

**TEKTRONIX®**

RC  
OSCILLATOR

SG 502

INSTRUCTION MANUAL

Tektronix, Inc.  
P.O. Box 500  
Beaverton, Oregon 97005

Serial Number \_\_\_\_\_



## WARRANTY

All TEKTRONIX instruments are warranted against defective materials and workmanship for one year. Any questions with respect to the warranty should be taken up with your TEKTRONIX Field Engineer or representative.

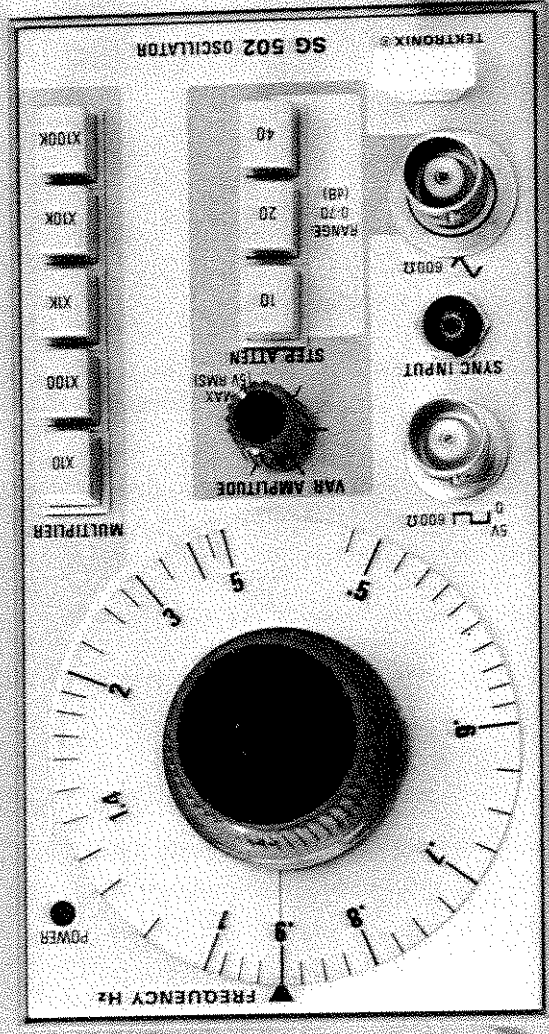
All requests for repairs and replacement parts should be directed to the TEKTRONIX Field Office or representative in your area. This will assure you the fastest possible service. Please include the instrument Type Number or Part Number and Serial Number with all requests for parts or service.

Specifications and price change privileges reserved.

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# SECTION 1 OPERATING INSTRUCTIONS

## INSTRUMENT DESCRIPTION

The SG 502 generates low distortion sine waves and square waves over a frequency range of 5 Hz to 500 kHz. A stable RC oscillator provides 5 V RMS output under no load, or 2.5 V RMS into a 600  $\Omega$  load. A continuously-variable control affords greater than 40 dB sine-wave attenuation in addition to pushbutton-selected 10, 20, and

40 dB steps. A 0 to +5 V fixed amplitude square wave, at the same frequency as the sine wave, is available from a separate front panel connector. The SG 502 also features an external sync input which locks the output frequency to a synchronizing signal. A single dial and five decade push-buttons provide frequency selection.

## INSTALLATION

The SG 502 is calibrated and ready for use when received. It operates in any compartment of a TM 500 Series Power Module. See the Power Module instruction manual for line voltage requirements and Power Module operation. Fig. 1-1 shows SG 502 installation and removal. Make certain that the SG 502 is fully inserted in the Power Module. Pull the PWR switch on the Power Module. Check that the POWER pilot light on the SG 502 front panel is on.

The Controls, Connectors, and Adjustments fold-out page in Section 2 gives a complete description of the front panel.

### CAUTION

*Turn the Power Module off before inserting the plug-in; otherwise, damage may occur to the plug-in circuitry.*

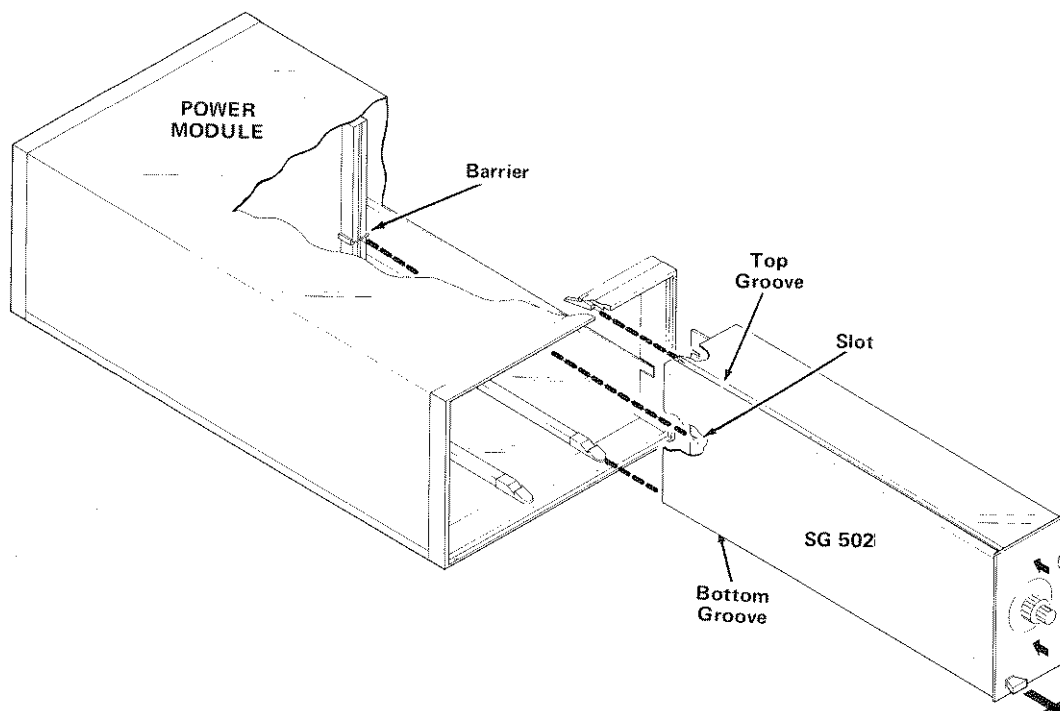


Fig. 1-1. Plug-in module installation/removal.

# OPERATING CONSIDERATIONS

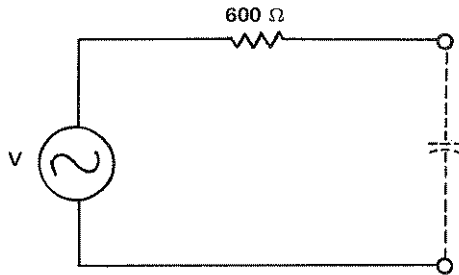


Fig. 1-2. Equivalent 600  $\Omega$  output circuits.

## Making Connections

Fig. 1-2 shows an equivalent circuit for the 600  $\Omega$  sine-wave and square-wave outputs of the SG 502. 50  $\Omega$  coaxial cable adds about 30 pF per foot to the output. Use short cables to avoid reduced sine-wave amplitude and rounded square waves, especially at higher frequencies.

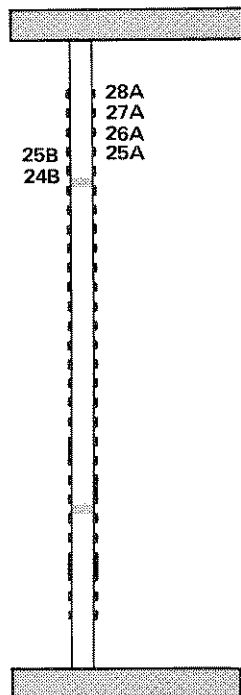


Fig. 1-3. Input/Output assignments at rear connector.

## Synchronization With an External Device

To synchronize the SG 502 with an external oscillator, plug the sine-wave output of the external oscillator into the SYNC INPUT jack on the front panel. Attempting synchronization with other than a sine-wave may cause harmonic distortion of the SG 502 output. Maximum purity is obtained when both signals are the same frequency.

The frequency range over which synchronization occurs depends upon the amplitude of the synchronizing signal. The voltage required for synchronization varies linearly from 0 V (when the frequencies are identical) to approximately 5 V RMS (when the frequencies differ by 5%).

Approximately a 1 V P-P sine wave at the oscillator frequency is available from the SYNC INPUT connector. The source impedance is 10 k $\Omega$ .

## Synchronizing an External Device

The +5 V square-wave output can be used to synchronize an external device such as a counter or oscilloscope. The square-wave amplitude will be +5 V open-circuited, and less as the load impedance decreases.

Contact	Assignment
28A	Sine Wave Out
27A	Sine Wave Out Ground
26A	Sync Out Ground
25B	Sync in (Not Factory Wired)
25A	Sync Out (Squarewave out B070750 & below)
24B	Sync Ground (Not Factory Wired)

### Functions Available at Rear Connector

A slot between pins 23 and 24 on the rear connector identifies the SG 502 as a member of the signal source family. Insert a barrier in the corresponding position of the Power Module jack to prevent other than signal source plug-ins from being used in that compartment. This protects the plug-in should specialized connections be made to that compartment. Consult the Building A System

section of the Power Module manual for further information.

Signal outputs, or other specialized connections, are made to the rear interface connectors as shown in Fig. 1-3. The Sync In and Sync Ground are not factory wired. The Sync Out signal is a sine wave of the same frequency as the output signal. It has an amplitude of at least 1 V RMS, which is essentially constant over the entire frequency range. The source impedance is 1 k $\Omega$ . Use this signal to trigger external devices such as oscilloscopes or counters etc.

## SPECIFICATIONS

### Performance Conditions

The electrical characteristics are valid only if the SG 502 is calibrated at an ambient temperature between +20°C and +30°C and operated between 0°C and +50°C, unless otherwise noted. The outputs must be terminated in 600  $\Omega$  loads.

#### SINE WAVE

FREQUENCY RANGE: 5 Hz to 500 kHz.

CALIBRATION ACCURACY: Within 5% of dial setting from 5 Hz to <50 kHz; within 10% of dial setting from 50 kHz to 500 kHz.

AMPLITUDE RESPONSE: Within 0.3 dB over entire range (1 kHz reference).

MAXIMUM OUTPUT VOLTAGE: 5 V RMS, open-circuit, 2.5 RMS into a 600  $\Omega$  load.

HARMONIC DISTORTION: < 0.035% from 20 kHz to 50 kHz. < 0.15% over the remaining frequency range.

HUM/NOISE: < 0.1% of rated output.

ATTENUATION: 0 to >40 dB continuously variable. 10, 20, and 40 dB steps within  $\pm 2\%$  for each step.

#### SQUARE WAVE

FREQUENCY RANGE: 5 Hz to 500 kHz.

AMPLITUDE:  $\approx +5$  V open-circuit (+2.5 V into a 600  $\Omega$  load).

RISE AND FALL TIME:  $\leq 50$  ns into 50  $\Omega$  or 600  $\Omega$ ; terminated and measured at the front panel.

#### SYNC INPUT

INPUT IMPEDANCE: 10 k $\Omega$ .





# REPLACEABLE ELECTRICAL PARTS

## PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

## SPECIAL NOTES AND SYMBOLS

X000 Part first added at this serial number

00X Part removed after this serial number

## ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

## ABBREVIATIONS

ACTR	ACTUATOR	PLSTC	PLASTIC
ASSY	ASSEMBLY	QTZ	QUARTZ
CAP	CAPACITOR	RECP	RECEPTACLE
CER	CERAMIC	RES	RESISTOR
CKT	CIRCUIT	RF	RADIO FREQUENCY
COMP	COMPOSITION	SEL	SELECTED
CONN	CONNECTOR	SEMICOND	SEMICONDUCTOR
ELCTLT	ELECTROLYTIC	SENS	SENSITIVE
ELEC	ELECTRICAL	VAR	VARIABLE
INCAND	INCANDESCENT	WW	WIREWOUND
LED	LIGHT EMITTING DIODE	XFMR	TRANSFORMER
NONWIR	NON WIREWOUND	XTAL	CRYSTAL

CROSS INDEX MFR. CODE NUMBER TO MANUFACTURER

MFR.CODE	MANUFACTURER	ADDRESS	CITY,STATE,ZIP
00853	SANGAMO ELECTRIC CO., S. CAROLINA DIV.	P. O. BOX 128	PICKENS, SC 29671
01121	ALLEN-BRADLEY CO.	1201 2ND ST. SOUTH	MILWAUKEE, WI 53204
02735	RCA CORP., SOLID STATE DIVISION	ROUTE 202	SOMERVILLE, NY 08876
03508	GENERAL ELECTRIC CO., SEMI-CONDUCTOR PRODUCTS DEPT.	ELECTRONICS PARK	SYRACUSE, NY 13201
04713	MOTOROLA, INC., SEMICONDUCTOR PRODUCTS DIV.	5005 E. MCDOWELL RD.	PHOENIX, AZ 85036
07263	FAIRCHILD SEMICONDUCTOR, A DIV. OF FAIRCHILD CAMERA AND INSTRUMENT CORP.	464 ELLIS ST.	MOUNTAIN VIEW, CA 94042
07910	TELEDYNE SEMICONDUCTOR	12515 CHADRON AVE.	HAWTHORNE, CA 90250
08806	GENERAL ELECTRIC CO., MINIATURE LAMP PRODUCTS DEPT.	NELA PK.	CLEVELAND, OH 44112
12697	CLAROSTAT MFG. CO., INC.	LOWER WASHINGTON ST.	DOVER, NH 03820
14936	GENERAL INSTRUMENT CORP., SEMICONDUCTOR PRODUCTS GROUP	600 W. JOHN ST.	HICKSVILLE, NY 11802
16546	U.S. CAPACITOR CORP.	2151 N. LINCOLN	BURBANK, CA 91504
18324	SIGNETICS CORP.	811 E. ARQUES	SUNNYVALE, CA 94086
27014	NATIONAL SEMICONDUCTOR CORP.	2900 SAN YSIDRO WAY	SANTA CLARA, CA 95051
34553	AMPEREX ELECTRONIC CORP., COMPONENT DIV.	35 HOFFMAN AVE.	HAPPAUGE, NY 11787
50852	MELSEY CORPORATION	202 CARLE ROAD	CARLE PLACE, LI, NY 11514
56289	SPRAGUE ELECTRIC CO.		NORTH ADAMS, MA 01247
71400	BUSSMAN MFG., DIVISION OF MCGRAW-EDISON CO.	2536 W. UNIVERSITY ST.	ST. LOUIS, MO 63107
71590	CENTRALAB ELECTRONICS, DIV. OF GLOBE-UNION, INC.	5757 N. GREEN BAY AVE.	MILWAUKEE, WI 53201
72136	ELECTRO MOTIVE CORP., SUB OF INTERNATIONAL ELECTRONICS CORP.	SOUTH PARK AND JOHN STREETS	WILLIMANTIC, CT 06226
72982	ERIE TECHNOLOGICAL PRODUCTS, INC.	644 W. 12TH ST.	ERIE, PA 16512
73138	BECKMAN INSTRUMENTS, INC., HELIPOT DIV.	2500 HARBOR BLVD.	FULLERTON, CA 92634
75042	TRW ELECTRONIC COMPONENTS, IRC FIXED RESISTORS, PHILADELPHIA DIVISION	401 N. BROAD ST.	PHILADELPHIA, PA 19108
80009	TEKTRONIX, INC.	P. O. BOX 500	BEAVERTON, OR 97077
80031	ELECTRA-MIDLAND CORP., MEPCO DIV., A NORTH AMERICAN PHILLIPS CO.	22 COLUMBIA RD.	MORRISTOWN, NJ 07960
80294	BOURNS, INC., INSTRUMENT DIV.	6135 MAGNOLIA AVE.	RIVERSIDE, CA 92506
82389	SWITCHCRAFT, INC.	5555 N. ELSTON AVE.	CHICAGO, IL 60630
90201	MALLORY CAPACITOR CO., DIV. OF P. R. MALLORY CO., INC.	3029 E. WASHINGTON ST.	INDIANAPOLIS, IN 46206
91637	DALE ELECTRONICS, INC.	P. O. BOX 609	COLUMBUS, NB 68601
91836	KINGS ELECTRONICS CO., INC.	40 MARELEDALE ROAD	TUCKAHOE, NY 10707
98291	SEAELECTRO CORP.	225 HOYT	MAMARONECK, NY 10544

Replaceable Electrical Parts—SG 502

Ckt No.	Tektronix Part No.	Serial/Model No.		Name & Description	Mfr Code	Mfr Part Number
		Eff	Discont			
A1	670-2215-00			CKT BOARD ASSY:MAIN	80009	670-2215-00
C10	283-0177-00			CAP.,FXD,CER DI:1UF,+80-20%,25V	72982	8131N039651105Z
C12	283-0177-00			CAP.,FXD,CER DI:1UF,+80-20%,25V	72982	8131N039651105Z
C18	281-0656-00			CAP.,FXD,CER DI:22PF,5%,500V	72982	374-000C0G0220J
C50 <sup>1</sup>	295-0161-00			CAP.,SET,MATCHED:0.01,995PF,10UF,0.1UF,1UF	80009	295-0161-00
C51						
C52						
C53						
C54						
C55	283-0632-00			CAP.,FXD,MICA D:87PF,1%,100V	00853	D151E870F0
C91	290-0512-00			CAP.,FXD,ELCTLT:22UF,20%,15V	56289	196D226X0015KA1
C97	290-0536-00			CAP.,FXD,ELCTLT:10UF,20%,25V	90201	TDC106M025NLF
C101	290-0531-00			CAP.,FXD,ELCTLT:100UF,20%,10V	90201	TDC107M010WLC
C103	290-0531-00			CAP.,FXD,ELCTLT:100UF,20%,10V	90201	TDC107M010WLC
C105	290-0536-00			CAP.,FXD,ELCTLT:10UF,20%,25V	90201	TDC106M025NLF
C107	290-0536-00			CAP.,FXD,ELCTLT:10UF,20%,25V	90201	TDC106M025NLF
C109	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C110	290-0517-00			CAP.,FXD,ELCTLT:6.8UF,20%,35V	56289	196D685X0035KA1
C112	290-0517-00			CAP.,FXD,ELCTLT:6.8UF,20%,35V	56289	196D685X0035KA1
C120	281-0504-00			CAP.,FXD,CER DI:10PF,+/-1PF,500V	72982	301-055C0G0100F
C140	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-547E103Z
C146	290-0512-00			CAP.,FXD,ELCTLT:22UF,20%,15V	56289	196D226X0015KA1
C150	281-0504-00			CAP.,FXD,CER DI:10PF,+/-1PF,500V	72982	301-055C0G0100F
C160	290-0208-00			CAP.,FXD,ELCTLT:350UF,+75-15%,15V	56289	113D357C7015P1
C200	281-0525-00			CAP.,FXD,CER DI:470PF,+/-94PF,500V	04222	7001-1364
C321	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-547E103Z
C322	283-0111-00			CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8131N075651104M
C324	290-0528-00			CAP.,FXD,ELCTLT:15UF,20%,50V	90201	TDC156M050WLC
C325	290-0517-00			CAP.,FXD,ELCTLT:6.8UF,20%,35V	56289	196D685X0035KA1
C330	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
C341	283-0003-00			CAP.,FXD,CER DI:0.01UF,+80-20%,150V	72982	855-547E103Z
C342	283-0111-00			CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8131N075651104M
C344	290-0528-00			CAP.,FXD,ELCTLT:15UF,20%,50V	90201	TDC156M050WLC
C345	290-0517-00			CAP.,FXD,ELCTLT:6.8UF,20%,35V	56289	196D685X0035KA1
C350	290-0534-00			CAP.,FXD,ELCTLT:1UF,20%,35V	56289	196D105X0035HA1
CR80	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR86	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR90	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR91	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
GR150	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR154	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR195	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR196	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR198	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR199	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR200	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR202	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR210	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR212	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	07910	1N4152
CR322	152-0066-00	XB040000		SEMICONV DEVICE:SILICON,400V,750MA	02735	37304
CR324	152-0107-00	XB040000		SEMICONV DEVICE:SILICON,375V,400MA	80009	152-0107-00
CR342	152-0066-00	XB040000		SEMICONV DEVICE:SILICON,400V,750MA	02735	37304

<sup>1</sup>Individual timing capacitors in this assembly must be ordered by the 9-digit part number, letter suffix and tolerance printed on the timing capacitor to be replaced. The letter suffix and the tolerance should be the same for all of the timing capacitors in the assembly.

EXAMPLE:

285-XXXX-XX F-

The letter suffix and the tolerance should be the same for all of the timing capacitors in the assembly.

# Replaceable Electrical Parts—SG 502

Ckt No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
CR344	152-0107-00	XB040000	SEMICONV DEVICE:SILICON,375V,400MA	80009	152-0107-00
VR91	152-0149-00		SEMICONV DEVICE:ZENER,0.4W,10V,5%	04713	1N961B
VR146	152-0149-00		SEMICONV DEVICE:ZENER,0.4W,10V,5%	04713	1N961B
DS346	150-0109-00		LAMP, INCAND: 18V, 26MA	71744	CM7220
J10	136-0187-00		JACK, TIP:	17117	4653-113-0
J180	131-0274-00		CONNECTOR, RCPT, :BNC	91836	KC79-67
J205	210-0774-00		EYELET, METALLIC:0.152 OD X 0.245 INCH L, BRS	80009	210-0774-00
	210-0775-00		EYELET, METALLIC:0.126 OD X 0.25 INCH L, BRS	80009	210-0775-00
J210	131-0955-00		CONNECTOR, RCPT, :BNC, FEMALE	24931	28JR200-1
P205	131-1003-00		CONNECTOR BODY, :CKT BD MT, 3 PRONG	80009	131-1003-00
Q10A, B	151-1054-00		TRANSISTOR: SILICON, JFE, N-CHANNEL, DUAL	80009	151-1054-00
Q20	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
Q24	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
Q30	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
Q70	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q80	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q82	151-0302-00		TRANSISTOR: SILICON, NPN	04713	2N2222A
Q86	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q88	151-0301-00		TRANSISTOR: SILICON, PNP	04713	2N2907A
Q90	151-0302-00		TRANSISTOR: SILICON, NPN	04713	2N2222A
Q110	151-1021-00		TRANSISTOR: SILICON, JFE	17856	FN815
Q120	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q128	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q130	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q140	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
Q145	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
Q150	151-0302-00		TRANSISTOR: SILICON, NPN	04713	2N2222A
Q154	151-0301-00		TRANSISTOR: SILICON, PNP	04713	2N2907A
Q200	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q210	151-0190-00		TRANSISTOR: SILICON, NPN	80009	151-0190-00
Q220	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
Q230	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
Q235	151-0188-00		TRANSISTOR: SILICON, PNP	01295	2N3906
R10	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
R12	315-0105-00		RES., FXD, CMPSN: 1M OHM, 5%, 0.25W	01121	CB1055
R15	315-0121-00		RES., FXD, CMPSN: 120 OHM, 5%, 0.25W	01121	CB1215
R18	315-0752-00		RES., FXD, CMPSN: 7.5K OHM, 5%, 0.25W	01121	CB7525
R22	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
R25	315-0220-00		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
R27	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
R29	315-0220-00		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
R32	315-0561-00		RES., FXD, CMPSN: 560 OHM, 5%, 0.25W	01121	CB5615
R35	315-0132-00		RES., FXD, CMPSN: 1.3K OHM, 5%, 0.25W	01121	CB1325
R36	315-0392-00		RES., FXD, CMPSN: 3.9K OHM, 5%, 0.25W	01121	CB3925
R38	315-0752-00		RES., FXD, CMPSN: 7.5K OHM, 5%, 0.25W	01121	CB7525
R40	315-0121-00		RES., FXD, CMPSN: 120 OHM, 5%, 0.25W	01121	CB1215
R45	321-0661-00		RES., FXD, FILM: 600 OHM, 1%, 0.125W	75042	CEATO-6000F
R50A, B	311-1502-00		RES., VAR, WW: PNL, 2 X 10K OHM, 2.75W	02111	100-9625

Replaceable Electrical Parts—SG 502

Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
R55	321-0661-00			RES.,FXD,FILM:600 OHM,1%,0.125W	75042	CEATO-6000F
R71	315-0222-00			RES.,FXD,CMPSN:2.2K OHM,5%,0.25W	01121	CB2225
R73	315-0392-00			RES.,FXD,CMPSN:3.9K OHM,5%,0.25W	01121	CB3925
R75	315-0132-00			RES.,FXD,CMPSN:1.3K OHM,5%,0.25W	01121	CB1325
R82	315-0220-00			RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
R84	315-0102-00	XB070000		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R86	315-0112-00			RES.,FXD,CMPSN:1.1K OHM,5%,0.25W	01121	CB1125
R88	315-0220-00			RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
R91	315-0681-00			RES.,FXD,CMPSN:680 OHM,5%,0.25W	01121	CB6815
R93	315-0303-00			RES.,FXD,CMPSN:30K OHM,5%,0.25W	01121	CB3035
R95	315-0753-00			RES.,FXD,CMPSN:75K OHM,5%,0.25W	01121	CB7535
R97	315-0302-00			RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
R110	321-0364-00			RES.,FXD,FILM:60.4K OHM,1%,0.125W	75042	CEATO-6042F
R113	321-0364-00			RES.,FXD,FILM:60.4K OHM,1%,0.125W	75042	CEATO-6042F
R115	311-0978-00			RES.,VAR,NONWIR:250 OHM,10%,0.50W	80740	62-67-3
R116	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R117	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R120	315-0220-00			RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
R123	315-0220-00			RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
R125	315-0242-00			RES.,FXD,CMPSN:2.4K OHM,5%,0.25W	01121	CB2425
R126	315-0220-00			RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
R129	315-0242-00			RES.,FXD,CMPSN:2.4K OHM,5%,0.25W	01121	CB2425
R130	315-0202-00			RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
R132	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R133	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R140	315-0122-00			RES.,FXD,CMPSN:1.2K OHM,5%,0.25W	01121	CB1225
R143	315-0201-00			RES.,FXD,CMPSN:200 OHM,5%,0.25W	01121	CB2015
R146	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R150	315-0220-00			RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
R154	315-0220-00			RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
R156	315-0472-00			RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
R160	321-0661-00			RES.,FXD,FILM:600 OHM,1%,0.125W	75042	CEATO-6000F
R164	321-0661-00			RES.,FXD,FILM:600 OHM,1%,0.125W	75042	CEATO-6000F
R165A,B	311-1440-00			RES.,VAR,NONWIR:PNL,600 OHM,T ATTENUATOR	01121	10M479
R166	321-0661-00			RES.,FXD,FILM:600 OHM,1%,0.125W	75042	CEATO-6000F
R170	322-0703-07			RES.,FXD,FILM:311.7 OHM,0.1%,0.25W	91637	MFF1421C311R7B
R171	322-0702-07			RES.,FXD,FILM:421.6 OHM,0.1%,0.25 W	91637	MFF1421C421R6B
R172	322-0703-07			RES.,FXD,FILM:311.7 OHM,0.1%,0.25W	91637	MFF1421C311R7B
R174	322-0701-07			RES.,FXD,FILM:490.9 OHM,0.1%,0.25W	91637	MFF1421C490R9B
R175	322-0704-07			RES.,FXD,FILM:121.2 OHM,0.1%,0.25W	91637	MFF1421C121R2B
R176	322-0701-07			RES.,FXD,FILM:490.9 OHM,0.1%,0.25W	91637	MFF1421C490R9B
R178	322-0700-07			RES.,FXD,FILM:588.1 OHM,0.1%,0.25W	91637	MPP1421C588R1B
R179	321-1008-04			RES.,FXD,FILM:12.0 OHM,0.1%,0.125W	91637	MFF1816D12R00B
R180	322-0700-07			RES.,FXD,FILM:588.1 OHM,0.1%,0.25W	91637	MPP1421C588R1B
R191	311-0633-00			RES.,VAR,NONWIR:5K OHM,10%,0.50W	80740	62-58-3
R194	315-0102-00			RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
R195	315-0103-00			RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
R200	315-0202-00			RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
R206	315-0202-00			RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
R210	315-0202-00			RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
R212	315-0472-00			RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
R220	315-0301-00			RES.,FXD,CMPSN:300 OHM,5%,0.25W	01121	CB3015
R224	321-0661-00			RES.,FXD,FILM:600 OHM,1%,0.125W	75042	CEATO-6000F

# Replaceable Electrical Parts—SG 502

Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
R235	315-0511-00			RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
R238	315-0102-00			RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
R240	315-0302-00			RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
R320	301-0201-00			RES., FXD, CMPSN: 200 OHM, 5%, 0.50W	01121	EB2015
R321	315-0510-00			RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
R322	307-0051-00			RES., FXD, CMPSN: 2.7 OHM, 5%, 0.50W	01121	EB27G5
R325	315-0100-00			RES., FXD, CMPSN: 10 OHM, 5%, 0.25W	01121	CB1005
R330	315-0100-00			RES., FXD, CMPSN: 10 OHM, 5%, 0.25W	01121	CB1005
R340	301-0201-00			RES., FXD, CMPSN: 200 OHM, 5%, 0.50W	01121	EB2015
R341	315-0510-00			RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
R342	307-0051-00			RES., FXD, CMPSN: 2.7 OHM, 5%, 0.50W	01121	EB27G5
R345	315-0100-00			RES., FXD, CMPSN: 10 OHM, 5%, 0.25W	01121	CB1005
R346	315-0301-00			RES., FXD, CMPSN: 300 OHM, 5%, 0.25W	01121	CB3015
R348	321-0314-00	B010100	B029999	RES., FXD, FILM: 18.2K OHM, 1%, 0.125W	75042	CEAT0-1822F
R348	321-0314-00	B030000		RES., FXD, FILM: 18.2K OHM, 1%, 0.125W	75042	CEAT0-1822F
R350	315-0100-00			RES., FXD, CMPSN: 10 OHM, 5%, 0.25W	01121	CB1005
S50A)	260-1449-00			SWITCH, TOGGLE: 5 STA, NON-SHORT, INTERLOCK	80009	260-1449-00
S50B)						
S50C)						
S50D)						
S50E)						
S160A)	260-1448-00			SWITCH, TOGGLE: 3 STA, NON-SHORT	80009	260-1448-00
S160B)						
S160C)						
U320	156-0208-00			MICROCIRCUIT, LI: DUL TRACKING VOLT REG	80009	156-0208-00