

CT3686/CT3687

High Voltage

Differential Probe

100 MHz / ± 700 V (CT3686)

100 MHz / ± 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 ± 700 V (DC + AC peak) and ± 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 ± 700 V (DC + AC peak) common mode (CT3686)
- Up to ± 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 Ω 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) | ± 70 V @ 10x ± 700 V @ 100x | ± 140 V @ 100x ± 1400 V @ 1000x |
| Maximum Common Mode Input Voltage (DC + AC peak) | ± 700 V | ± 1400 V |
| Absolute Maximum Rated Input Voltage (each side to ground) | 700 Vrms CAT II | 1000 Vrms CAT II |
| Input Impedance | 4 M Ω // 7 pF (each side to ground) | |
| Output Voltage Swing | ± 7 V (driving 1 M Ω oscilloscope input) | |
| Offset (typical) | ± 5 mV | |
| 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 |
| 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 | |