Issue history:

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TA046

800 MHz ±30 V Differential Probe

User's Manual

This probe complies with IEC-1010.1, IEC-1010.2-031 CAT III, Pollution Degree 2.

1. Safety terms and symbols

Terms appearing in this manual:

WARNING	Warning statements identify conditions or practices that could result in injury or death.
CAUTION	Caution statements identify conditions or practices that could result in damage to this product or other property.

Symbols appearing on the product:

Danger
High Voltage

Protective
(Earth) Terminal

Attention
Refer to Manual

2. General safety summary

Please review the following safety precautions to avoid injury and prevent damage to this probe or any products that are connected to it.

Observe maximum working voltage

To avoid any injury, do not use the probe above 40 V between each input lead and earth or between the two inputs..

Do not operate without covers

To avoid electric shock or fire hazard, do not operate this probe with the covers removed.

Do not operate in wet or damp conditions

To avoid electric shock, do not operate this probe in wet or damp conditions.

Do not operate in explosive atmosphere

To avoid injury or fire hazard, do not operate this probe in an explosive atmosphere.

Avoid exposed circuitry

To avoid injury, remove jewelry such as rings, watches and other metallic objects. Do not touch exposed connections and components when power is present.

Use proper power source

To ensure proper functioning of this probe, use the 15 V DC / 100 mA regulated mains adaptor. Do not operate this probe from a power source that applies more than the voltage specified.

Do not operate the probe if it is damaged

If you suspect there is damage to this probe, have it inspected by qualified service personnel.

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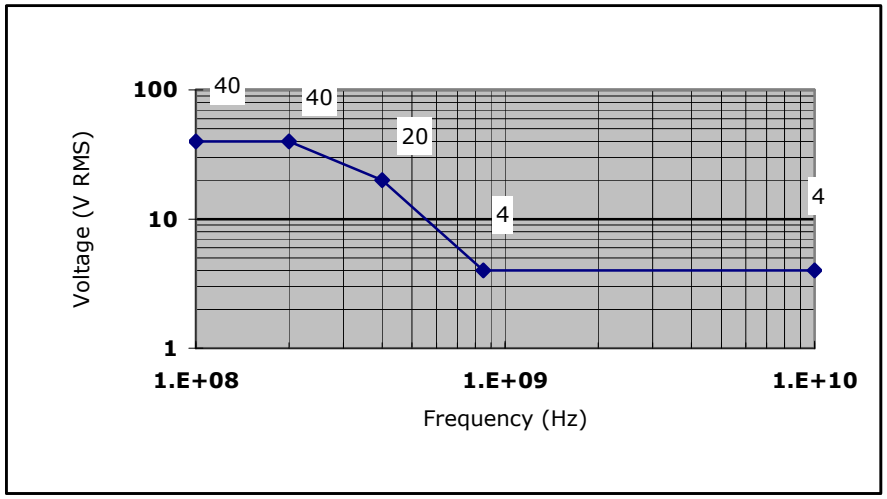
8. Derating curve

The derating curve for absolute maximum input voltage is as follows:



9. Test procedure

a. Connect the BNC output connector to the vertical input of a general-purpose oscilloscope.
b. Connect the AC mains adapter.
c. Set the oscilloscope input coupling to DC and 0.5 V/div. Center the trace on the display.
d. Connect the input pins of the probe to a function generator and select a square-wave output with 10 V p-p amplitude and 100 kHz frequency.
e. A 100 kHz square-wave of 1 V p-p amplitude will be displayed on the screen of the oscilloscope. This means the probe is working properly.

10. Cleaning

Use a soft cloth to clean the probe, taking care not to cause damage.

a. Do not immerse the probe.
b. Do not use abrasive cleaners.
c. Do not use chemicals contains benzene or similar solvents.

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7. Specifications

Bandwidth	DC to 800 MHz (Twin Pin configuration)
Accuracy	±2%
Input impedance	100 kΩ || 2 pF
Attenuation	1/10
Input voltage	
- Max. differential	±15 V
- Max. common mode	±30 V
- Absolute max. voltage	±40 V
Output voltage	
- Swing (into 50 Ω load)	±1.5 V
- Offset (typical)	< ±5 mV
Output impedance(typical)	50 Ω
CMRR (typical)	60 dB @ 60 Hz; 15 dB @ 500 MHz
Output BNC cable length	1.2 m
Power requirements	15 V DC / 100 mA regulated mains adaptor
Ambient operating temperature	-10 to +40 °C
Ambient storage temperature	-30 to +70 °C
Ambient operating humidity	25 to 85% RH
Ambient storage humidity	25 to 85% RH
Weight	130 g
Dimensions (LxWxH)	111 mm x 22 mm x 14 mm

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3. Description

With high bandwidth and high CMRR, this differential probe is ideal for timing analysis, troubleshooting ground bounce problems in high-speed logic, and design verification of disk drives, as well as for wireless and data communications design.

4. Installation

a. Simply plug in the BNC output connector to the vertical input of a general-purpose oscilloscope.
b. Connect the AC mains adaptor to the correct line voltage, and then connect its output to the power terminal of the differential probe.
c. Adjust the vertical offset (or position) of the oscilloscope.

WARNING	To protect against electric shock, use only the accessories designed for use with this differential probe.

CAUTION	This probe is designed for carrying out differential measurements between two points on the circuit under test. It is not intended for electrically insulating the circuit under test and the measuring instrument.

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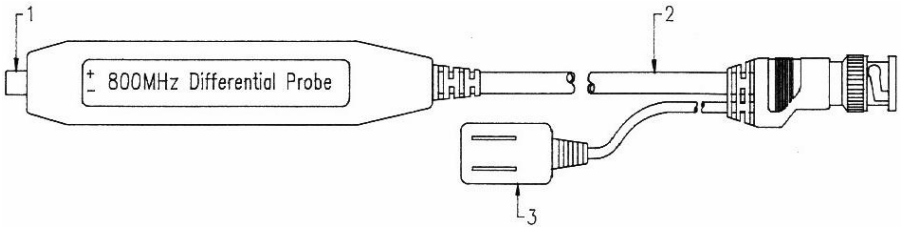
5. Appearance

The differential probe looks like this:



1. Input Pins. The input pins of the differential probe can be connected directly to the circuit under test or connected to optional accessories that come with the probe.
2. Output Lead. The BNC output connector.
3. Power Plug. The terminal connects to the 15 V DC / 100 mA regulated mains adaptor.

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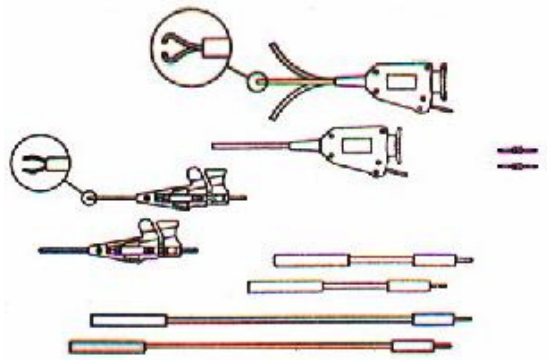
6. SMD micro test accessories



Descriptions	Quantity
MicroFlex Pincer, Black	1
MicroFlex Pincer, Red	1
Micro Test Clip, Black	1
Micro Test Clip, Red	1
MicroLead, 0.8 mm J-P, 5 cm, Black	1
MicroLead, 0.8 mm J-P, 5 cm, Red	1
MicroLead, 0.8 mm J-P, 10 cm Black	1
MicroLead, 0.8 mm J-P, 10 cm Red	1
Twin Pin, 16.8 mm	2
Twin Pin, 12.8 mm	2
Test Tip, 0.8 mm	6

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