

# CT3686/CT3687

High Voltage

Differential Probe

100 MHz /  $\pm 700$  V (CT3686)

100 MHz /  $\pm 1400$  V (CT3687)

# Datasheet

## Overview:

Differential probes allow safe, accurate measurement between two voltage points where neither point is referenced to ground. The CT3686 and CT3687 both offer 100 MHz bandwidth and can test up to  $\pm 700$  V (DC + AC peak) and  $\pm 1400$  V (DC + AC peak), respectively. 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.



CT3686 shown

## Features:

- Meets IEC 61010-031 safety standard
- 100 MHz bandwidth (-3 dB)
- Up to  $\pm 700$  V (DC + AC peak) common mode (CT3686)
- Up to  $\pm 1400$  V (DC + AC peak) common mode (CT3687)
- Selectable attenuation settings of 10x/100x (CT3686)
- Selectable attenuation settings of 100x/1000x (CT3687)
- Power and over-range indicators
- High accuracy ( $\pm 2\%$ )
- High CMRR
- Powered by 4 AA batteries (included)
- Power adapter, CT3723 (optional)
- USB power lead, CT4122 (optional)

Electrical Specifications		
	CT3686	CT3687
Bandwidth (-3dB)	100 MHz (driving 1 M $\Omega$ oscilloscope input)	
Rise Time (10%-90%)	3.5 ns	
Attenuation ratio	10x/100x	100x/1000x
Accuracy	$\pm 2\%$	
CMRR (typical)	-85 dB @ 50 Hz -55 dB @ 1 MHz	-80 dB @ 60 Hz -50 dB @ 1 MHz
Maximum Differential Input Voltage (DC + AC peak)	$\pm 70$ V @ 10x $\pm 700$ @ 100x	$\pm 140$ V @ 100x $\pm 1400$ @ 1000x
Maximum Common Mode Input Voltage (DC + AC peak)	$\pm 700$ V	$\pm 1400$ V
Absolute Maximum Rated Input Voltage (each side to ground)	700 Vrms CAT II	1000 Vrms CAT II
Input Impedance	4 M $\Omega$ // 7 pF (each side to ground)	
Output Voltage Swing	$\pm 7$ V (driving 1 M $\Omega$ oscilloscope input)	
Offset (typical)	$\pm 5$ mV	
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
Dimensions	207 x 83 x 38 mm
BNC Cable Length	90 cm
Input Leads Length	30 cm each

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

Safety Specifications	
IEC 61010-031 CAT II	