PS-7103
Power Supply

VM-7103-06

ROSS

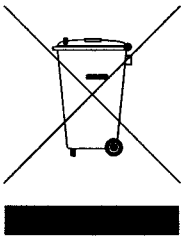
Cool Practical Technology™

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

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VIDEO DISTRIBUTION PRODUCTS
WARRANTY and REPAIR POLICY

1. Ross Video Limited (the Company) warrants its products to be free from defects in workmanship and material under normal use and service for a period of **FIVE** years from the date of shipment. If, within the warranty period, the customer notifies the Company that a product is defective, the Company will correct the defect, either by repairing the defective product or by shipping a replacement product to the customer, as determined by the Company.

2. Liabilities under this warranty is limited to the repair or replacement of the product as determined by the company and is in lieu of all other warranties expressed or implied.

3. This warranty does not extend to any product which has been subjected to misuse, neglect, accident, improper installation or application, nor does it extend to products which have been repaired or altered outside the factory by personnel other than those of the Company, unless expressly authorised in writing by the Company.

4. Warranty repairs will be made at the Company's plant unless otherwise specified in writing by the Company. All packing, shipping, and special handling costs will be paid for by the customer.

5. Non-warranty repair service made at the factory will be at customer expense. Cost of repairs will be quoted following examination of the product by Company personnel.

6. In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits).

Introduction

The PS-7103 power supply is designed to provide power to modules in the Ross VFR-7210 Video DA mounting frame and AVFR-7855 Audio Video frame. It operates equally well on any of the world's power mains voltages. When two supplies are operated in a frame, they provide redundancy protection against supply or power source failure. In addition, reliability is increased as each supply will provide half of the frame load current and will run cooler. The power switch and fuse are conveniently accessible from the front of the supply. A lens on the frame door is illuminated by a green LED on the supply during normal operation.

NOTE:

This power supply must be serviced only at the factory because of the hazardous high voltages and currents that are present internally, as well as the possibility of disturbing special precautions needed to minimize electromagnetic radiation. An extender board or other test means is not available.

Circuit Description

Filtering of common-mode noise is provided by L1 (L7 - Issue 5 only), and CN1. The input voltage is rectified and filtered by BR1 and C2.

U2 is a switch-mode controller. It provides the functions of an oscillator, driver for the switching power transistor Q1, over-current limiter and voltage control. Zener diodes CR3, CR4, CR7 and CR8 protect Q1 against damage from high-voltage spikes.

Transformer T1 secondary voltage is rectified and filtered by CR2, C10 and C16 to provide the DC supply voltage for U2. The positive secondary voltage is rectified and filtered by D1, C5, C13, L3, C14 and C15. The negative output voltage is obtained from similar circuit D2, etc.

Control circuit U1 regulates the output voltage. It contains an internal precision voltage reference and error amplifier. Any error in output voltage is fed to opto-isolator U3 which then corrects the width of the switching pulse generated by control circuit U2.

Adjustment

The only adjustment is RV1 which is set in the factory for exactly +13.5 volts, as measured on the frame mother board at the power supply edge connector. It has been factory-adjusted and sealed, using a full 1.7A load in a special test jig. It is absolutely essential that RV1 be set precisely under these conditions or correct load sharing will not occur when the frame has two supplies.

Specifications

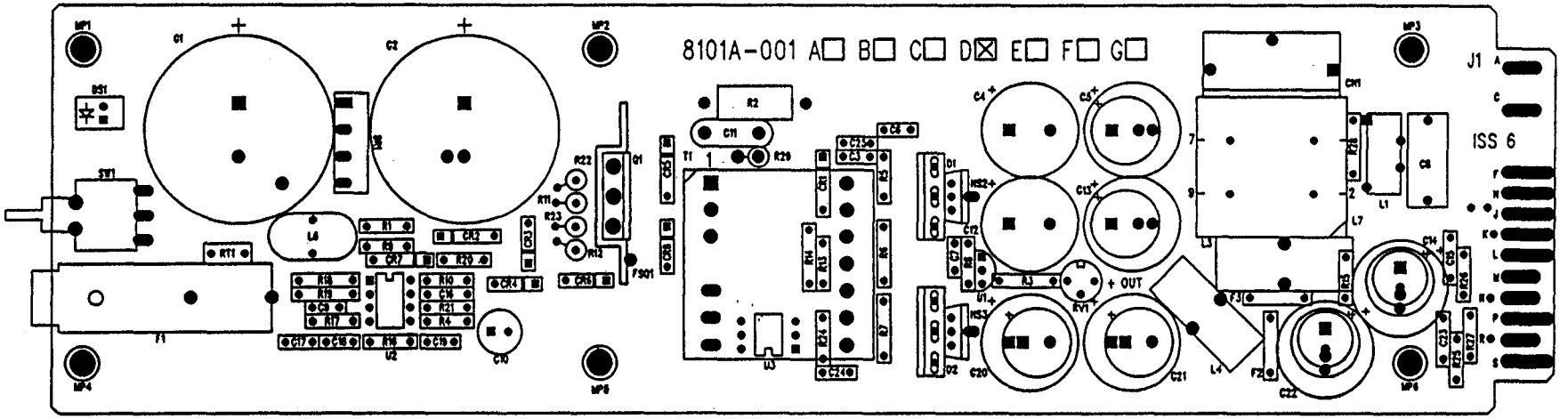
Input	Voltage	85-250 Volts, 50/60 Hz
	Power	55 VA max
Output	Voltage	±13.5 V
	Current	1.7A
	Power	46 W
	Line Regulation	350 mV change over full input range
	Ripple	< 60 mV pp

PS 7103
Bill Of Materials

8101A-001D Issue: 6

Item	QTY	REF	Part	Description	Part Number
1	1	J1	CON\30P\156\E	NOT A BOUGHT PART	-----
2	1	R28	NVR 1%	NO VALUE,RES,1%	-----
3	1	R22	NVR R1/2W UP	NO VALUE,RES,VERTICAL,MNT	-----
4	1	SCKTDS1	125-001	HOLDER,LED,5MM,90DEG	125-001
5	1	C17	n33	CAP,CER,100V,2%,n33	202-330
6	1	C6	n56	CAP,CER,100V,2%,n56	202-560
7	1	C9	n68	CAP,CER,n68	202-680
8	1	C7	1n	CAP,CER,1n	203-100
9	1	C19	10n	CAP,CER,10n	204-100
10	1	C3	1u 206-100	CAP,CER,50V,20%,1u0	206-100
11	1	C11	10n 210-004	CAP,FILM,400V,10%,10n	210-004
12	1	C18	10n 210-009	CAP,FILM,100V,10%,10n	210-009
13	1	CN1	210-013	CAP,NTWRK,50V,20%,u1,4n7	210-013
14	1	C8	100n 210-015	CAP,POLY,250V,100n	210-015
15	3	C15,C16,C23	100n	CAP,GLAS,100n	225-100
16	1	C10	22u 240-006	CAP,ELEC,22u	240-006
17	1	C2	180u 240-017	CAP,ELEC,400V,180u	240-017
18	6	C5,C13,C14,C20,C21,C22	60u 240-018	CAP,ELEC,35V,560u	240-018
19	1	CORD	330-002	AC,LINE/CORD	330-002
20	3	CR1,CR2,CR5	MUR180E	RECTIFIER,SWITCHMODE,POWER	360-028
21	1	BR1	RS406L	RECTIFIER,BRIDGE,4A,800V	360-029
22	1	CR7	1N4746C	DIODE,ZENER	360-030
23	2	D1,D2	MUR1620CT	RECTIFIER,ULTRA FAST RECOVERY	360-031
24	4	CR3,CR4,CR6,CR8	1N5951B	DIODE,ZENER,120V,1.5W THL	360-036
25	1	DS1	361-023	LED,5mm,GRN,S.B	361-023
26	1	SHLDMP7	365-001	EJECTOR,PCB	365-001
27	1	F1	2A 390-005	FUSE,2.0A,250V,SLOBLO	390-005
28	2	F3,F2	2A 390-016	FUSE,2A,125V,FAST ACTING,SUBMIN THL	390-016
29	1	F1 CAP	391-004	FUSE,CAP	391-004
30	1	F1 HLDR	391-006	FUSE,HOLDER,HORIZONTAL, PCB MNT	391-006
31	2	D1HEATSINK,D2HEATSINK	405-009	HEATSINK,TO-220,PCB MNT, U-SHAPE	405-009
32	1	Q1HEATSINK	405-010	HEATSINK,TO-247,SCREW MNT, HAT-SHAPE	405-010
33	1	L6	440-022	IND,TOROID,CTP3659V	440-022
34	2	L4,L3	47u 440-030	IND,47uH,TOROID,CTP4407115	440-030
35	1	L7	8u2 440-032	IND,8.2uH,TOROID,CEP4736-18	440-032
36	1	U3	MOC8101TV	ISOLATOR,OPTO,(MOC8102TV) THL	504-150
37	1	U1	TL431CLP	REGULATOR,ADJUSTABLE PREC, SHUNT THL	504-151
38	1	U2	MIC38HC42BN MODE SWI THL	REGULATOR,BICMOS,CURRENT	504-152
39	1	Q1NUT	650-012	NUT,HEX	650-012
40	1	LABEL	7103-084-01	PS7103 COVER LABEL	7103-084-01
41	1	RV1	200R 1T	TRIMPOT,1/4 DIA,1T,200R	710-003
42	1	PCB	8101-001-06	8101 POWER SUPPLY ---------- PCB	8101-001-06
43	1	COVER	8110-114-04	POWER SUPPLY COVER	8110-114-04
44	1	SHIELD	8110-115-03	POWER SUPPLY ---------- SHLD	8110-115-03
45	1	R3	2K37 1%	RES,1/4W,1%,2K37	813-237
46	1	R18	2K49 1%	RES,1/4W,1%,2K49	813-249
47	1	R19	3K32 1%	RES,1/4W,1%,3K32	813-332
48	1	R14	3K92 1%	RES,1/4W,1%,3K92	813-392
49	1	R6	11K5 1%	RES,1/4W,1%,11K5	814-115
50	1	R7	84K5 1%	RES,1/4W,1%,84K5	814-845
51	2	R26,R27	1R	RES,1/2W,5%,1R	824-100
52	2	R21,R10	10R	RES,1/2W,5%,10R	825-100

53	1	R5	33R	RES,1/2W,5%,33R	825-330
54	1	R13	390R	RES,1/2W,5%,390R	826-390
55	2	R15,R25	820R	RES,1/2W,5%,820R	826-820
56	1	R20	1K	RES,1/2W,5%,1K	827-100
57	2	R8,R16	1K5	RES,1/2W,5%,1K5	827-150
58	1	R4	10K	RES,1/2W,5%,10K	828-100
59	2	R1,R9	120K	RES,1/2W,5%,120K	829-120
60	4	R11,R12,R23,R29	1R 840-061 UP	RES,2W,5%,500V,1R,VERT MNT	840-061
61	1	R2	30K 840-062	RES,3W,5%,30K	840-062
62	1	RT1	10R 841-003	THERMISTOR,NTC,10R, SURGE,CURRENT LIM	841-003
63	1	Q1SCREW	850-005	SCREW,4-40,3/8,BIND	850-005
64	6	MP1,MP2,MP3,MP4,	850-026	SCREW,4-40,5/16,BIND MP5,MP6	850-026
65	4	WSHR11,WSHR12,WSHR23, WSHR29	870-032	SPACER,WASH-AWAY,ON-END, R1/2W,0.100	870-032
66	1	SW1	906-021	SWITCH,90DEG,3P,SPST	906-021
67	1	T1	940-019	TRANSFORMER ---------- S940-019	940-019
68	1	L1	940-020	IND,COMMON MODE,CTP3658V	940-020
69	1	Q1	MTW8N60E	MOSFET,8A,600V,0.5R	950-044
70	1	HSTUBING RT1	955-005	TUBE,HEAT SHRINK,BLK, 3/8DIA.,CSA/UL	955-005
71	1	HSTUBING L1	955-009	TUBE,HEAT SHRINK,BLK, 1/2DIA.,CSA/UL	955-009
72	1	Q1WASHER	960-015	WASHER,SPRING,4-40	960-015



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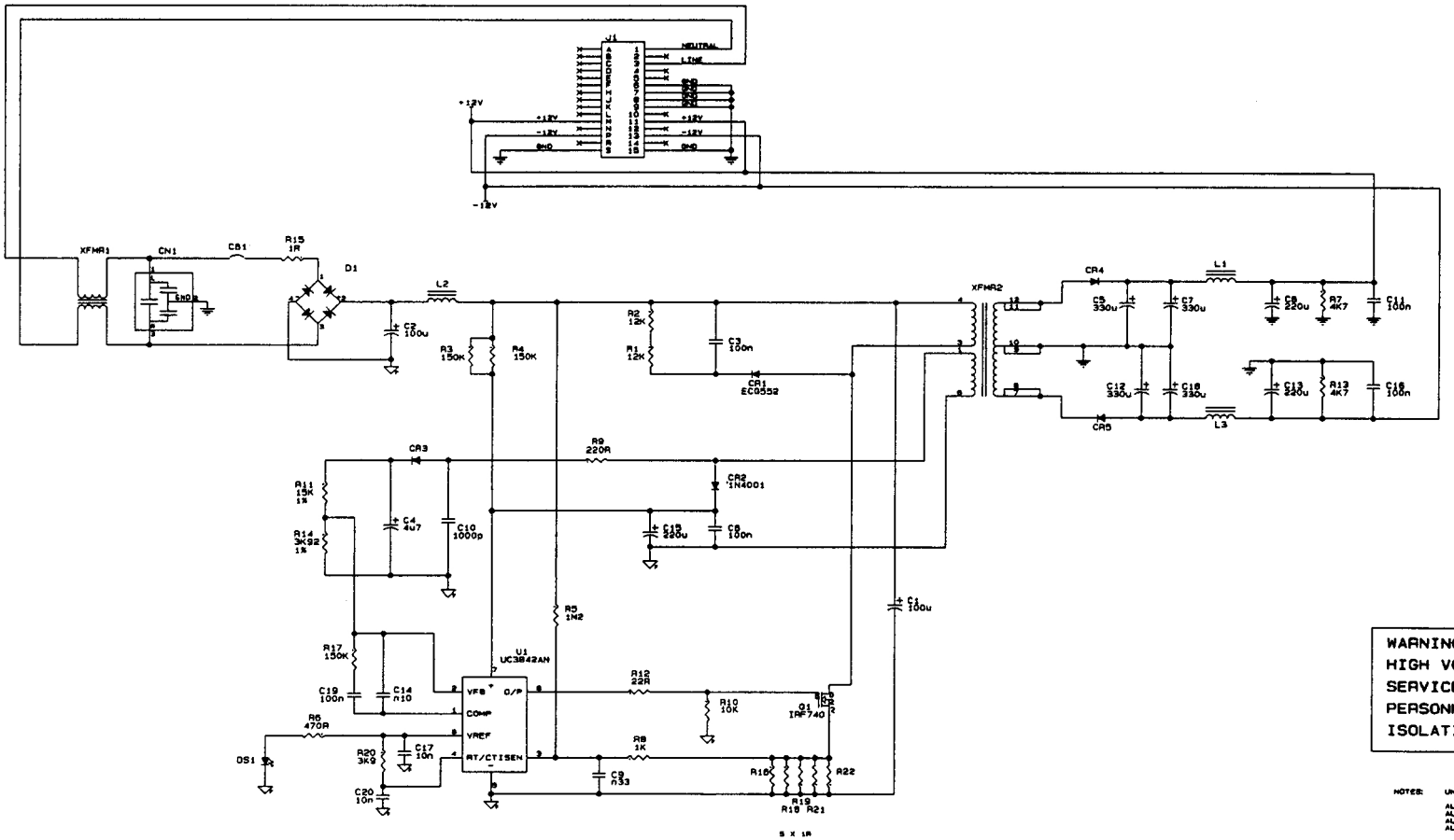
REVISION RECORD

ISS	REV	DCO	APP	DATE
5A	MVB	3-030		
5B	DMR	93-063		27 NOV 93
5C	DMR	94-021		18 JULY 94



WARNING:
HIGH VOLTAGES PRESENT
SERVICE BY QUALIFIED
PERSONNEL ONLY USING
ISOLATION TRANSFORMER

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE TYPE 1/8W 5%
ALL DIODES ARE TYPE 1N4148
ALL CAPACITORS ARE IN FARADS
ALL INDUCTORS ARE IN HENRYS

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TITLE: POWER SUPPLY	NUMBER: A7101-001		ISSUE: 05C	SHEET: 1 OF 1