

INSTRUCTION
SHEET
NO. 070-5517-00
PRODUCT GROUP 60

TEK

PROBE
AND ACCESSORIES

P6106A

10x PASSIVE PROBE

DC TO 250 MHz

Tektronix[®]
COMMITTED TO EXCELLENCE

OPERATING CONSIDERATIONS

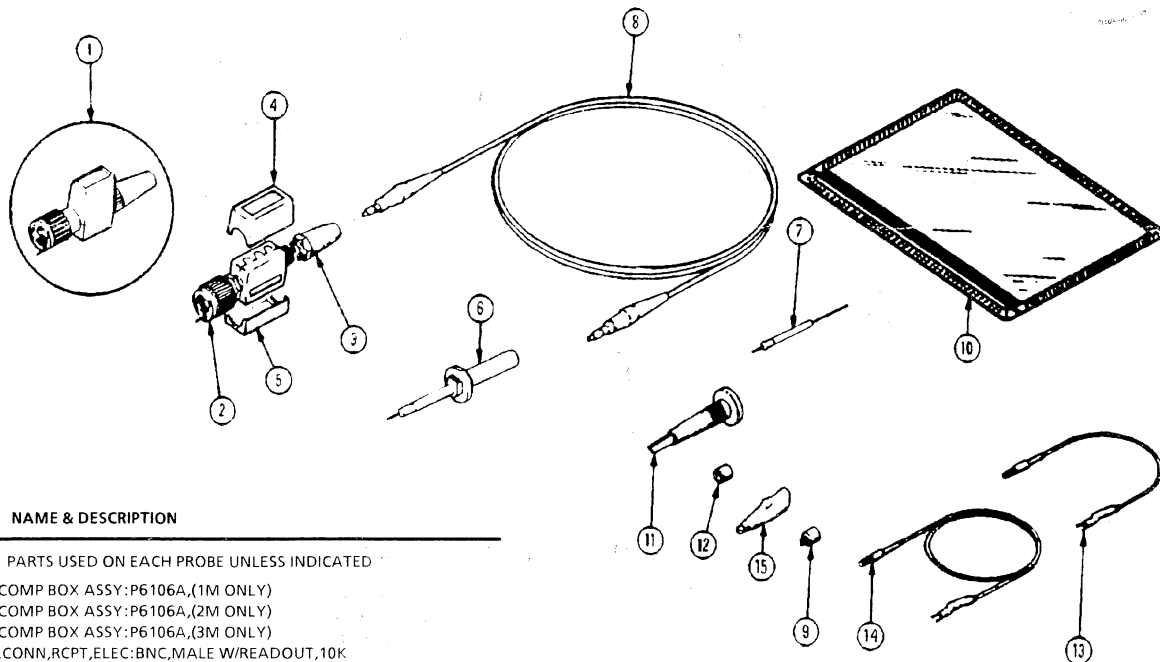
Probe Grounding. Inductance introduced by a long signal lead or ground lead will form a resonant circuit that will ring and distort the true waveform if driven by a signal containing significant frequency components at or above resonance. The ground lead and signal-input connections should be as short as possible to maintain the best waveform fidelity.

Probe Compensation. Due to variation in oscilloscope input characteristics, probe low-frequency compensation should be checked and adjusted after moving the probe from one input to another. To adjust low-frequency compensation, apply the probe tip to a square-wave signal of 1 kHz (such as an oscilloscope calibrator output). Using a low-reactance alignment tool, adjust the probe compensation capacitor through the hole in the compensation box to obtain the squarest waveform front corner. High-frequency compensation seldom requires adjustment. However, if the probe has excessive high-frequency aberrations or insufficient bandwidth, high frequency adjustment can be made through holes in the compensation box inner metal shield (the outer plastic shell must first be removed). Use a 50- Ω terminated, 100 kHz square-wave signal.

WARNING

The following servicing instructions are for use by qualified personnel only. To avoid electrical shock do not perform any probe maintenance while the probe is connected to a signal source.

REPLACEABLE PARTS LIST



TEKTRONIX NO	PART NO	QTY	NAME & DESCRIPTION
PARTS USED ON EACH PROBE UNLESS INDICATED			
1	206-0331-01	1	COMP BOX ASSY:P6106A,(1M ONLY)
	206-0334-00	1	COMP BOX ASSY:P6106A,(2M ONLY)
	206-0320-02	1	COMP BOX ASSY:P6106A,(3M ONLY)
2	131-3219-00	1	.CONN,RCPT,ELEC:BNC,MALE W/READOUT,10K
3	200-3018-00	1	.COVER,CABLE NIP:COMP BOX
4	200-3016-12	1	.COVER,COMP BOX:TOP,ABS DOVE GRAY(1M ONLY)
	200-3016-13	1	.COVER,COMP BOX:TOP,ABS DOVE GRAY(2M ONLY)
	200-3016-14	1	.COVER,COMP BOX:TOP,ABS DOVE GRAY(3M ONLY)
5	200-3017-00	1	.COVER,COMP BOX:BOTTOM,ABS SLATE GRAY
6	206-0328-00	1	PROBE HEAD:(1M ONLY)
	206-0301-00	1	PROBE HEAD:(2M ONLY)
	206-0302-00	1	PROBE HEAD:(3M ONLY)
7	-----	1	.PROBE HEAD:1M,TIP ASSY(SEE OPT ACCESS)
8	174-0076-00	1	CABLE ASSY,RF:39 OHM COAX,(1M ONLY)
	174-0077-00	1	CABLE ASSY,RF:39 OHM COAX,(2M ONLY)
	174-0078-00	1	CABLE ASSY,RF:39 OHM COAX,(3M ONLY)
P6106A STANDARD ACCESSORIES			
9	-----	1	TIP,PROBE:IC TEST(SEE OPTION)
10	016-0708-00	1	POUCH,ACCESSORY:
--	020-0177-01	1	ACCESSORY PKG:
11	013-0107-05	1	.TIP,PROBE:RETRACTABLE HOOK
12	166-0404-01	1	.COVER,GROUND
13	175-0124-01	1	.LEAD,ELECTRICAL:PROBE GND,5 INCHES
14	175-0125-01	1	.LEAD,ELECTRICAL:PROBE GND,12 INCHES
15	344-0046-00	1	.CLIP,ELECTRICAL:ALLIGATOR
---	-----	6	.BAND MARKER:2 EA 3 COLORS(SEE OPT ACCESS)
---	003-1364-01	1	.SCREWDRIVER:PLASTIC
---	070-5517-00	1	INSTRUCTION SHEET

MAINTENANCE

Cleaning. Accumulated dirt can be removed with a soft cloth dampened with a nonresidue type cleaner, preferably isopropyl alcohol. Before using any type of cleaner, consult your Tektronix Service Center or representative. In particular, avoid benzine, toluene, xylene, acetone, or similar solvents.

Probe Module Replacement. Modular construction has been used to simplify repair. The probe head, tip assembly, compensation box, and cable are available as separate units through your local Tektronix Field Office or representative. Individual components within the compensation box are not replaceable.

The probe head simply pulls away from the cable. To remove the compensation box, unscrew the retainer, then pull on the cable until separates from the box. The procedure for replacing the tip assembly is included in the package of replacement tips.

ADDITIONAL INFORMATION

Detailed performance checks, adjustment and maintenance procedures, and descriptions of the probe accessories are available in optional P6106A Instruction Manual (Tektronix part number 070-5232-00).

TEKTRONIX NO	PART NO	QTY	NAME & DESCRIPTION
P6106A OPTIONAL ACCESSORIES			
7	206-0336-01	-	PROBE HEAD:1M,TIP ASSY,BLUE,PKG OF 5
	206-0337-01	-	PROBE HEAD:2M,TIP ASSY,YELLOW,PKG OF 5
	206-0338-01	-	PROBE HEAD:3M,TIP ASSY,RED,PKG OF 5
9	015-0201-07	-	TIP,PROBE:IC TEST(PACK OF 10)
	015-0201-08	-	TIP,PROBE:IC TEST(PACK OF 100)
--	016-0633-00	-	BAND, MARKER,CA:2 EA 9 COLORS
--	070-5232-00	-	MANUAL,TECH:INSTRUCTION,P6106A
P6106A OPTIONS			
STANDARD P6106A		2-METER PROBE WITH ACCESSORIES	
P6106A OPTION 01		2-METER PROBE WITH ACCESSORIES	
P6106A OPTION 03		3-METER PROBE WITH ACCESSORIES	

Part Numbers and descriptions are for the probe shipped with this instruction sheet. For a Parts List which includes a history of part changes and original manufacturer part numbers, refer to the optional instruction Manual(070-5232-00).

SPECIFICATIONS

Description

The P6106A is a miniature, 10X, passive probe for use with all general-purpose oscilloscopes. It is fully compatible with the Tektronix family of miniature probe accessories. The P6106A is available with 1, 2, or 3-meter cable.

Electrical Characteristics

Attenuation: $10X \pm 3\%$ at dc. (Oscilloscope input must be $1 M\Omega \pm 2\%$.)

Input Resistance (System): $10 M\Omega \pm 2\%$. (See Figure 1.)

Input Capacitance (See Figure 1.):

1-Meter Probe Approximately 8.7 pF.

2-Meter Probe Approximately 11.2 pF.

3-Meter Probe Approximately 13.2 pF

Compensation Range: 15 pF to 35 pF. (3-meter version: 150 MHz) on a TEKTRONIX 475A or equivalent oscilloscope.

Maximum Nondestructive Input Voltage:

500 V (dc + peak ac) to 1.3 MHz. (See Figure 2 for voltage derating curve.)

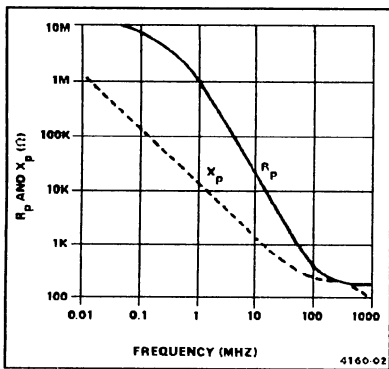


Figure 1. Typical X_p and R_p versus frequency.

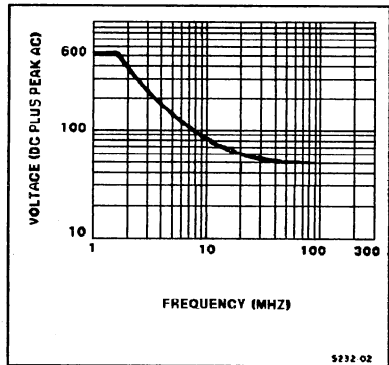


Figure 2. Typical voltage derating versus frequency.

Environmental Characteristics

Temperature Range (Operating): -15°C to $+75^{\circ}\text{C}$ ($+5^{\circ}\text{F}$ to $+167^{\circ}\text{F}$).

Temperature Range (Nonoperating): -62°C to $+85^{\circ}\text{C}$ (-80°F to $+185^{\circ}\text{F}$).

Humidity:

Five cycles (120 hr) at 95% to 97% relative humidity. Per Tek Standard 062-2847-00, Class 3.

Ref to MIL-E-16400F, paragraph 4.5.9 through 4.5.9.5.1, Class 4.

Physical Characteristics

Net Weight (Includes Accessories):

1-Meter Probe 106 g (3.7 oz).

2-Meter Probe 130 g (4.6 oz).

2-Meter Probe 153 g (5.4 oz).

Probe Cable Length: 1.0 m (3.3 ft), 2.0 m (6.6 ft), or 3.0 m (9.8 ft).

Safety

To avoid explosion do not operate this product in an explosive atmosphere unless it has been specifically certified for such operation.

This product meets the requirements of UL 1244.

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