I, 2 A

Environmental Characteristics	
Operating Temp/Humidity	-10°C to 40°C / 25% to 85% RH
Storage Temp/Humidity	-30°C to 70°C / 25% to 85% RH
Pollution Degree	Pollution Degree 2
Altitude	Operating: 3,000 m Nonoperating: 15,300 m

Safety Specifications	
IEC 61010-031 CAT I	