

# CT3681/CT3683

**High Voltage  
Differential Probe  
70 MHz /  $\pm 7$  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  $\pm 7$  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  $\pm 7$  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	
	<b>CT3681 &amp; CT3683</b>
Bandwidth (-3dB)	70 MHz (driving 1 M $\Omega$ 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)	$\pm 700$ V @ 100x attenuation $\pm 7000$ V @ 1000x attenuation
Maximum Common Mode Input Voltage (DC + AC peak)	$\pm 700$ V @ 100x attenuation $\pm 7000$ V @ 1000x attenuation
Absolute Maximum Rated Input Voltage (each side to ground)	5000 Vrms CAT I
Input Impedance	50 M $\Omega$ // 7 pF (each side to ground) 100 M $\Omega$ // 5 pF (between inputs)
Output Voltage Swing	$\pm 7$ V (driving 1 M $\Omega$ oscilloscope input)
Offset (typical)	$\pm 5$ mV (adjustable)
Noise (typical)	0.9 mVrms
Source Impedance	50 $\Omega$
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	

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