

MODELS	56FW53H	59ESD7H	66FW53H	66FW54H
	66ESD7H	76FW53H	76FW54H	28HW53H
	66GF63H	66GF64H	76GF64H	

No Operation

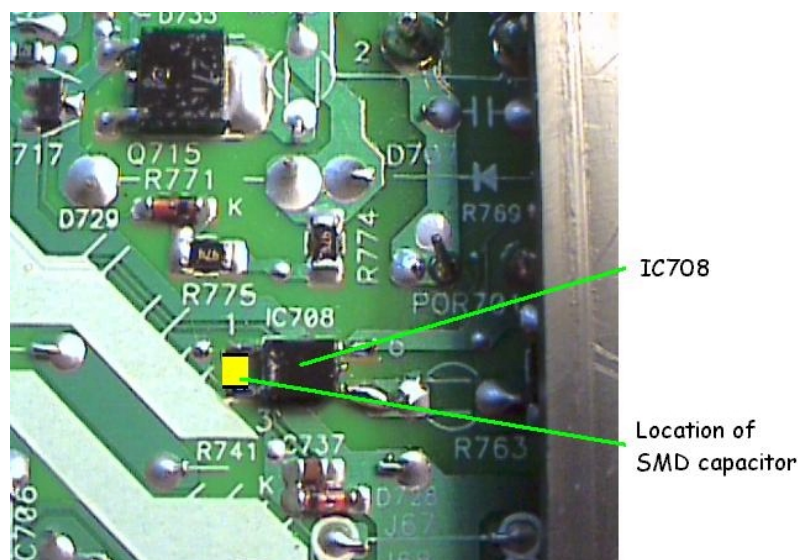
No operation can be caused by a number of components, the most common being around the primary control IC, IC702. If the supply on pin one of this IC falls below 5V, the operation of the power supply becomes unreliable (Note that you will have to connect your meter ground to the negative end of the smoothing block). As can be seen from the previous circuit description, the supply circuit is fairly complex, however only a few components cause problems. For low supply voltage to IC702 check R770 (270 Ω safety) and R771 (470k Ω). It has also been known for R721 and R703 (both 150k Ω) to fail causing a low 5V line.

IC707 (the secondary 5V regulator) can fail leading to a set that does not turn on, even though the power supply starts up. Normally its output goes low at around 3V.

No operation of the power supply or low HT (at about 30 to 40V) can be caused by R713 and R714 going high or breaking down under load. It is important that these two resistors are checked by substitution as they often read OK on a meter, even though they are faulty. Note that they should be metal film resistors and not carbon composition.

Erratic remote control operation

Erratic remote control operation has been traced to a number of components in the power supply. Normally the faults encountered are no remote control operation or intermittent control of the volume, either increasing dramatically or rising slowly with the OSD visible. D729 can cause these problems, but it is more common for noise to enter IC702 and spurious remote control commands to be outputted to the microprocessor. To prevent this happening fit a 470nF, 16V SMD capacitor across the input of the optical diac – pins 1 and 3 of IC708 (see picture below). The Sharp part number for this capacitor is VCKYTV1CF474Z. This capacitor was fitted during production of all GF and HW models.



Location of SMD Capacitor on IC708

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Reference JR29042003-3
Revision 2

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Yellow – Carry out as required and whenever the unit comes in for service
Red – Carry out on all units

Intermittent Q701 failure

Intermittent failure of the chopper transistor can be caused by dry joints in the snubber circuit (C710, R715 and D711) or poor connections on the main reservoir capacitor, C705.

Q701 has to be the correct type (S5F10N80A – Sharp part number RH-TX0198BMZZ), fitting the incorrect transistor can lead to a power supply that does not work, causes excessive RF interference or is unreliable. Note that this device has been replaced by an alternative which requires D712 and R717 to be changed - see Technical Bulletin CTV 2002 12 01 for more details.

Input Circuit Failure

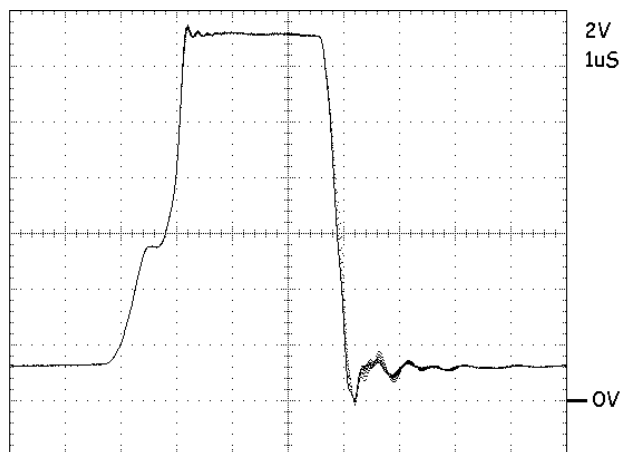
If there is a mains surge (or lightning strike) Q701 will invariably fail. D712, Q702, Q703 and R716 will also have suffered damage, as will the rectifier diodes (D701, D702, D703 and D704). It is advisable to change all of these components to prevent further failures, even if they are not faulty.

Low HT

IC706 can cause high or low HT. It is a programmable zener diode that provides a stabilised voltage to the opto coupler. The Sharp part number for this device is RH-IX1704BMZZ.

Erratic Operation

Erratic operation of the processor (locking out, no control, etc) can be caused by the 3.3V rising to 5V due to one of the components in the series regulator going faulty - Q710, Q711 or Q712. Check for 3.3V on the emitter of Q712.



Pin	Name	I/O	Comment	DC Voltage
1	VDD	I	Supply	5.2V
2	OSCIN	I	Oscillator	2.5V
3	OSCOU	O	Oscillator	2.5V
4	NMI	I	Remote input	5.0V
5	TEST	X	Grounded	0V
6	RESET	I	From reset	5.2V
7	PB7	I	From processor	5.2V
8	PB6	I	100Hz reference	0.48V
9	PB5	I/O	Key scan	5.2V
10	PB3	I/O	Key scan	0V
11	PB1	I/O	Key scan	0V
12	PB0	I/O	Key scan	0V
13	PA3	O	To processor	5.2V
14	PA2	O	Degauss	0V
15	PA1	O	Power control	0V
16	VSS	X	Ground	0V

Q701 Gate Waveform and IC702 Voltage Table

Note that the above waveform has been taken on the primary side of the power supply. It is therefore essential that an isolation transformer be used in conjunction with the set. This will ensure safe connection to the primary side reference. This waveform will also change in pulse width depending upon the load demanded from the power supply. The greater the load the longer the on time. The FET will switch on at about 4.5V, this is indicated as a short levelling off period on the upward ramp.

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<u>REF NO</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>PRICE CODE</u>
D701/2/3/4	Diode, RF2005	RH-DX0555BMZZ	AB
D729	Zener Diode, TZMC47	RH-EX0568BMZZ	AA
IC702	IC, ST6203B	RH-IX1646BMZZ	AL
IC703/4/5	IC, MOC8106SR2V-M	RH-IX0106BMZZ	AD
IC706	IC, KA431AZ	RH-IX1674BMZZ	AD
IC707	ICL4978	RH-IX1704BMZZ	AK
Q701	Transistor, S5F10N80A	RH-TX0198BMZZ	AU
Q702	Transistor, 2PD602AR	RH-TX0182BMZZ	AB
Q703	Transistor, 2SD2391Q	RH-TX0151BMZZ	AD
Q710	Transistor, 2SC2412	VS2SC2412KQ-1	AA
Q711	Transistor BC547	RH-TX0106BMZZ	AB
Q711	Transistor, BC547	TH-TX0106BMZZ	AB
Q712	Transistor, 2SC2412	VS2SC2412KQ-1	AA
R703	Resistor, 150k Ω ½W SMD	VRD-RA2HD154J	AA
R713	Resistor, 560k Ω ½W metal film	VRC-MA2HG564J	AA
R714	Resistor, 560k Ω ½W metal film	VRC-MA2HG564J	AA
R716	Depends on model - refer to service manual parts listing		
R721	Resistor, 150k Ω ½W SMD	VRD-RA2HD154J	AA
R770	Resistor, 270 Ω ½W fusible	RR-XZ0229BMZZ	AA
R771	Resistor, 470k Ω 1W metal oxide	VRS-VV3AB474J	AA

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