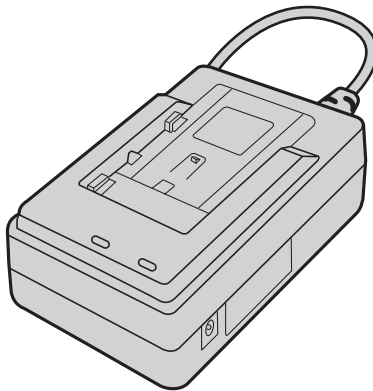


JVC

SERVICE MANUAL

AC POWER ADAPTER/CHARGER

AA-V40EG/EK



SPECIFICATIONS

Power	AC 110 V — 240 V, 50 Hz/60 Hz
Power consumption	23 W
Output	DC 7.2 V --- , 1.2 A (When charging) DC 6.3 V --- , 1.8 A (When supplying power)
Operating temperature	0°C — 40°C
Charging temperature	10°C — 35°C
Dimensions	68 (W) x 38 (H) x 110 (D) mm
Weight	AA-V40EG : Approx. 260 g AA-V40EK : Approx. 340 g

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the \triangle symbol and shaded (■) parts are critical for safety.
Replace only with specified part numbers.
Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation Tape 3) Spacers 5) Barrier
2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

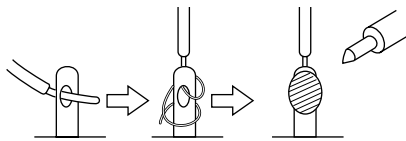


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

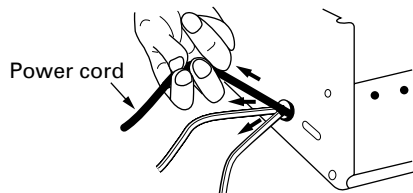


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector

In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

1) **Connector part number** : E03830-001

2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.

3) **Replacement procedure**

(1) Remove the old connector by cutting the wires at a point close to the connector.

Important : Do not reuse a connector (discard it).

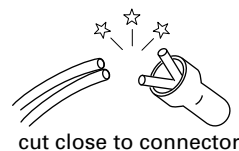


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

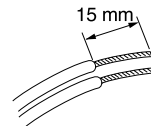


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

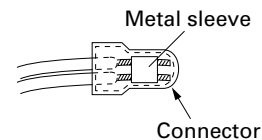


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

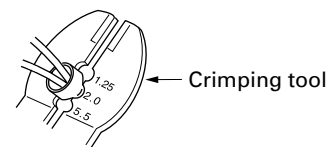


Fig.6

(5) Check the four points noted in Fig.7.

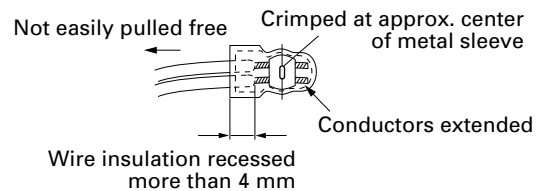


Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

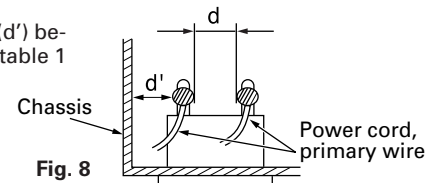


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

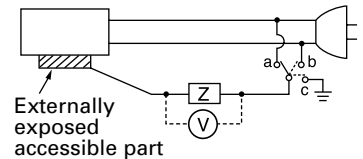


Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

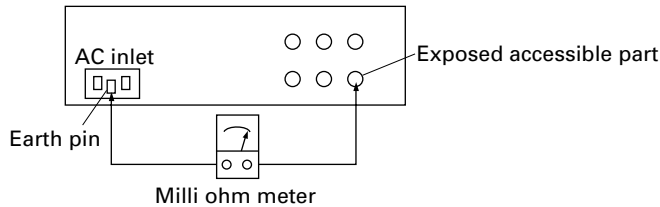


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	$1 \text{ M}\Omega \leq R \leq 12 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II)	$d \geq 4 \text{ mm}$
200 to 240 V			AC 1.5 kV 1 minute (Class I)	$d' \geq 8 \text{ mm}$ (Power cord) $d' \geq 6 \text{ mm}$ (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
		50 kΩ	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Table 2 Leakage current specifications for each region

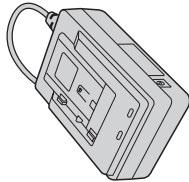
Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

JVC

AC POWER ADAPTER/CHARGER

NETZ-LADGERÄT
 AC-ADAPTER/BATTERILADDER
 АДАПТА ТЕУР СЕКЦУР/ЧАРЖЕУР ДЕ БАТТЕРИЕ
 NETADAPTER/ACCULADER
 АДАПТАДОИ/САРГАДОУР ДЕ СА
 ALIMENTATORE C/CA/CA/IC/BATTERIE
 LYSNETA DØPTE/PLADER
 VERKKOLAITTE/AKKUN LATAAJA

AA-V40EG/EK

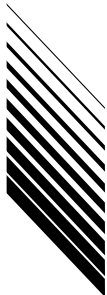


INSTRUCTIONS
 BEDIENUNGSANLEITUNG
 MANUEL D'INSTRUCTIONS
 GEBRUIKSAANWIJZING
 MANUAL DE INSTRUCCIONES
 MANUALE DI ISTRUZIONI
 INSTRUKTIONSBOG
 KÄYTTÖOHJEET



BRUKSANVISNING
 BRUKSANVISNING
 ИНСТРУКЦІЯ
 MĀVOD K OBRĀZĪZE
 INSTRUKCIJA OBSLUGE
 HASZNÁLATI ÚTMUTATÓ

LYT0619-001A



ENGLISH
 DEUTSCH
 FRANÇAIS
 NEDERLANDS
 CASTELLANO
 ITALIANO
 DANSK
 SUOMI
 SVENSKA
 NORSK
 РУССКИЙ
 ČEŠTINA
 POLSKI
 MAGYAR

Thank you for purchasing the JVC AC Power Adapter/Charger. This unit provides DC power for the JVC Digital Video Camera from a household AC outlet. It can be used to recharge the JVC battery pack for exclusive use with the JVC Digital Video Camera, and is capable of charging two battery packs consecutively. To avoid problems and obtain the best results, please read this instruction booklet carefully before use. Before using as a power adapter, make sure that this unit's model number is the same as that of the power supply unit specified in the instruction manual of the equipment you wish to power.

**WARNING—
 DANGEROUS
 VOLTAGE INSIDE**

CAUTION:
 When you are not using this unit for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

**WARNING:
 TO PREVENT FIRE OR
 SHOCK HAZARD, DO
 NOT EXPOSE THIS
 UNIT TO RAIN OR
 MOISTURE.**

This unit should be used with AC 110 V ~ 240 V~, 50 Hz/60 Hz only.

CAUTION:
 To prevent electric shocks and fire hazards, do NOT use any other power source.

When the equipment is installed in a cabinet or on a shelf, make sure that it has sufficient space on all sides to allow for ventilation (10 cm or more on both sides, on top and at the rear).

Do not block the ventilation holes. (If the ventilation holes are blocked by a newspaper, or cloth etc. the heat may not be able to get out.)

No naked flame sources, such as lighted candles, should be placed on the apparatus. When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

The apparatus shall not be exposed to dripping or splashing.

Do not use this equipment in a bathroom or places with water. Also do not place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups etc.) on top of this unit. (If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)

CAUTIONS:

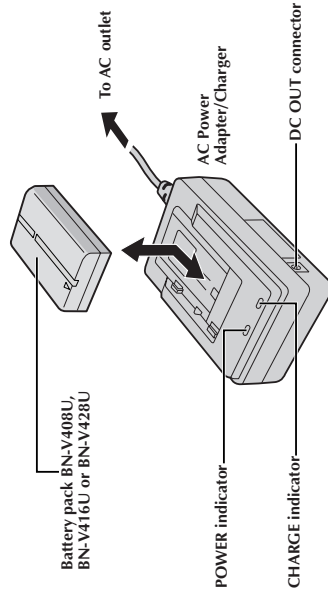
- If used near a radio, this unit may interfere with reception.
- Prevent inflammables, water and metallic objects from entering the unit.
- Do not disassemble or modify the unit.
- Do not apply shocks to the unit.
- Do not subject the unit to direct sunlight.
- Avoid using the unit in extremely hot or humid places.
- Avoid using the unit in places subject to vibrations.

A WORD ON THE EXCLUSIVE BATTERY PACKS

The battery packs are lithium-ion. Give attention to the following to make the most of their characteristics.
 For charging: 10°C to 35°C
 For operating: 0°C to 40°C
 For storing: -10°C to 30°C

This AC Power Adapter/Charger is for use exclusively with JVC Digital Camcorders.

CHARGING THE BATTERY PACK



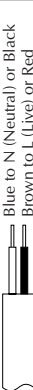
IMPORTANT

Connection to the mains supply in the United Kingdom. **DO NOT cut off the mains plug from this equipment.** If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

BE SURE to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover.

If nonetheless the mains plug is cut off ensure to remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not supplied fitted with a mains plug then follow the instructions given below: **DO NOT** make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with the following code:



If these colours do not correspond with the terminal identifications of your plug, connect as follows: Blue wire to terminal coded N (Neutral) or coloured black. Brown wire to terminal coded L (Live) or coloured Red. **If in doubt — consult a competent electrician.**

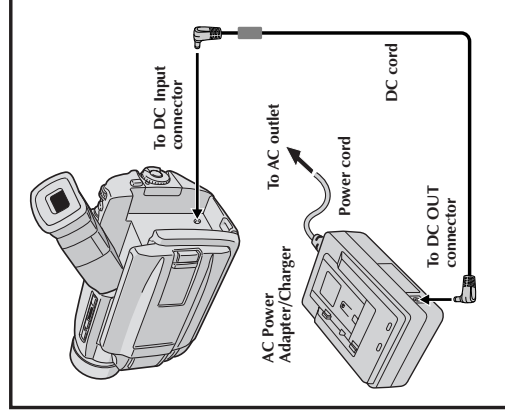
EN-2

EN-4

EN-3

SUPPLYING POWER

You can connect the camcorder to an AC outlet using the AC Power Adapter/Charger (if the camcorder is supplied with a DC cord).



1 Plug the AC Adapter/Charger's power cord into an AC outlet.

2 Connect the AC Adapter to the camcorder.

NOTES:

- Be sure to use the DC cord provided with your camcorder.
- When using the provided DC cord, make sure you connect the end of the cable with the core filter to the camcorder. The core filter improves performance of equipment.

NOTE: Perform charging where the temperature is between 10°C and 35°C. 20°C to 25°C is the ideal temperature range for charging. If the environment is too cold, charging may be incomplete.

Battery pack	Fully charging time
BN-V408U	approx. 1 hr. 30 min.*
BN-V416U (optional)	approx. 2 hrs.*
BN-V428U (optional)	approx. 3 hrs. 20 min.*

* When charged at temperatures between 20°C and 25°C.

- When charging Battery Packs after a long storage period, charging time will be longer than the time indicated above.

1 Plug the AC Adapter/Charger's power cord into an AC outlet. The POWER indicator lights.

2 Remove the battery pack's protective cap. Attach the battery pack with the ⊕ ⊖ mark aligned with the corresponding marks on the AC Power Adapter/Charger. The CHARGE Indicator begins blinking to indicate charging has started.

3 When the CHARGE indicator stops blinking but stays lit, charging is finished. Slide the battery and lift off. Remember to unplug the AC Adapter/Charger's power cord from the AC outlet.

DURING USE . . .

- The AC Power Adapter/Charger is specifically designed to charge BN-V408U, BN-V416U and/ or BN-V428U Battery Packs.
- When charging a brand new Battery Pack, or one that's been in storage for an extended period, the Charging Indicator may not come on. In this case, remove the Battery Pack, then reattach and try charging again.
- If you connect the DC Cord to the DC Connector while a Battery Pack is being charged, power will be supplied to the camcorder and charging will end incompletely.
- Vibration noise can sometimes be heard coming from the inside of the AC Power Adapter/Charger. This is normal.
- The AC Power Adapter/Charger processes electricity internally, and will become warm during use. This is normal. Make sure to use the AC Power Adapter/Charger in well-ventilated areas only.
- If the battery operation time remains extremely short even after having been fully charged, the battery is worn out and needs to be replaced. Please purchase a new one.

SPECIFICATIONS

Power	AC 110 V — 240 V, 50 Hz/60 Hz
Power consumption	23 W
Output	DC 7.2 V $\overline{\text{---}}$, 1.2 A (When charging) DC 6.3 V $\overline{\text{---}}$, 1.8 A (When supplying power)
Operating temperature	0°C — 40°C
Charging temperature	10°C — 35°C
Dimensions	68 (W) x 38 (H) x 110 (D) mm
Weight	AA-V40EG : Approx. 260 g AA-V40EK : Approx. 340 g

AA-V40EG/EK

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EN-5

EN-6

EN-7

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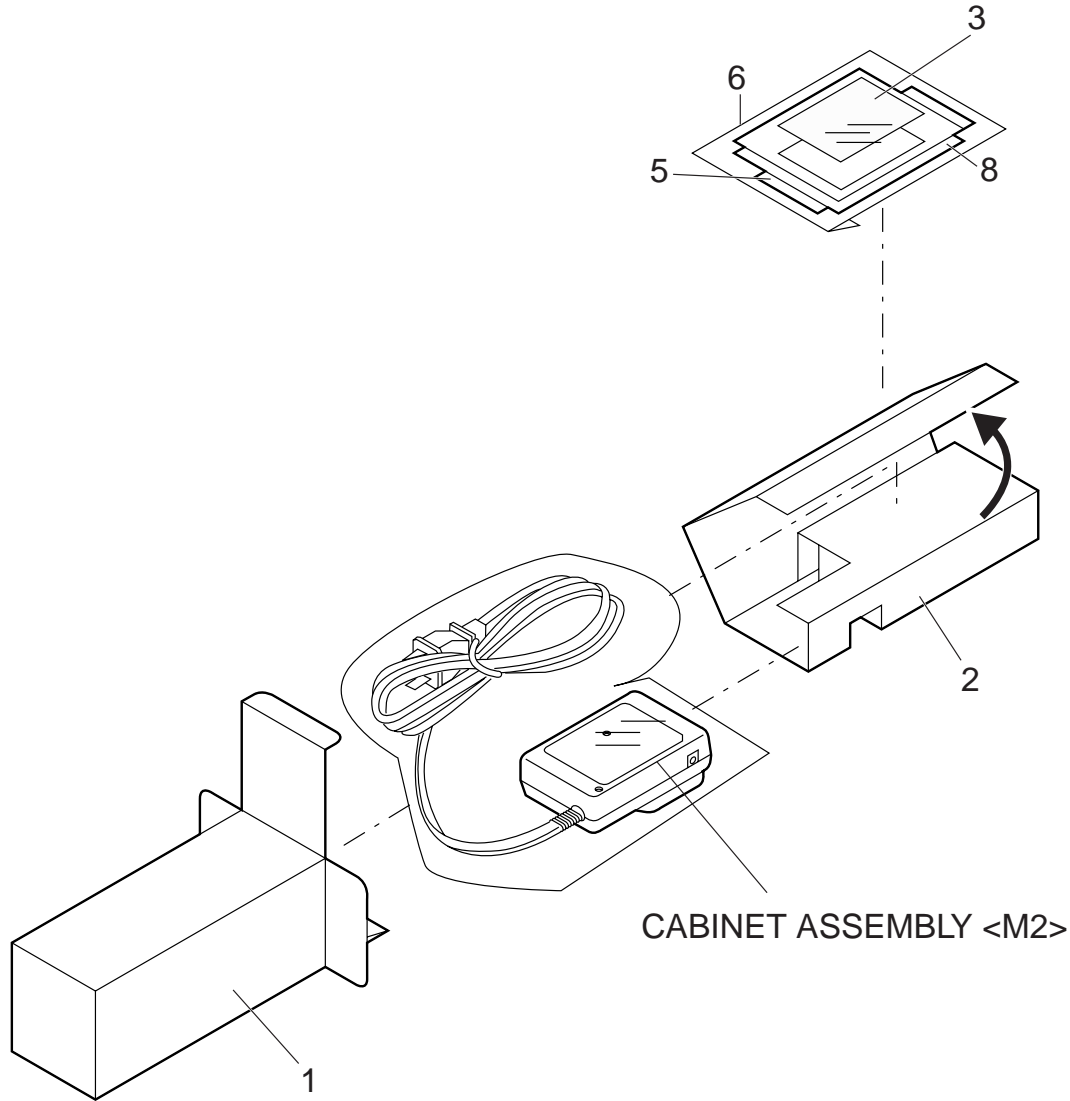
EG/EK Printed in Japan
1200AYV*UN*RSW

SAFETY PRECAUTION

Parts identified by the \triangle symbol are critical for safety. Replace only with specified part numbers.

1. PACKING ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.

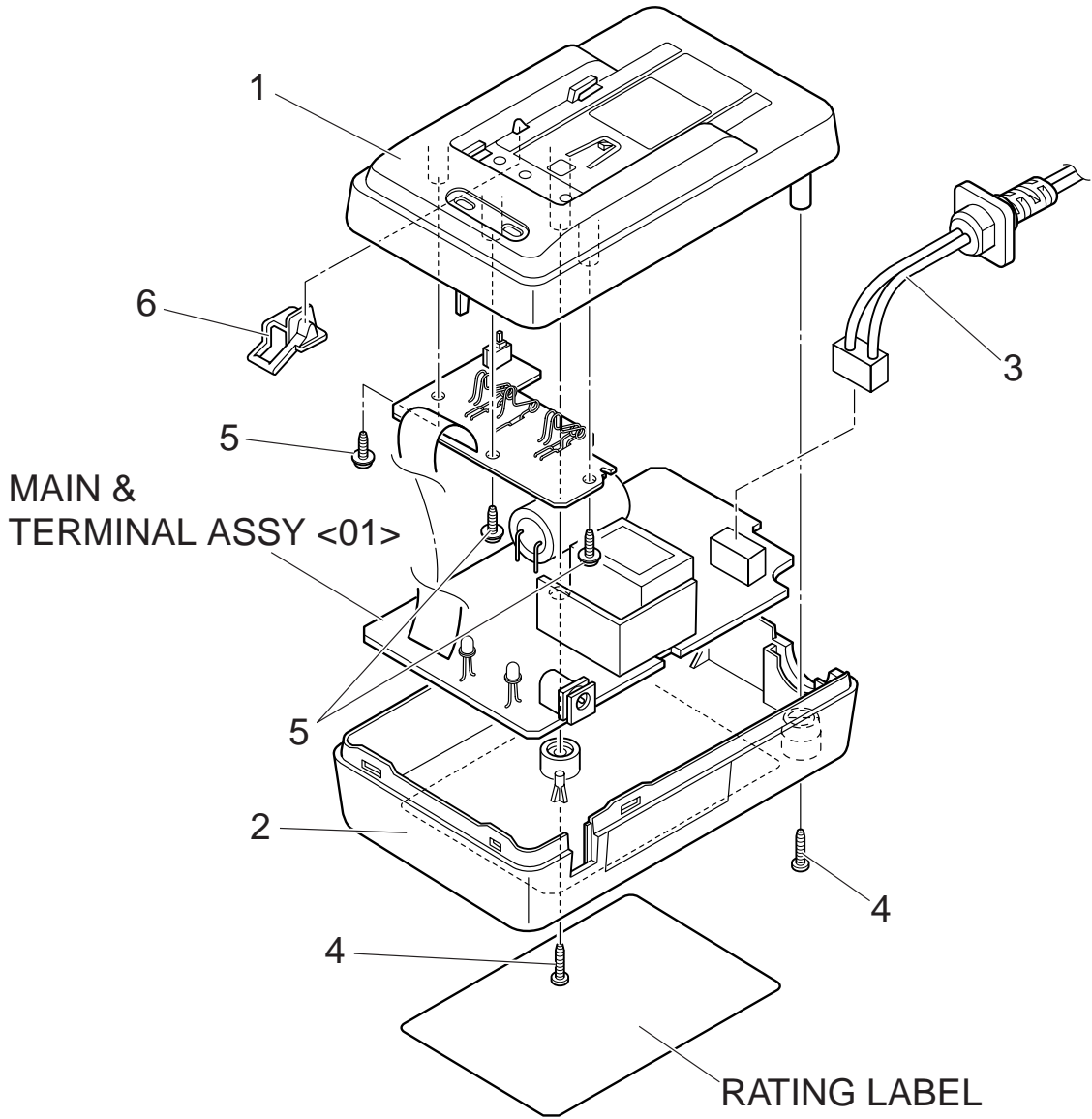


#	\triangle REF No.	PART No.	PART NAME, DESCRIPTION

PACKING ASSEMBLY <M1>			
1		LY31574-001A	PACKING CASE
2		LY31383-001A	CUHION SHEET
3		BT-54008-2	GUARANTY.CARD
\triangle 5		YU30364	SAFETY SHEET, For EK

#	\triangle REF No.	PART No.	PART NAME, DESCRIPTION
6		QPA01702505P	POLY BAG
\triangle 8		LYT0619-001A	INST. BOOK

2. CABINET ASSEMBLY <M2>



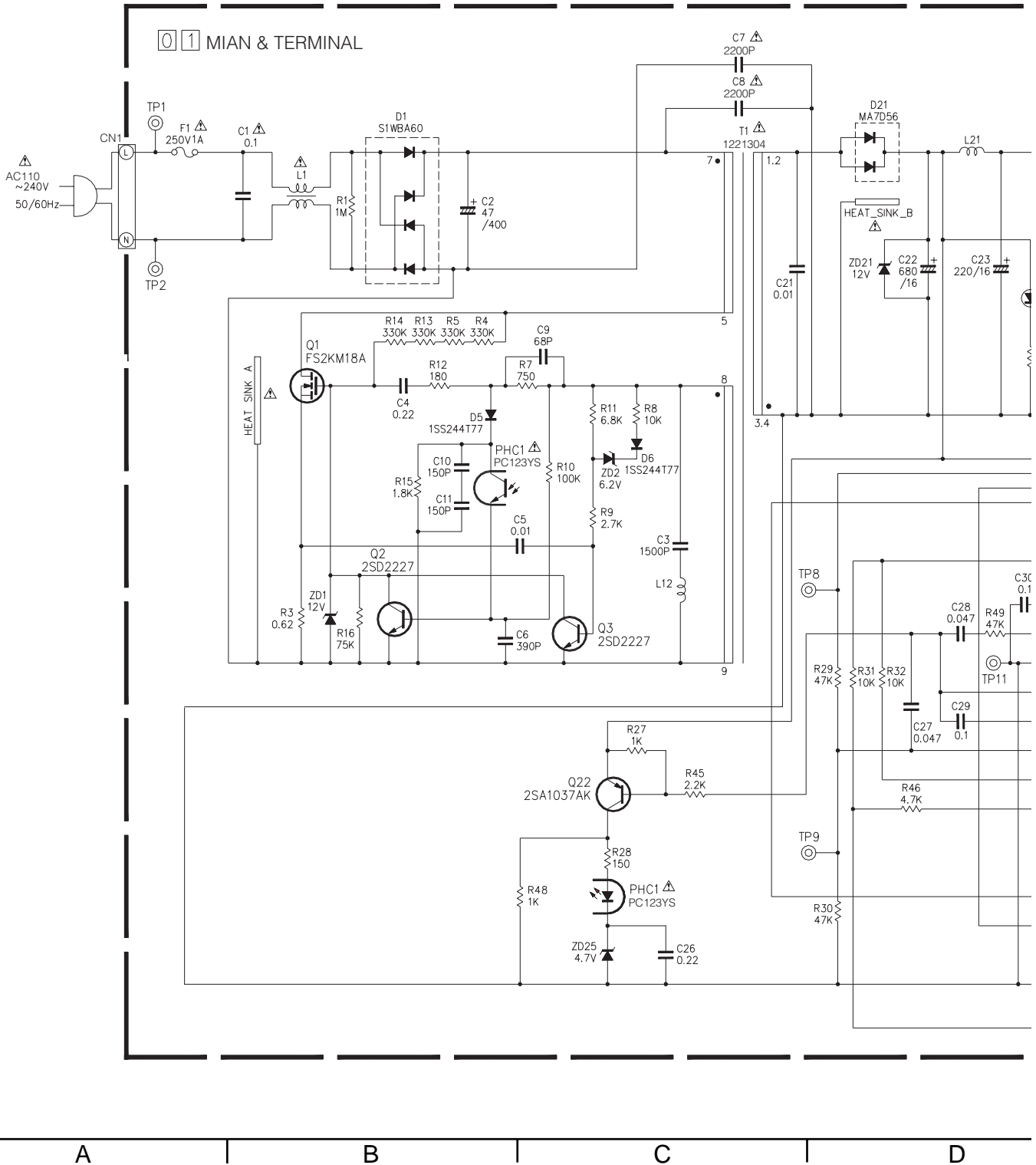
#△ REF No. PART No. PART NAME, DESCRIPTION


CABINET ASSEMBLY <M2>

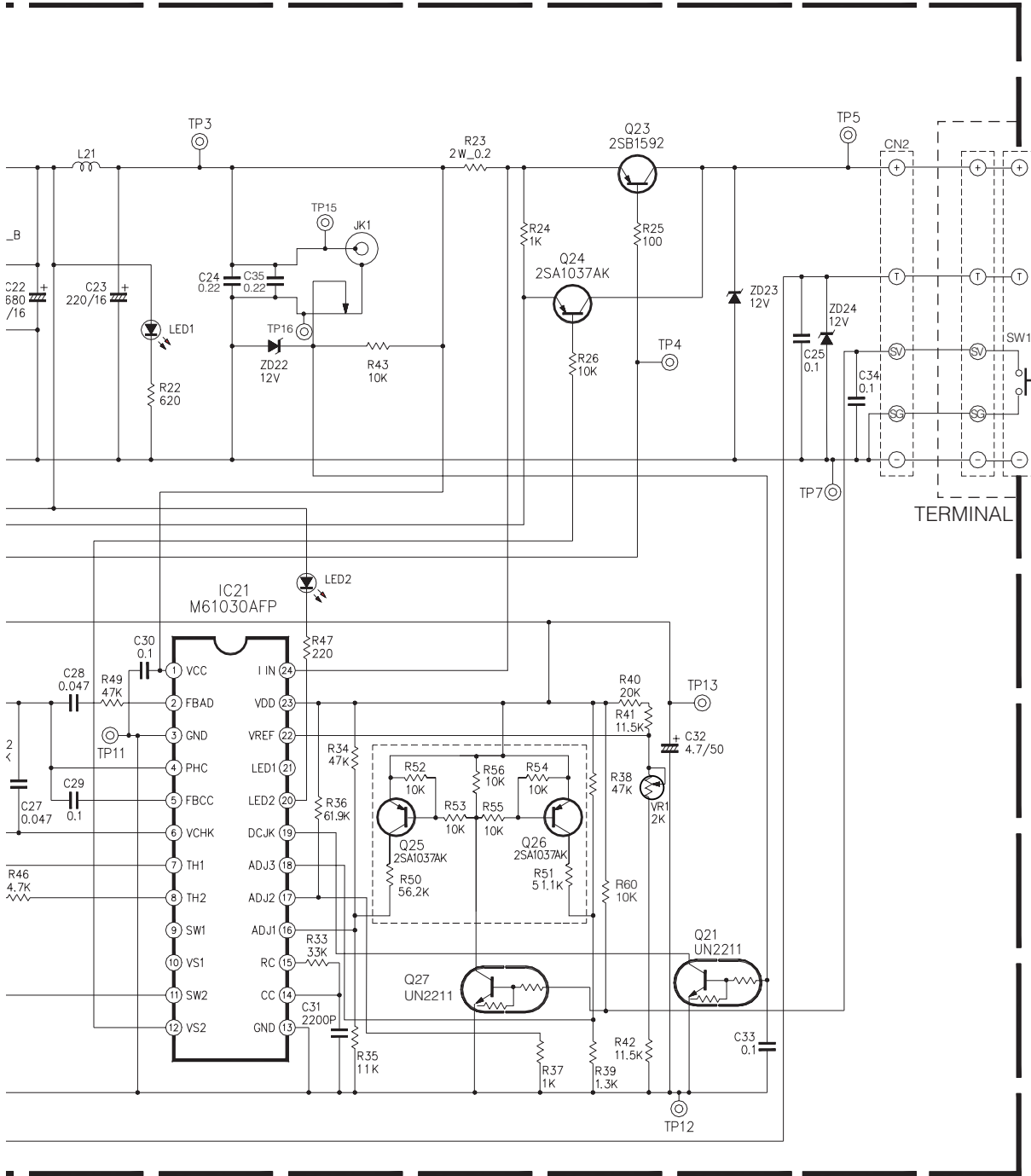
△ 1	PTY20591-013	UPPER CASE ASSY
△ 2	PTY20483-023	LOWER CASE
△ 3	YQ10531-006	POWER CORD For EG
△	PTY20080-034	POWER CORD For EK
4	YQ10531-011	SCREW,x2
5	PTY20545-055	SCREW,x3
6	PTY20591-053	SWITCH COVER

3. SCHEMATIC DIAGRAM

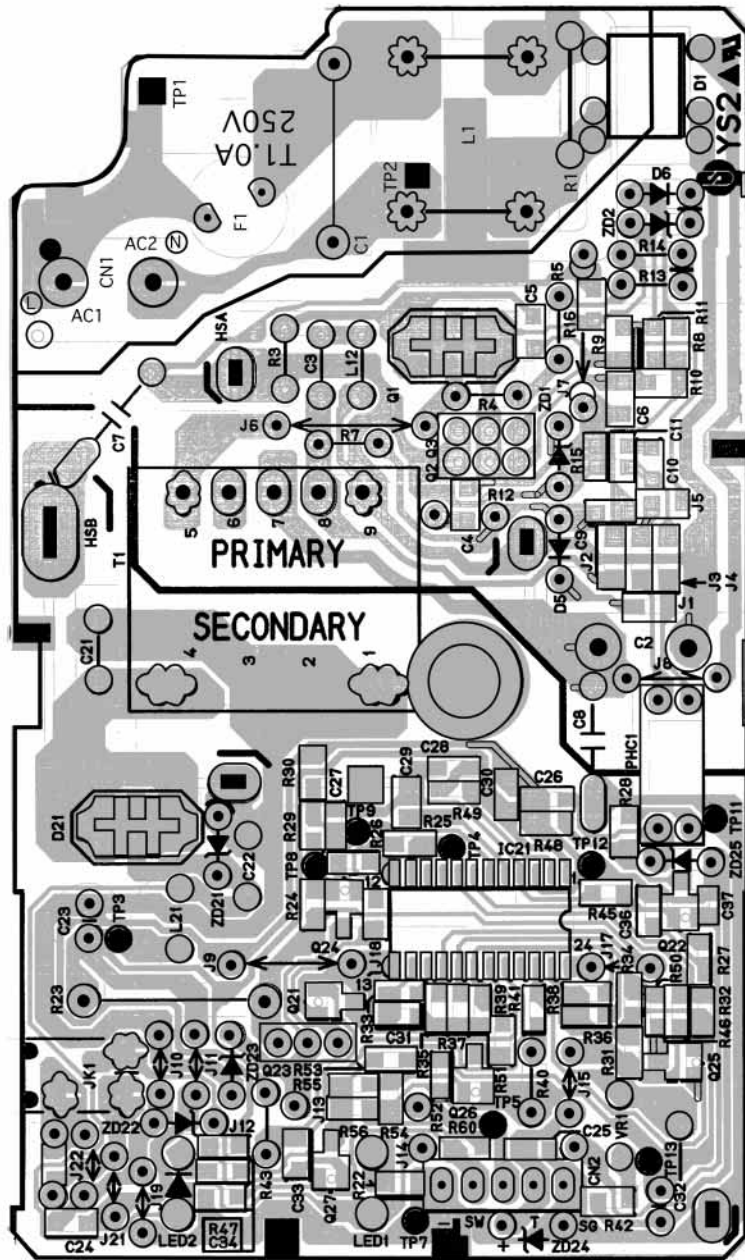
NOTE : When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



Safety precautions
 The components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.



4. CIRCUIT BOARD



5. ELECTRICAL PARTS LIST

#	REF No.	PART No.	PART NAME, DESCRIPTION	#	REF No.	PART No.	PART NAME, DESCRIPTION

MAIN & TERMINAL BOARD ASSY <01>							
△	PW1	PTY20591-503	MAIN & TERMINAL BOARD ASSY	R40	PTY20450-200	MG RESISTOR	20.0kΩ 1/4W
△	HS1	PTY20483-071	HEAT SINK A	R41	NRSA02F-1152X	MG RESISTOR	11.5kΩ 1/10W
△	HS2	PTY20591-072	HEAT SINK B	R42	NRSA02F-1152X	MG RESISTOR	11.5kΩ 1/10W
	OT1	PTY10067-551	SCREW	R43	QRE141J-103Y	MF RESISTOR	10kΩ 1/4W
	IC21	M61030AFP	CHARGE COTROL IC 24pin SOP	R45	NRSA02J-222X	MG RESISTOR	2.2kΩ 1/10W
				R46	NRSA02J-472X	MG RESISTOR	4.7kΩ 1/10W
				R47	NRSA02J-221X	MG RESISTOR	220Ω 1/10W
				R48	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W
				R49	NRSA02J-473X	MG RESISTOR	47kΩ 1/10W
				R50	NRSA02F-5622X	MG RESISTOR	56.2kΩ 1/10W
				R51	NRSA02F-5112X	MG RESISTOR	51.1kΩ 1/10W
				R52	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
				R53	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
				R54	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
				R55	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
				R56	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
				R60	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
				△ C1	QFZ9072-104	F CAPACITOR	0.1μF 250V
				C2	YQ10626-402	E CAPACITOR	47μF 400V
				C3	PTY10067-651	CAPACITOR	1500pF 250V
				C4	NCB21CK-224X	CAPACITOR	0.22μF 16V
				C5	PTY10067-653	CAPACITOR	0.01μF 50V
				C6	NCB21HK-391X	CAPACITOR	390pF 50V
				△ C7	PTY20538-611	CAPACITOR	2200pF 250V
				△ C8	PTY20538-611	CAPACITOR	2200pF 250V
				C9	NDC21HJ-680X	CAPACITOR	68pF 50V
				C10	NDC21HJ-151X	CAPACITOR	150pF 50V
				C11	NDC21HJ-151X	CAPACITOR	150pF 50V
				C21	PTY10067-657	CAPACITOR	0.01μF 250V
				C22	PTY20292-321	E CAPACITOR	680μF 16V
				C23	QETL1CM-227	E CAPACITOR	220μF 16V
				C24	NCB21CK-224X	CAPACITOR	0.22μF 16V
				C25	NCF21EZ-104X	CAPACITOR	0.1μF 25V
				C26	NCB21CK-224X	CAPACITOR	0.22μF 16V
				C27	NCB21EK-473X	CAPACITOR	0.047μF 25V
				C28	NCB21HK-473X	CAPACITOR	0.047μF 50V
				C29	NCB21EK-104X	CAPACITOR	0.1μF 25V
				C30	NCF21EZ-104X	CAPACITOR	0.1μF 25V
				C31	NCB21HK-222X	CAPACITOR	0.0022μF 50V
				C32	QEHA1HM-475	E CAPACITOR	4.7μF 50V
				C33	NCF21EZ-104X	CAPACITOR	0.1μF 25V
				C34	NCF21EZ-104X	CAPACITOR	0.1μF 25V
				C35	QFLA1HJ-224	F CAPACITOR	0.22μF 50V
				△ T1	PTY20538-801	SW TRANS	
				VR1	PTY20483-101	VOLUME	2kΩ
				△ F1	PTY20450-041	FUSE	1A 250V
				JK1	YQ21032-301	DC JACK	
				△ L1	PTY20450-401	LINE FILTER	
				L12	PTY10067-702	BEAD INDUCTOR	
				L21	PTY10067-703	COIL	
				△ PHC1	PC123YS	PHOTO COUPLER	
				SW1	PTY20545-662	SWITCH	
				WR1	PTY20591-052	FLAT CABLE (5P)	
				TB1	PTY20545-051	TERMINAL,x5	
				CN1	PTY20603-056	CONNECTOR	

(VP)-M14ACC E&O.E NO.86592



JVC

VICTOR COMPANY OF JAPAN, LIMITED
VIDEO DIVISION

S40894