

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check inner board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

TEST JIG HOOKUP				
Chek-A-Color Function	Adapter No.	PC Board Plug No.	Pin	Color
CRT	B239	K	1	Red
Yoke	D4137		2	Blue
Yoke Setting	YP1		4	Yellow
Comments	Focus Tap		5	Green

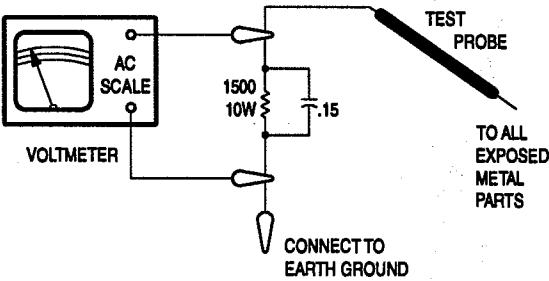
SAFETY CHECKS – FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



HIGH VOLTAGE SHUTDOWN TEST

Check for 25.3V ± 1.8V at the cathode of D712. Apply an external 28.0V to the cathode of D712. The receiver should go into shutdown. If the receiver fails to go into shutdown, the high voltage shutdown circuit requires repair. To return the receiver to normal operation, remove the power for about 20 seconds.

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by Howard W. Sams & Company as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to Howard W. Sams & Company by the manufacturers of the specific type of replacement part listed.

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PHOTOFACT® Technical Service Data

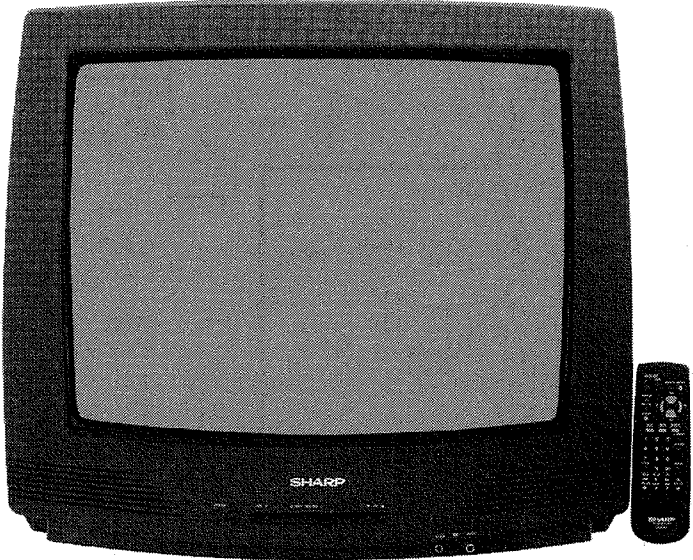
SET 3642

MODELS 25G-M80/M100/M120

SHARP

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SHARP
Models 25G-M80/M100/M120



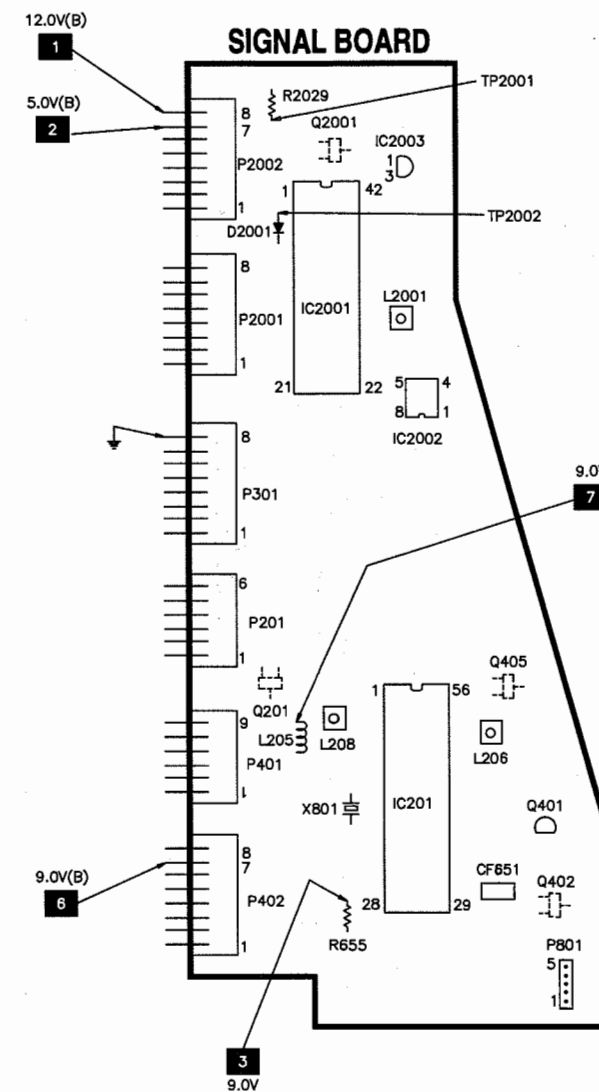
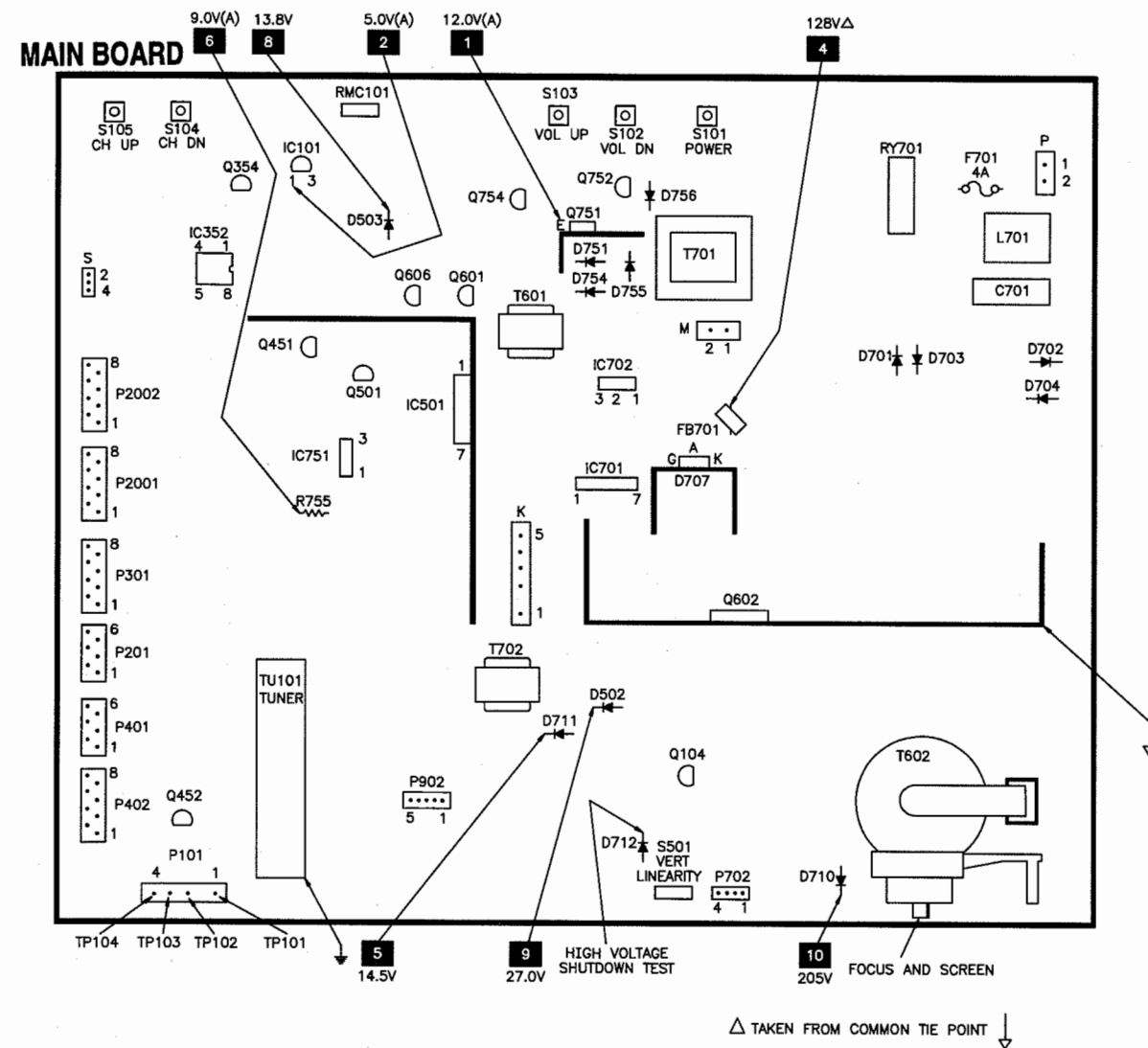
Model 25G-M100
Complete coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts list
- Troubleshooting guide

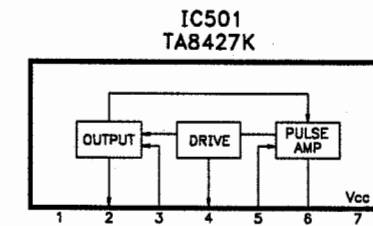
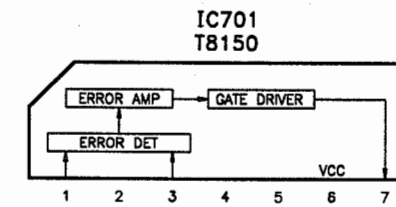

HOWARD W. SAMS & COMPANY
APRIL 1996 SET 3642

For Supplier Address,
See PHOTOFACT Annual Index

IC FUNCTIONS

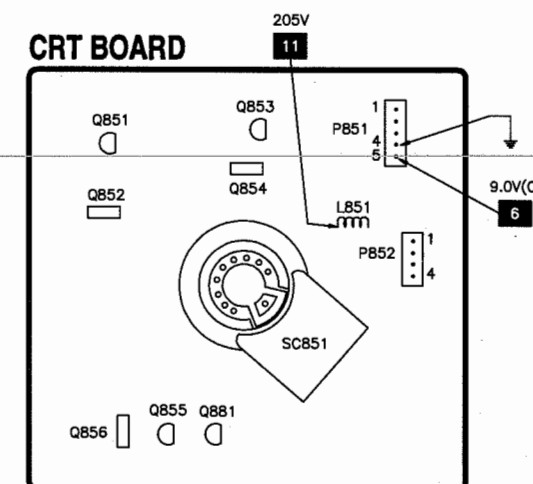


NOTE: DOTTED COMPONENTS LOCATED ON
OTHER SIDE OF BOARD




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& Company.

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B. Skinner, D. Sullivan*



SERVICE MODE ADJUSTMENT CHART

Service No.	Adjustment	Data Range	Data Value	Notes
S1	Sub Picture	0-127	85	-
S2	Sub Tint	0-127	70	-
S3	Sub Color	0-127	50	-
S4	Sub Brightness	0-127	64	-
S5	Sharpness	0-63	36	-
S6	Vertical Phase	0-7	0	Must be set to "0"
S7	Horizontal Position	0-31	18	-
S8	RF AGC	0-63	35	"0" produces black raster
S9	Vertical Size	0-63	32	-
S10	VCO	0-127	60	-
S11	Red Cutoff	0-255	0	-
S12	Green Cutoff	0-255	0	-
S13	Blue Cutoff	0-255	0	-
S14	Green Gain	0-255	127	-
S15	Blue Gain	0-255	127	-
S16	3.58MHz Trap	0-1	0	"0"= On, "1"= Off
S17 (1)	Bandpass Filter (BPF)	0-1	1	"0"= On, "1"= Off
S18 (1)	Blanking	0-1	0	"0"= On, "1"= Off
S19	Y-Mute/Vertical, Collapse	0-3	0	"0"= Normal Raster, "1"= No Y, "2"= Test Mode, "3"= No Vertical
S20 (1)	Horizontal AFC	0-1	1	"0"= X2 Gain, "1"= Normal Gain
S21	White Peak Limiter (WPL)	0-1	1	"1"= On, "0"= Off
S22 (1)	60Hz	0-1	0	"0"= Normal Viewing, "1"= NA
S23	Volume	8-58	26	Adjust for normal listening volume.
S24	Audio Balance	0-63	32	Adjust for center of data range.
S25	Caption Position	0-127	23	-
S26	Level	0-63	32	Not used.
S27	St VCO	0-63	24	Not used.
S28	Filter	0-63	24	Not used.
S29	Low-Sep	0-63	35	Not used.
S30	High-Sep	0-63	27	Not used.
S31	SAP VCO	0-63	33	Not used.
S32	X-Ray Protector	0-255	FF	-
S33	Option	00-FF	00	-

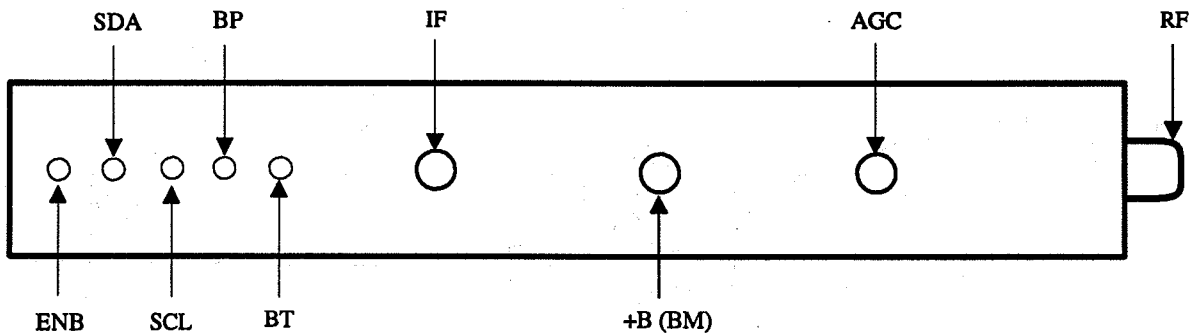
(1) No adjustment is required, proper setting is automatic.

TUNER INFORMATION

TUNER VOLTAGE CHART			
Pin	VHF Low Band	VHF High Band	UHF Band
ENB	0V	0V	0V
SDA	5.0V	5.0V	5.0V
SCL	5.0V	5.0V	5.0V
BP	5.1V	5.1V	5.1V
BT	32.2V	32.3V	32.3V
IF	0V	0V	0V
+B (BM)	8.9V	8.8V	8.9V
AGC	4.8V	4.8V	4.8V

NOTE: VHF Low Band voltages taken on channel 2.
VHF High Band voltages taken on channel 7.
UHF Band voltages taken on channel 14.

TUNER TERMINAL GUIDE



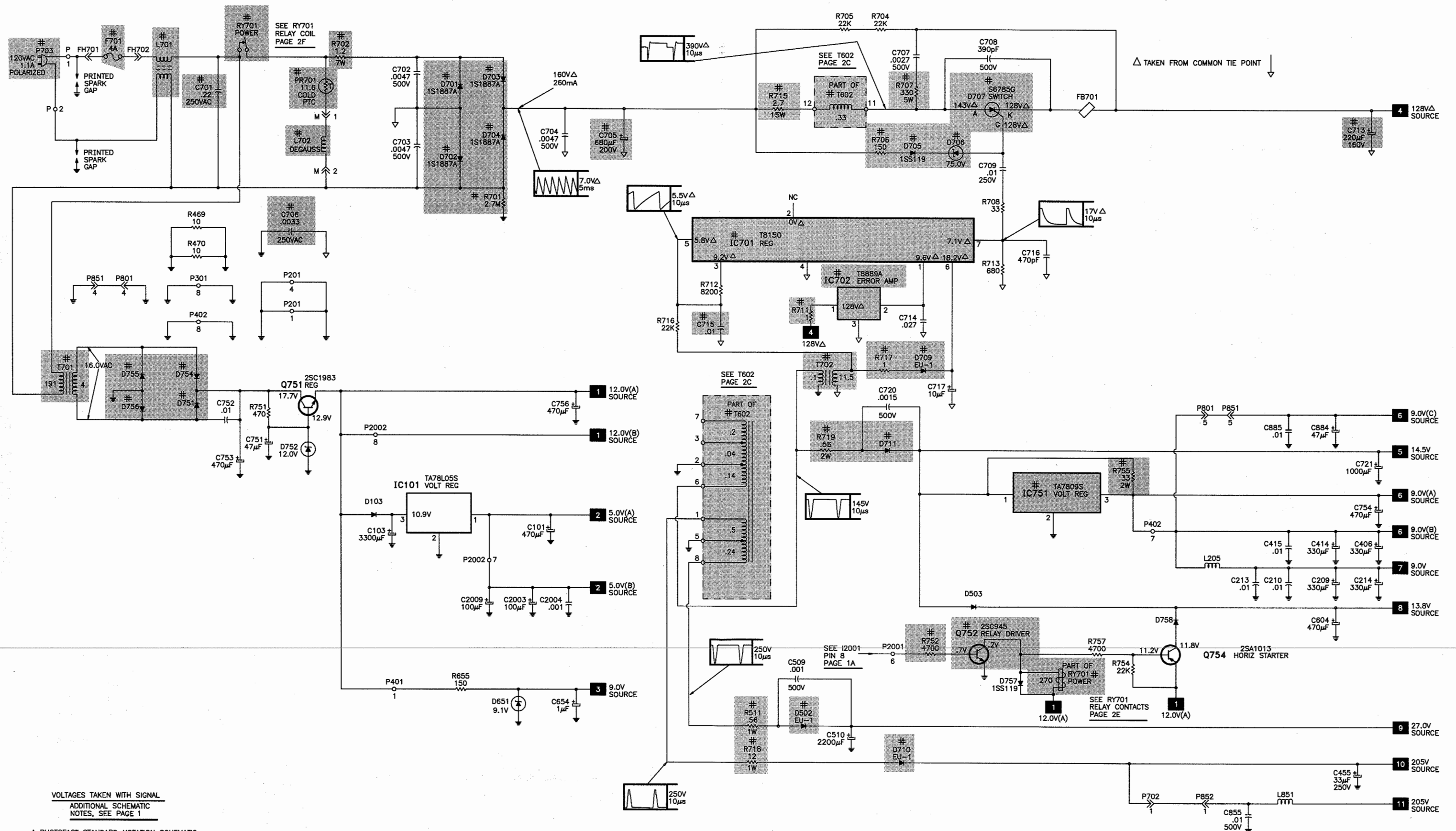
SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- * Circuitry not used in some versions.
- Circuitry used in some versions.
- ⏏ Ground
- ⏏ Chassis ground
- ⏏ Common tie point
- △ Taken from common tie point
- 3 Schematic CIRCUITRACE®: Voltage source tie point.
- A— Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms taken with triggered scope and colorbar signal.
Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
Supply voltages maintained as seen at input.
Voltages measured with digital meter and a 1000µV RF signal, with colorbar pattern, applied to antenna terminal.
Controls adjusted for normal operation.
Capacitors are 50 volts or less, 5% or greater unless noted.
Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.
Resistors are 1/2W or less, 5% or greater unless noted.
Value in () used in some versions.
Measurements with switching as shown, unless noted.
Rated voltage shown on zener diodes.

SHARP
MODELS 25G-M80/M100/M120

POWER SUPPLY SCHEMATIC



TROUBLESHOOTING



Check F701. If F701 is open, check C701 thru C705, D701 thru D704, D751, D754, D755, D756, and T701. Apply 120VAC and check for 12.0V at the emitter of Q751. If 12.0V is missing, check T701, D751, D754, D755, D756, Q751, and D752. Turn receiver on and check for 160V* at the cathode of D704. If 160V* is missing, check R702, C705, and RY701. If 160V* is present, check for 128V* at the cathode of D707. If 128V* is missing, check D707, IC701, and IC702. If 128V* is present, refer to the "Horizontal" section of this Troubleshooting guide.

* Taken from common tie point.

RASTER

Check the CRT and CRT voltages. If red is missing, check Q851, Q852, and pin 19 of IC201. If green is missing, check Q853, Q854, and pin 20 of IC201. If blue is missing, check Q855, Q856, and pin 21 of IC201. If the raster has a keystone shape, check deflection yoke. If the raster has height or width problems, refer to the "Vertical," "Horizontal," or "Power Supply" sections of this Troubleshooting guide.

VIDEO

Inject a video signal at pin 47 of IC201 and check for video on the CRT. If video is present, refer to the "IF AGC" section of this Troubleshooting guide. If video is missing, check for a video waveform at pin 43 of IC201. If missing, check Q405, Q401, Q402, Q451, and pins 37 and 41 of IC201. If the waveform is present, check pins 14 thru 21, 36, and 38 of IC201.

CHROMA

Check for a chroma waveform at pin 45 of IC201. If waveform is missing, refer to the "Video" section of this Troubleshooting guide. Check for the proper waveforms at pins 19, 20, and 21 of IC201. If waveforms are missing, check pin 12 of IC201 for 3.58MHz and check IC201. If the proper waveforms are present, refer to the "Raster" section of this Troubleshooting guide.

IF AGC

Inject an IF signal at the IF input and check for video on the CRT. If a picture is present on the CRT, check the tuner and AGC circuits. If the picture is missing, check for a video waveform at pin 47 of IC201. If the waveform is present, refer to the "Video" section of this Troubleshooting guide. If the waveform is missing, apply AGC bias to pin 5 of IC201, if the waveform is now present, check pins 3, 7, 8, and 44 of IC201. If the waveform is still missing, check Q201 and pins 3, 5, 6, 42, 47 thru 50, 53, and 54 of IC201. A defective AGC circuit can cause an overloaded picture, excessive snow or loss of audio and video.

AUDIO

Select an active channel and check for an audio waveform at pin 1 of IC201. If the waveform is missing, check pins 1, 4, and 52 of IC201. If the waveform is present, check IC352 and Q354.

CAUTION: Care should be taken in defeating the high voltage shutdown circuit, as this may cause excessive X-radiation and damage to the CRT, T602, and associated components.

The high voltage from T602 is monitored and rectified by D712. Should the high voltage increase, the rectified voltage at the cathode of D712 will also increase and trigger pins 16 and 17 of IC2001 into shutting down the receiver. To troubleshoot, disconnect the cathode of D712. Use a variable AC transformer for AC power, start at 90VAC and increase as necessary to isolate and correct the defect.

Voltage Taken in Shutdown

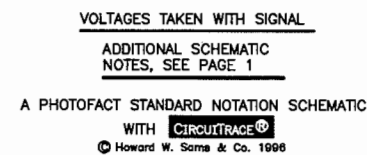
IC2001 Pin 16 4.5V

HORIZONTAL

To determine if the receiver is in shutdown, refer to the "High Voltage Shutdown" section of this Troubleshooting guide. If receiver is not in shutdown, inject a horizontal signal at the base of Q602. If horizontal sweep returns, check Q601, Q606, T601, and pins 26, 30 thru 34 of IC201. If horizontal sweep is still missing, check Q602, T602, D502, D503, D710, D711, and IC751 for defects. The high voltage rectifier is part of T602 and may be defective. Poor horizontal linearity or foldover problems may be caused by C607, C608, C612, and C614.

VERTICAL

Inject a vertical drive signal at pin 4 of IC501. If vertical deflection returns, check pins 22, 23, and 24 of IC201. If vertical deflection does not return, check IC501 and deflection yoke. Vertical linearity or foldover problems may be caused by C502, C508, C513, C514, and C515 being defective.



MISCELLANEOUS ADJUSTMENTS

HIGH VOLTAGE CHECK

Tune in a picture. Set brightness, color, picture, and screen control to minimum. Connect a high voltage probe to CRT anode. High voltage should measure 26kV to 28kV.

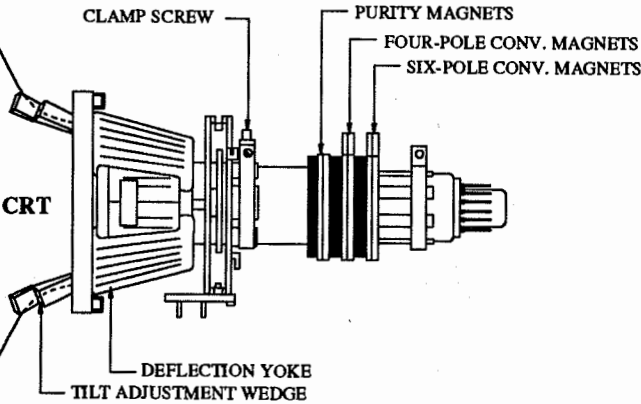
CONVERGENCE

Operate the receiver for 15 minutes. Connect a color bar generator to the antenna terminals and tune in a dot pattern. Adjust the 4-pole magnet tabs to converge the red and blue dots at the center of the screen. Adjust the 6-pole magnet tabs to converge the red/blue dots over the green dots at the center of the screen.

NOTE: Rotate the two tabs of each set of magnets equally and opposite to converge vertically and rotate both tabs in the same direction to converge horizontally. The 4-pole and 6-pole magnets interact, repeat adjustment until center convergence is correct.

Tune in a crosshatch pattern and remove the rubber wedges between the deflection yoke and the CRT. Tilt the deflection yoke up or down to converge the vertical lines at top and bottom of screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke right or left to converge horizontal lines at top and bottom of screen and the vertical lines at the right and left sides of the screen. Repeat convergence procedure if necessary to obtain best overall convergence. Apply adhesive to wedges and carefully replace on the CRT.

CRT NECK ASSEMBLY



SERVICE INFORMATION

Service mode adjustments are required if IC201, IC2702, or CRT is replaced. CRT replacement requires CRT adjustments only. Service mode adjustments should not be required if only IC2001 is replaced.

Perform the following after replacement of IC2001 or IC2002. Check the voltage at the cathode of D712, it should measure 25.3V ±1.8V. Enter the service mode, select service number S32. Make sure that the data changes by pressing the volume up / down buttons on the remote transmitter. Perform the "High Voltage Shutdown Test".

Entering Service Mode

Turn receiver on and use reset function in the video adjustment menu to ensure that customer controls are in their proper reset position. Short test points TP2001 and TP2002 to enter the service mode.

When in the service mode a letter S with a number is displayed in the lower left part of the screen and a letter D with a number is displayed in the lower right part of the screen. The S number is the service adjustment and it is changed by pressing the channel up / down buttons on the receiver or remote transmitter. The D number is the present data value of the service adjustment and it can be changed by pressing the volume up / down buttons on the receiver or remote transmitter. For a complete listing of the service adjustments, refer to the "Service Mode Adjustment Chart".

Exit Service Mode

To exit service mode when finished making adjustments, remove short from test points TP2001 and TP2002.

RF AGC

Tune in a picture. Enter the service mode, select service number S8. Set the data value to a point where no snow (noise) appears in picture. Exit the service mode to select another channel. Check all channels for proper operation.

VCO

Connect a digital voltmeter to pin 44 of IC201 and ground. Tune in a local channel. Enter the service mode, select service number S10. Set the data value to obtain 2.2V on the digital voltmeter.

Sub Picture

Tune in a picture. Set brightness to minimum. Set picture to maximum. Enter the service mode, select service number S1. Set the data value to achieve normal contrast range.

Sub Tint

Tune in a picture. Set tint at center of its range level. Enter the service mode, select service number S2. Set the data value to achieve normal flesh tones.

Sub Color

Tune in a picture. Set color at center of its range level. Enter the service mode, select service number S3. Set the data value to achieve normal color level.

Sub Brightness

Tune in a picture. Set brightness at center of its range level. Enter the service mode, select service number S4. Set the data value to achieve normal brightness level.

Vertical Size

Tune in a crosshatch pattern. Enter the service mode, select service number S9. Set the data value to achieve proper vertical size and best vertical linearity.

Vertical Phase

Tune in a crosshatch pattern. Enter the service mode, select service number S6. Set the data value to 0.

Horizontal Position

Tune in a crosshatch pattern. Enter the service mode, select service number S7. Set the data value for the best centering on screen.

Caption Position

Tune in a local channel. Enter the service mode, select service number S25. A black box will appear on the screen. Set the data value to center the black box on the screen.

White Balance

Operate the receiver for 15 minutes. Enter the service mode, select service number S3. Set the data value to 0. Set brightness for a visible raster. Alternately adjust data value of S14 and S15 until a good gray scale with normal white is obtained. Select service number S3. Set the data value to achieve normal color level.

Gray Scale

Connect a digital voltmeter across R852 on the CRT board. Tune in an active channel. Set color, brightness, and picture to minimum. Enter the service mode, select service number S3. Set the data value to 0. Select service number S19, adjust the data value to 1, this turns off the luminance signal (no Y). Select service number S4, adjust the data value to obtain .15V on the digital voltmeter. Adjust screen control, if necessary, to obtain a barely visible raster. Adjust service numbers S11, S12, and S13 for a good gray scale with normal white at high and low brightness. Select service number S19 and adjust the data value to 0. Select service number S3 and adjust the data value to achieve normal color level. Adjust screen control for normal brightness.

Horizontal AFC

Tune in a local channel. Enter the service mode, select service number S20. Set data value to 1, which is normal AFC gain. If increased horizontal gain is required, adjust data value to 0.

Blanking

Tune in a local channel. Enter the service mode, select service number S18. Set data value to 0, which is normal blanking. If data value is set to 1, blanking will be turned off.

White Peak Limiter (WPL)

Tune in a local channel. Enter the service mode, select service number S21. Set data value to 1 to turn on WPL or to 0 to turn it off.

3.58MHz Trap

Tune in a local channel. Enter the service mode, select service number S16. Set data value to 0 to turn on 3.58MHz trap or to 1 to turn it off.

Bandpass Filter (BPF)

Tune in a local channel. Enter the service mode, select service number S17. Set data value to 0 to turn on bandpass filter or to 1 to turn it off.

Sharpness

Tune in a local channel. Enter the service mode, select service number S5. Set data value for proper sharpness.

60Hz

Tune in a local channel. Enter the service mode, select service number S22. Set data value to 0 which is normal viewing.

TEST EQUIPMENT

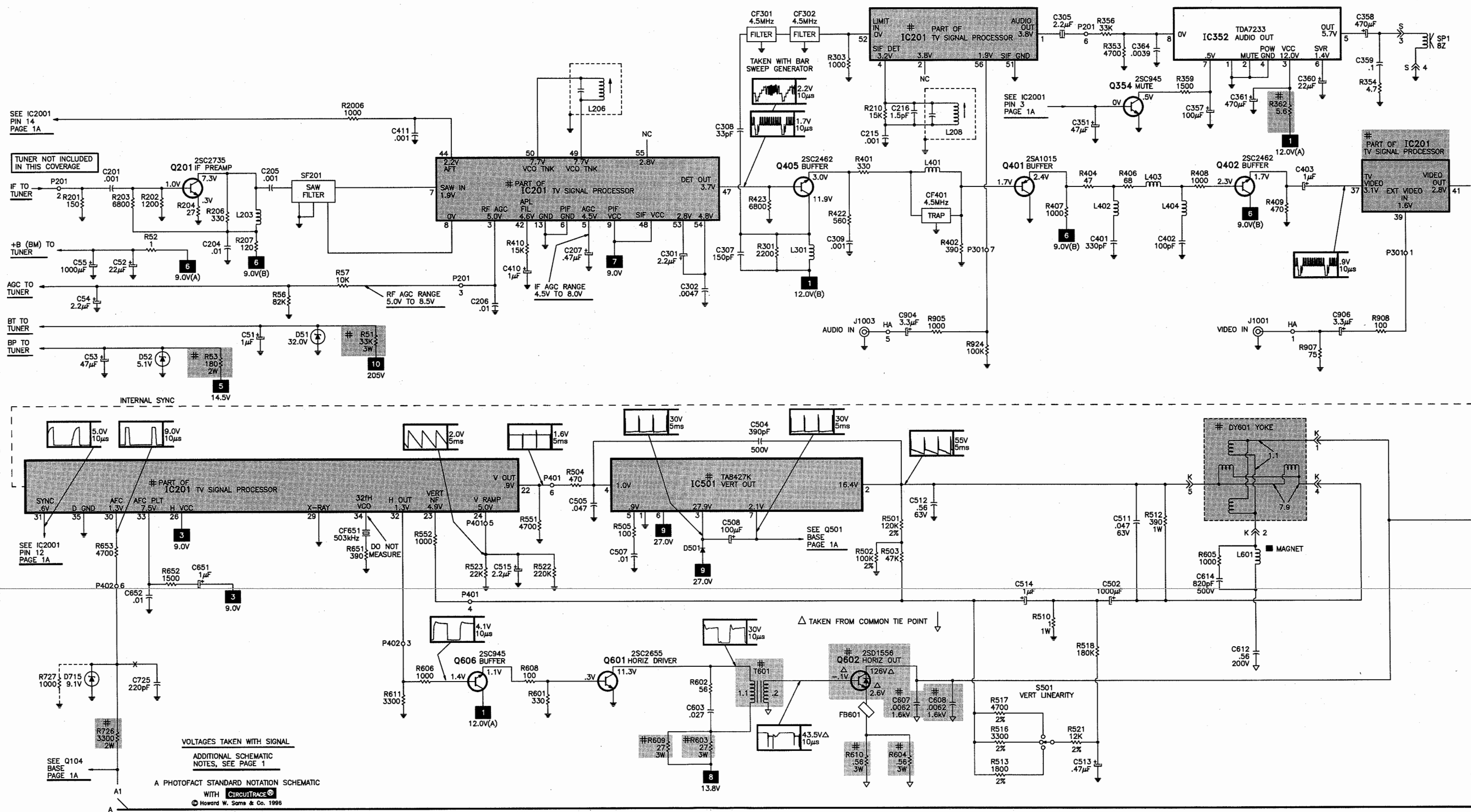
Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	Sencore No.
Oscilloscope	SC3100
Generators	
RGB	CM2000
Multiburst Signal	VG91
Color Bar	VG91
TV Stereo	VG91
Digital VOM	SC3100
Frequency Meter	SC3100
Hi-Voltage Probe	HP200
Accessory Probes	TP212
Isolation Transformer	PR57
Capacitance Analyzer	LC101, LC102
CRT Analyzer	CR70
AC Leakage Tester	PR57
Inductance Analyzer	LC101, LC102
Flyback Yoke Tester	TVA92
TV Stereo Power Monitor	SR68, PA81
Field Strength Meter	SL750
Transistor Tester	TF46
Video Analyzer	VG91, TVA92

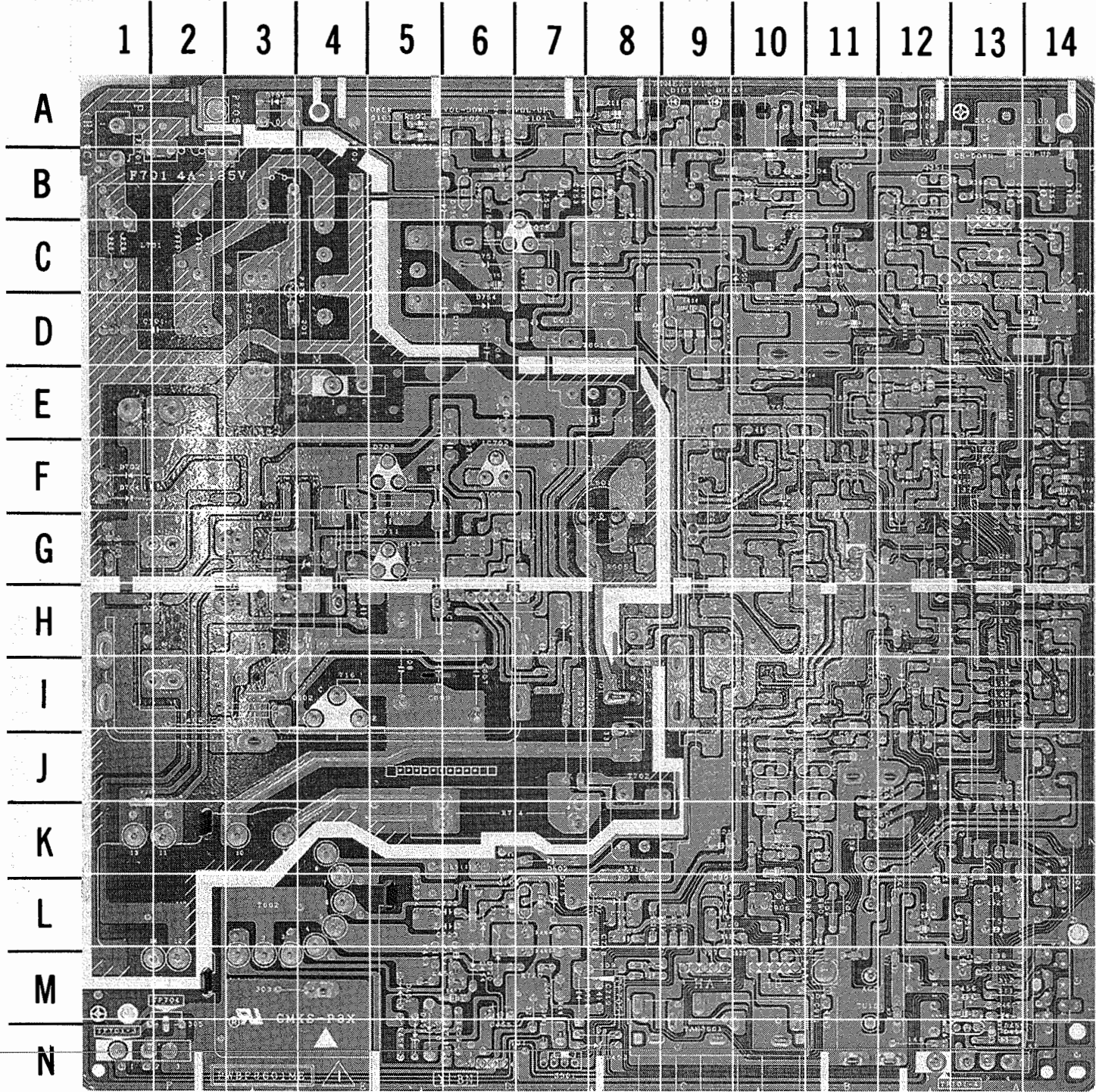
A

TELEVISION SCHEMATIC

B



MAIN BOARD - BOTTOM VIEW

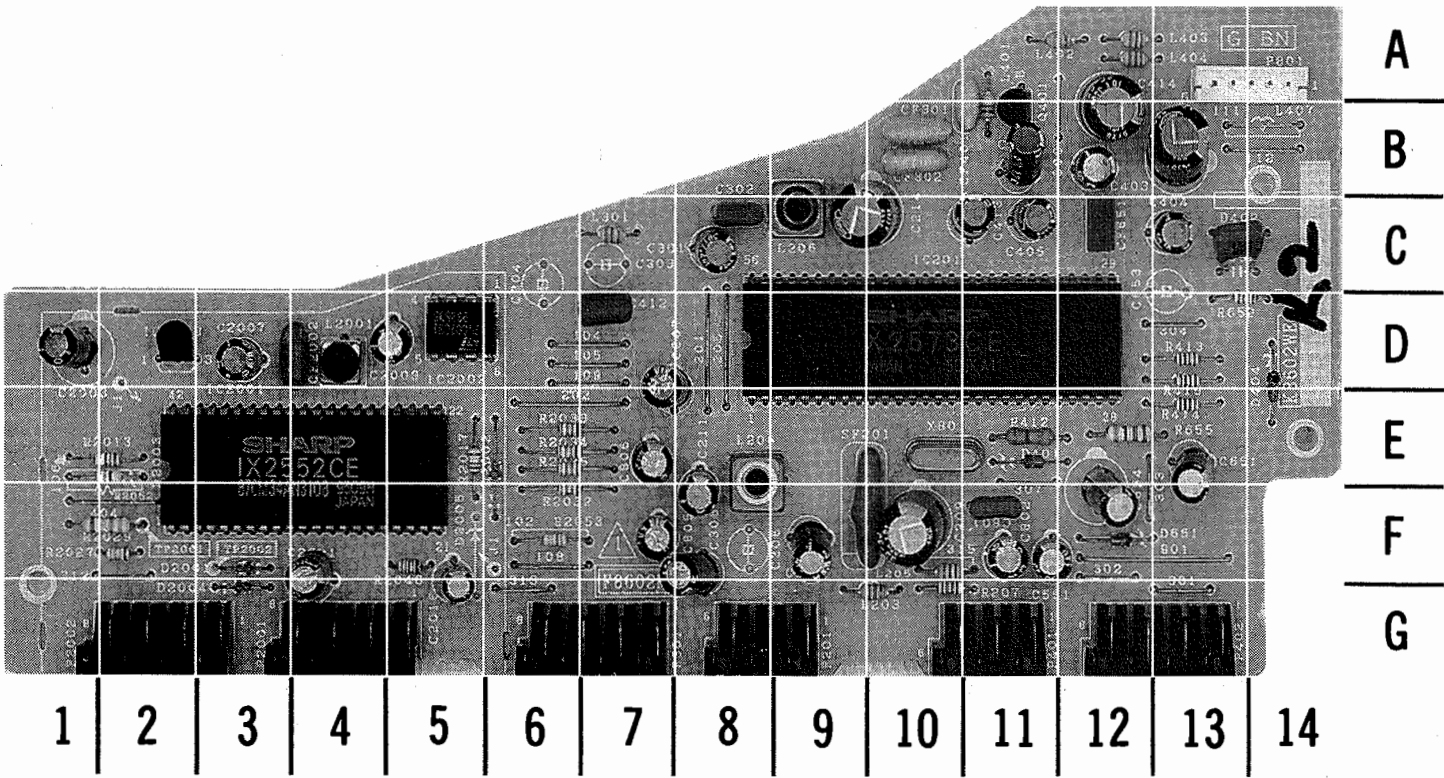


MAIN BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C105	L-7	R102	A-5	R353	D-12	R464	E-12	R725	L-6
C106	A-11	R103	A-6	R354	D-14	R503	G-11	R752	B-6
C457	E-12	R104	A-6	R453	F-12	R505	F-9	R754	B-6
C716	G-6	R108	F-14	R454	E-13	R506	F-10	R757	B-8
C752	C-6	R109	F-14	R455	E-13	R507	F-10	R908	K-10
R52	L-13	R110	B-10	R457	M-6	R601	D-9	R924	I-12
R56	L-12	R112	A-8	R461	N-13	R608	D-9		
R101	A-5	R114	A-8	R462	M-13	R611	D-11		

A HOWARD W. SAMS GRIDTRACE™ PHOTO

SIGNAL BOARD - TOP VIEW



A HOWARD W. SAMS GRIDTRACE™ PHOTO

SIGNAL BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C207	F-9	C654	F-12	D402	C-13	L403	A-12	R655	E-12
C209	F-10	C801	F-11	D404	D-14	L404	A-12	R2013	E-2
C211	F-8	C802	F-11	D651	F-12	L2001	D-4	R2017	E-5
C214	C-9	C805	F-7	D2001	F-3	P201	G-9	R2027	F-2
C301	C-8	C806	E-7	D2002	E-6	P301	G-7	R2029	F-2
C302	C-8	C807	D-7	D2004	G-3	P401	G-11	R2032	F-6
C305	F-8	C2001	G-4	IC201	E-8	P402	G-13	R2033	E-6
C404	C-13	C2003	D-1	IC2001	F-2	P801	A-14	R2034	E-6
C405	C-11	C2007	D-3	IC2002	D-5	P2001	G-5	R2035	E-6
C406	B-13	C2009	D-5	IC2003	D-2	P2002	G-3	R2046	F-5
C410	B-11	C2016	G-5	L203	G-10	Q401	B-11	R2052	E-2
C412	D-7	CF301	B-10	L205	F-10	R207	G-10	R2053	F-6
C413	C-11	CF302	B-10	L206	C-9	R412	E-11	SF201	E-10
C414	B-12	CF401	B-11	L208	E-8	R413	D-13	TP2001	F-2
C551	F-11	CF651	C-12	L301	C-7	R414	E-13	TP2002	F-3
C651	E-13	CF2002	D-4	L401	B-11	R415	D-13	X801	E-10
C652	C-13	D401	E-11	L402	A-12	R652	D-13		

SHARP

MODELS 25G-M80/M100/M120

PARTS LIST continued

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
# Q752	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q754	2SA1013	VS2SA1013//1E	NTE32	ECG32	SK3867A
Q851	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q852	2SC3619	VS2SC3619LB1E	NTE157	ECG157	SK3747
Q853	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q854	2SC3619	VS2SC3619LB1E	NTE157	ECG157	SK3747
Q855	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q856	2SC3619	VS2SC3619LB1E	NTE157	ECG157	SK3747
Q881	2SA1015(Y)	VS2SA1015Y/1E	NTE290A	ECG290A	SK9132
Q2001	2SC2462	VS2SC2462-C-1	NTE2408	ECG2408	SK10099

For SAFETY use only equivalent replacement part.

COILS & TRANSFORMERS

Item No.	Function/Rating	Mfr. Part No.
# DY601 (1)	Yoke Horiz 1.27mH Vert 19.0mH	RCILH0079MEZZ
# DY601 (2)	Yoke	RCILH0080MEZZ
# DY601 (3)	Yoke	RCILH0081MEZZ
FB601	Ferrite Bead	RBLN-0037CEZZ
FB701	Ferrite Bead	RBLN-0037CEZZ
L203	1.2µH	VP-XF1R2K0000
L205	10µH	VP-MK100K0000
L206	1F	RCIL10588CEZZ
L208	SIF	RCIL10605CEZZ
L301	8.2µH	VP-OF8R2K0000
L401	6.8µH	VP-XF6R8K0000
L402	3.3µH	VP-XF3R3K0000
L403	8.2µH	VP-XF8R2K0000
L404	8.2µH	VP-XF8R2K0000
L452	68µH	VP-MK680K0000
L601	Horizontal Linearity	RCILZ0621CEZZ
# L701	Line Filter	RCILF0235CEZZ
	Line Filter	RCILF0087CEZZ
	Line Filter	RCILF0090CEZZ
# L702	Degaussing	RCILG0007MEZZ
L851	82µH	VP-MK820K0000
L2001	Osc	RCILB0131CEZZ
# T601	Horizontal Driver	RTRNZ0168CEZZ
# T602 (4)	Horizontal Output	RTRNF0012MEZZ
# T701	Power	RTRNP0416CEZZ
# T702	Separator	RTRNZ0625CEZZ

For SAFETY use only equivalent replacement part.

- (1) Use with CRT VB63AFW22X/*S.
(2) Use with CRT VB63LAT96X/*S.
(3) Use with CRT VB63LAV11X/*S.
(4) Focus and screen controls are part of T602.

CABINET PARTS

Item	Mfr. Part No.
MODEL 25G-M80	
Button Channel Up/Dn	JBTN-1056MEKA
Button Power, Volume Up/Dn	JBTN-1055MEKA
Cabinet Front	CCABA1221MES0
Cabinet Rear	GCABB1098MEKA
Cover, Remote Transmitter	GCOVA1010MEKA
Window	GMADT0091MEKA
MODEL 25G-M100	
Button Channel Up/Dn	JBTN-1058MEKA
Button Power, Volume Up/Dn	JBTN-1057MEKA
Cabinet Front	CCABA1223MES0
Cabinet Rear	GCABB1101MEKA
Cover, Remote Transmitter	GCOVA1011MEKA
Window	GMADT0092MEKA
MODEL 25G-M120	
Button Channel Up/Dn	JBTN-1058MEKA
Button Power, Volume Up/Dn	JBTN-1057MEKA
Cabinet Front	CCABA1225MES0
Cabinet Rear	GCABB1101MEKA
Cover, Remote Transmitter	GCOVA1011MEKA
Window	GMADT0093MEKA

CONTROLS & RESISTORS

Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
# PR701	11.6 Cold PTC	RMPTP0026CEZZ	-
# R51	33K 5% 3W	VRS-RG3LB333J	3W333
# R53	180 5% 2W	VRS-RG3DB181J	2W118
# R362	5.6 5% 1/2W	VRD-RM2HD5R6J	HW5D6
# R456	10K 5% 1/2W	VRS-RG2HC103J	HW310
# R465 (1)	1.2 5% 2W	VRN-RL3DB1R2J	2W1D2
# R468 (2)	2.7 5% 1W	VRN-RL3AB2R7J	1W2D7
R501	120K 2% 1/8W	VRD-RA2BE124G	EW412
R502	100K 2% 1/8W	VRD-RA2BE104G	EW410
# R511	.56 5% 1W	VRN-RL3ABR56J	1WD56
R513	1800 2% 1/8W	VRD-RA2BE182G	EW218
R516	3300 2% 1/8W	VRD-RA2BE332G	EW233
R517	4700 2% 1/8W	VRD-RA2BE472G	EW247
R521	12K 2% 1/8W	VRD-RA2BE123G	EW312
# R603	27 5% 3W	VRS-RG3LB270J	3W027
# R604	.56 5% 3W	VRN-RL3LBR56J	-
# R609	27 5% 3W	VRS-RG3LB270J	3W027
# R610	.56 5% 3W	VRN-RL3LBR56J	-
# R701	2.7M 10% 1/2W	VRC-UA2HG275K	HW527
# R702	1.2 10% 7W Wirewound	VRW-KQ3NC1R2K	-
# R706	150 5% 1/2W	VRS-RG2HC151J	HW115
# R707	330 10% 5W Wirewound	VRW-KQ3HC331K	5W133
# R711	1 5% 1/4W	VRN-GA2EB1R0J	QW1D0
# R714	3.3 10% 15W Wirewound	VRW-KQ41C3R3K	-
# R715	2.7 10% 15W Wirewound	VRW-KQ41C2R7K	-
# R717	1 5% 1/4W	VRN-GA2EB1R0J	QW1D0
# R718	12 5% 1W	VRS-RG3AB120J	1W012
# R719	.56 5% 2W	VRN-RL3DBR56J	2WD56
# R720	8.2 5% 1/2W	VRN-RL2HC8R2J	HW8D2
# R721	8200 5% 1/8W	VRD-RA2BE822J	EW282
# R722	47K 1% 1/8W	VRD-RA2BE473F	EW347
# R726	3300 5% 2W	VRS-RG3DB332J	2W233
# R728	82K 1% 1/8W	VRN-RA2BK823F	-
# R752	4700 5% 1/8W	VRD-MN2BE472J	EW247
# R755	33 5% 2W	VRS-RG3DB330J	2W033
# R857, 65, 73	12K 5% 3W	VRS-VV3LB123J	3W312
# R2007	8200 5% 1/16W	VRS-TV1JD822J	-
# R2045	1000 5% 1/16W	VRS-TV1JD102J	-
# R2046	22K 1% 1/8W	VRN-RA2BK223F	-
# R2047	1000 5% 1/16W	VRS-TV1JD102J	-

For SAFETY use only equivalent replacement part.

- (1) Used with CRT VB63LAT96X/*S and VB63LAV11X/*S.
(2) Used with CRT VB63AFW22X/*S.

MISCELLANEOUS

Item No.	Description	Mfr. Part No.	Notes
CF301	Filter	RFILC0029TAZZ	4.5MHz
CF302	Filter	RFILC0267CEZZ	4.5MHz
CF401	Trap	RFILC0013CEZZ	4.5MHz
CF651	Crystal	RFILA0034CEZZ	503kHz
CF2002	Filter	RFILC0121GEZZ	-
# F701	Fuse	QFS-B4023CEZZ	4Amp, 125V, Slow Blow
	Fuse	QFS-B4021GEZZ	4Amp, 125V, Slow Blow
FH701	Fuse Holder	QFSDH1013CEZZ	For F701(1 Used)
FH702	Fuse Holder	QFSDH1014CEZZ	For F701(1 Used)
J1001	Jack	QJAKE0109CEZZ	Video In
J1003	Jack	QJAKE0109CEZZ	Audio In
# P703	Line Cord	QACCD3036CESA	AC, Polarized
RMC101	Receiver	RRMCU0053GEZZ	Remote, models 25G-M100, 25G-M120
	Receiver	RRMCU0216CEZZ	Remote, model 25G-M80
# RY701	Relay	RRLYU0028CEZZ	Power
	Relay	RRLYU0036CEZZ	Power
S101	Switch	QSW-K0079GEZZ	Power
S102	Switch	QSW-K0079GEZZ	Volume Down
S103	Switch	QSW-K0079GEZZ	Volume Up
S104	Switch	QSW-K0079GEZZ	Channel Down
S105	Switch	QSW-K0079GEZZ	Channel Up
S501	Switch	QSW-B0015CEZZ	Vertical Linearity
SC851	Socket	QSOCV0916CEZZ	CRT
SF201	Filter	RFILC0236CEZZ	SAW
SP1	Speaker	VSP0080P-E98S	3" Round, 8 Ohm, 2W
TU101	Tuner (1)	VTUVTSH6UF78/	UHF/VHF
# V101	CRT	VB63AFW22X/*S	A63AFW22X
	CRT	VB63LAT96X/*S	-
	CRT	VB63LAV11X/*S	-
X801	Crystal	RCRSB0001PEZZ	3.58MHz
	Magnet	PMAGF3001MEZZ	Purity & Convergence Assembly
	PC Board (1)	DUNTK8604WEK0	CRT
	PC Board (1)	DUNTK8639WEK1	Front Unit
	PC Board (1)	DUNTK8601WEK2	Main, models 25G-M100, 25G-M120
	PC Board (1)	DUNTK8601WEK1	Main, model 25G-M80
	PC Board (1)	DUNTK8602WEK2	Signal, models 25G-M100, 25G-M120
	PC Board (1)	DUNTK8602WEK1	Signal, model 25G-M80
	Transmitter	RRMCG1127CESA	Remote
	Wedges	PSPAG0012MEZZ	Yoke Positioning (3 Used)

For SAFETY use only equivalent replacement part.

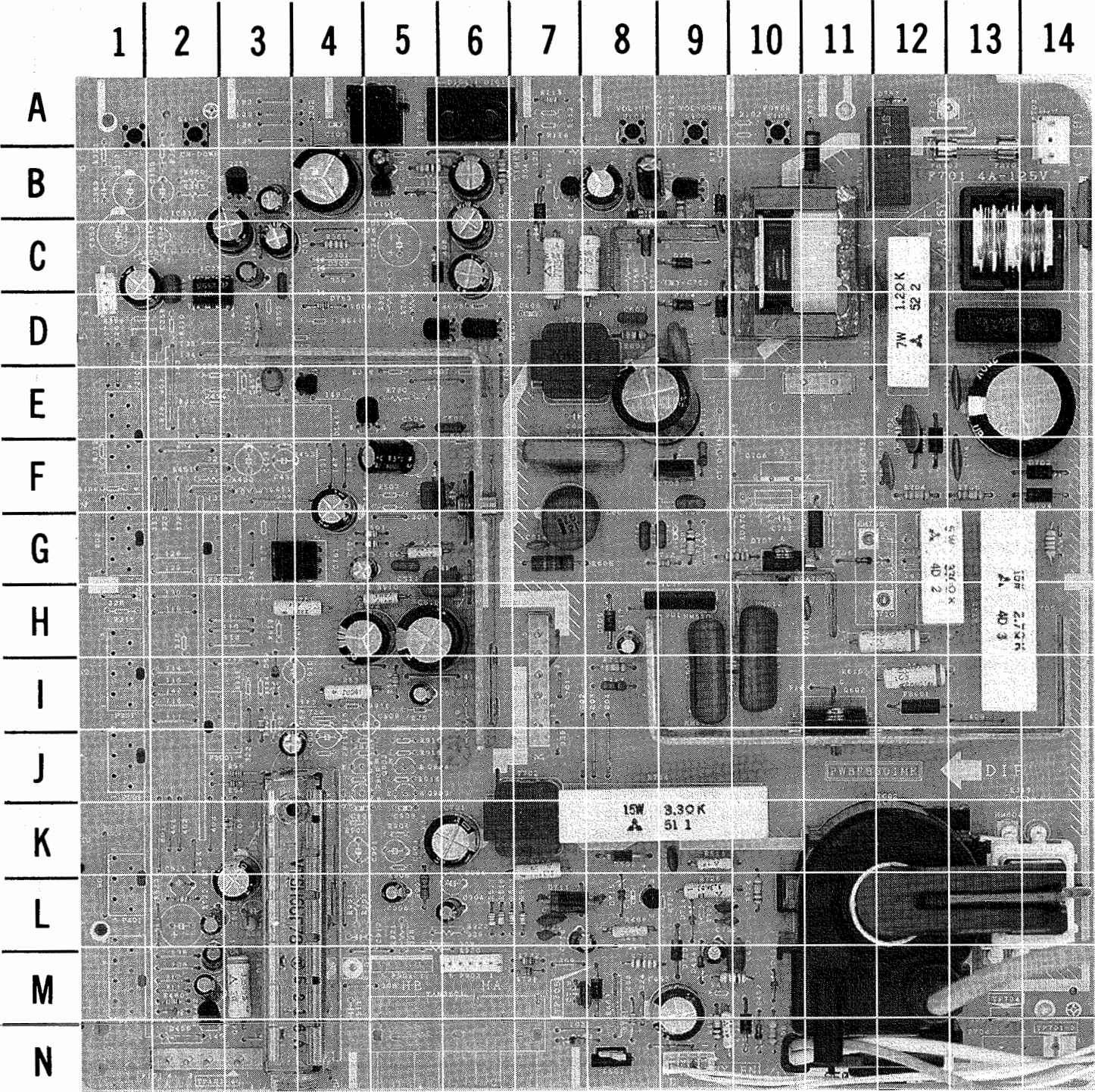
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.

CAPACITORS & ELECTROLYTICS

Item No.	Rating	Mfr. Part No.
C52	22µF 10% 16V Tantalum	VCSATA1CE226K
C305	2.2µF 20% 50V NP	CE9GA1HW225M
C515	2.2µF 10% 16V Tantalum	VCSATA1CE225K
# C607, 08	.0062 1.6kV	VCFFPD3CA622H
# C701	.22 5% 250VAC	RC-FZ012SGEZZ
	.22 5% 250VAC	RC-FZ0045CEZZ
# C705	680µF +80% -20% 200V	RC-EZ0394CEZZ
	680µF +80% -20% 200V	RC-EZ0333CEZZ
# C706	.0033 +80% -20% 250VAC	RC-KZ0311CEZZ
# C713	220µF 20% 160V	EAGW2CW227M
# C715	.01 10% 50V	CQYTA1HM103K
C854	.0047 +80% -20% 2kV	VCKYPB3DE472Z

For SAFETY use only equivalent replacement part.

MAIN BOARD - TOP VIEW



MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE									
C51	M-2	C706	D-9	D710	N-10	Q501	E-4	R610	I-12
C52	L-3	C707	F-12	D711	L-7	Q601	D-6	R701	B-11
C53	J-3	C708	H-11	D712	M-8	Q602	I-11	R702	D-12
C54	L-2	C709	F-9	D714	L-9	Q606	D-6	R704	F-12
C55	L-3	C713	E-8	D715	L-8	Q751	B-8	R705	F-13
C101	B-6	C714	G-8	D720	M-9	Q752	B-9	R706	G-14
C103	B-4	C715	G-9	D751	C-9	Q754	B-7	R707	G-12
C104	B-5	C717	H-8	D752	B-8	R51	M-3	R708	G-9
C351	B-3	C718	L-7	D754	D-9	R53	I-4	R711	F-9
C357	C-3	C719	M-7	D755	D-9	R54	J-3	R712	G-9
C358	C-1	C720	L-7	D756	B-9	R55	J-3	R713	G-10
C359	C-2	C721	K-6	D757	A-12	R57	K-3	R714	K-9
C360	C-3	C722	L-9	D758	B-7	R105	B-6	R715	H-13
C361	C-3	C723	L-9	F701	B-13	R111	B-5	R716	I-8
C364	C-3	C725	L-7	FB601	I-12	R113	A-7	R717	I-8
C453	M-10	C751	B-8	FB701	G-11	R356	D-3	R718	N-9
C454	M-9	C753	B-8	IC101	B-5	R359	C-3	R719	K-7
C455	M-9	C754	F-4	IC352	C-3	R362	C-4	R720	M-8
C456	M-2	C756	C-6	IC501	F-6	R456	M-10	R721	N-8
C502	H-4	C904	L-6	IC701	H-8	R458	N-10	R722	M-7
C504	E-5	C906	L-5	IC702	F-9	R459	N-9	R724	L-10
C505	F-6	D51	M-3	IC751	G-4	R460	M-2	R726	L-9
C507	E-6	D52	I-3	K	I-7	R468	L-8	R728	M-7
C508	F-5	D101	A-6	L452	E-3	R501	G-5	R751	B-9
C509	K-9	D103	B-5	L601	G-7	R502	G-5	R755	H-4
C510	H-5	D104	A-6	L701	C-13	R504	F-5	R905	I-3
C511	G-5	D451	M-10	M	E-11	R510	H-5	R907	L-5
C512	G-6	D452	N-10	P	A-14	R511	K-9	RMC101	A-5
C513	I-5	D453	N-7	P101	N-3	R512	G-5	RY701	A-12
C514	G-4	D454	M-9	P201	J-1	R513	L-6	S	C-1
C515	L-2	D455	M-2	P301	I-1	R516	L-6	S101	A-10
C603	D-8	D501	F-5	P401	L-1	R517	L-6	S102	A-9
C604	C-6	D502	K-8	P402	M-1	R518	I-5	S103	A-8
C607	I-9	D503	C-5	P702	N-9	R521	L-7	S104	A-2
C608	I-10	D701	F-12	P902	M-6	R522	L-2	S105	A-1
C612	F-7	D702	F-14	P2001	G-1	R523	L-2	S501	N-8
C614	G-7	D703	F-12	P2002	F-1	R602	D-8	T601	D-7
C701	D-13	D704	F-14	PR701	D-12	R603	C-7	T602	L-12
C702	E-12	D705	G-13	Q104	L-8	R604	H-12	T701	C-10
C703	E-13	D706	G-11	Q354	B-3	R605	G-7	T702	K-7
C704	F-13	D707	G-10	Q451	E-4	R606	D-4	TU101	K-3
C705	E-14	D709	H-8	Q452	M-2	R609	C-8		

SIGNAL BOARD - BOTTOM VIEW



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SIGNAL BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C201	G-6	C2004	E-13	R303	C-7	R802	D-5	R2021	E-12
C204	F-5	C2005	E-13	R401	B-4	R803	F-8	R2022	E-11
C205	F-6	C2006	E-12	R402	A-4	R804	E-8	R2023	D-12
C206	F-6	C2011	E-10	R404	A-3	R805	E-8	R2024	D-9
C210	E-5	C2012	E-10	R406	A-3	R951	F-3	R2025	D-9
C212	E-7	C2013	E-10	R407	A-3	R952	E-3	R2026	E-13
C213	D-6	C2014	E-10	R408	A-2	R2002	G-10	R2028	D-12
C215	E-7	C2018	E-13	R409	B-3	R2003	G-10	R2030	D-9
C216	E-6	C2019	D-11	R410	C-5	R2005	F-11	R2031	D-9
C307	C-8	Q201	F-6	R411	C-4	R2006	F-11	R2037	F-11
C308	B-6	Q402	B-2	R422	B-5	R2007	F-10	R2038	F-12
C309	B-5	Q405	B-6	R423	C-5	R2008	F-10	R2040	G-12
C401	A-4	Q2001	E-13	R431	G-2	R2009	F-12	R2043	F-13
C402	A-3	R201	G-6	R441	C-5	R2010	F-11	R2044	G-12
C403	B-12	R202	F-6	R469	C-2	R2011	F-11	R2045	G-12
C411	C-5	R203	G-5	R470	B-5	R2012	G-13	R2047	F-11
C415	C-5	R204	F-6	R551	F-4	R2015	G-13	R2048	E-11
C416	E-4	R206	F-5	R552	F-4	R2016	E-10	R2049	E-11
C420	E-9	R209	F-7	R651	C-3	R2018	D-13	R2054	E-13
C803	E-5	R210	E-6	R653	D-3	R2019	D-13		
C2002	F-11	R301	C-8	R801	F-4	R2020	E-12		

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- Custom Components Corporation (Chek-A-Color)
- NTE Electronics, Inc. (NTE)
- Philips ECG Company (ECG)
- PTS Electronics Corporation (PTS)
- Sencore, Inc.
- Thomson Consumer Electronics, Inc. (SK, TCE)

PARTS LIST

SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D51	-	RH-EX0701GEZZ	-	-	-
D52	-	RH-EX0293CEZZ	-	-	-
D101	-	RH-PX0378CEZZ	-	-	-
D103	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D104 (1)	-	RH-PX0378CEZZ	-	-	-
D104 (2)	-	RH-PX0238CEZZ	-	-	-
D401	-	RH-EX0280CEZZ	NTE5065A	ECG5065A	SK3V0
D402	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D404	-	RH-EX0092CEZZ	NTE5006A	ECG5006A	SK3A6
D451	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D452, 53	-	RH-EX0217CEZZ	NTE5023A	ECG5023A	SK14A
D454	-	RH-EX0293CEZZ	-	-	-
D455	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D501	-	RH-DX0441CEZZ	-	-	-
# D502	EU-1	RH-DX0131CEZZ	NTE552	ECG552	SK9000
D503	-	RH-DX0441CEZZ	-	-	-
D651	-	RH-EX0312CEZZ	NTE5018A	ECG5018A	SK9A1
# D701 Thru					
# D704	1S1887A	RH-DX0154CEZZ	NTE552	ECG552	SK9000
# D705	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
# D706	-	RH-EX0238CEZZ	NTE5093A	ECG5093A	-
# D707	S6785G	VHSS6785GLB2E	NTE5424%	ECG5424%	-
# D709, 10	EU-1	RH-DX0131CEZZ	NTE552	ECG552	SK9000
# D711	-	RH-DX0444CEZZ	-	-	-
# D712	EU-1	RH-DX0131CEZZ	NTE552	ECG552	SK9000
D714	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D715	-	RH-EX0313CEZZ	NTE139A	ECG139A	-
# D720	-	RH-DX0224CEZZ	-	-	-
# D751	-	RH-DX0441CEZZ	-	-	-
D752	-	RH-EX0200CEZZ	NTE5021A	ECG5021A	SK12A
# D754, 55, 56	-	RH-DX0441CEZZ	-	-	-
D757	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D758	-	RH-DX0441CEZZ	-	-	-
D851, 53, 55	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D881, 82, 84	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
D2001, 02, 04	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
IC101	TA78L05S	VHITA78L05S-1	NTE977	ECG977	SK3462
# IC201	-	RH-IX2573CEZZ	-	-	-
IC352	TDA7233	VHITDA7233/-1	-	-	-
# IC501	TA8427K	RH-IX1224CEZZ	-	-	-
# IC701	T8150	RH-IX0758CEZZ	-	-	-
# IC702	T8889A	VHIT8889A/-1	-	-	-
# IC751	TA7809S	VHITA7809S/-1	NTE1966	ECG1966	-
# IC2001	-	RH-IX2552CEZZ	-	-	-
# IC2002	ST24C02CB1	RH-IX2448CEZZ	-	-	-
# IC2003	KIA7045P	VHIIKIA7045P-1	-	-	-
Q104	2SC945AQ	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q201	2SC2735	VS2SC2735/-1E	NTE2402	ECG2402	SK10095
Q354	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q401	2SA1015(Y)	VS2SA1015Y/-1E	NTE290A	ECG290A	SK9132
Q402, 05	2SC2462	VS2SC2462-C-1	NTE2408	ECG2408	SK10099
Q451	2SA1015(Y)	VS2SA1015Y/-1E	NTE290A	ECG290A	SK9132
Q452	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q501	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q601	2SC2655Y	VS2SC2655Y/-1	NTE293	ECG293	SK3849
# Q602	2SD1556	VS2SD1556/-1E	NTE2331	ECG2331	SK10088
Q606	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q751	2SC1983	VS2SC1983/-2	NTE56	ECG56	SK3929

For SAFETY use only equivalent replacement part.

% Use Insulating hardware supplied with replacement.

(1) Used in models 25G-M100, 25G-M120.

(2) Used in model 25G-M80.