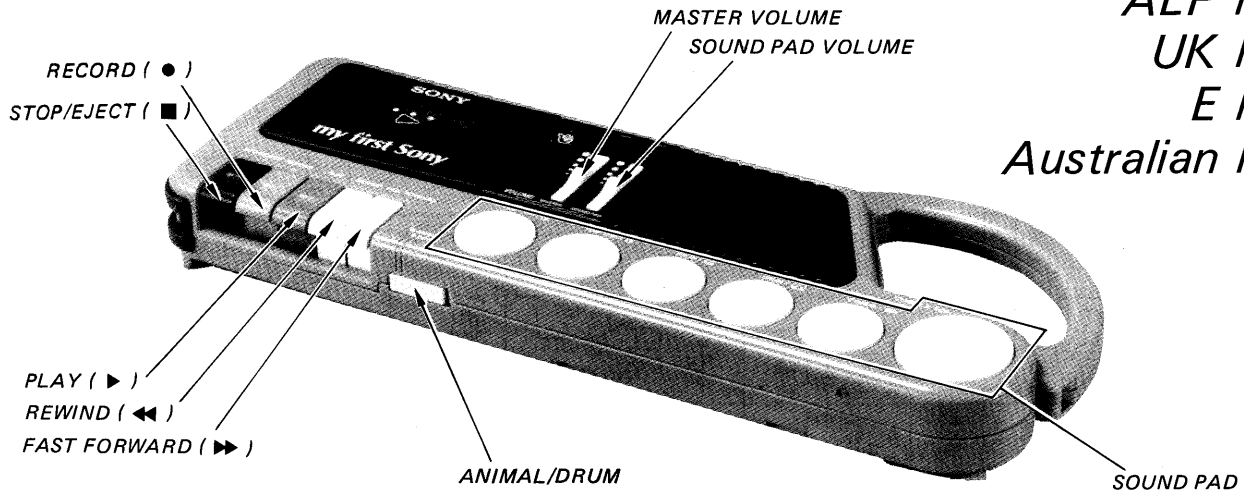


# TCM-4040

## SERVICE MANUAL

US Model  
 Canadian Model  
 AEP Model  
 UK Model  
 E Model  
 Australian Model



### SPECIFICATIONS

#### Tape recorder section:

Recording system 2-track 1-channel monaural  
 Speaker 9.2 cm (approx. 3.6 inches) dia.  
 Frequency response 100 – 6,300 Hz.

#### General:

Power output Speaker: 500 mW  
 Power requirements 6VDC, four R14 (size C) batteries  
 Battery life

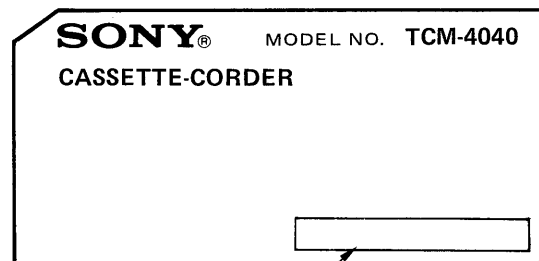
Batteries	Playing
Sony battery SUM-2 (NS)	Approx. 10 hours
Sony alkaline battery AM2 (N)	Approx. 18 hours

Dimensions 460 x 55 x 177 mm (w/h/d)  
 (Approx. 18 $\frac{1}{8}$  x 2 $\frac{1}{4}$  x 7 inches)  
 Weight Approx. 1.3 kg (2 lb 14 oz) including batteries.

### MODEL IDENTIFICATION

– Model Number Label –

US, Canadian,  
 AEP, FR, IT Model . . . . . Carved on rear cabinet  
 UK, E, AUS Model . . . . . Model number label



UK model: 3-342-892-01  
 E model: 3-351-014-01  
 AUS model: 3-351-023-01

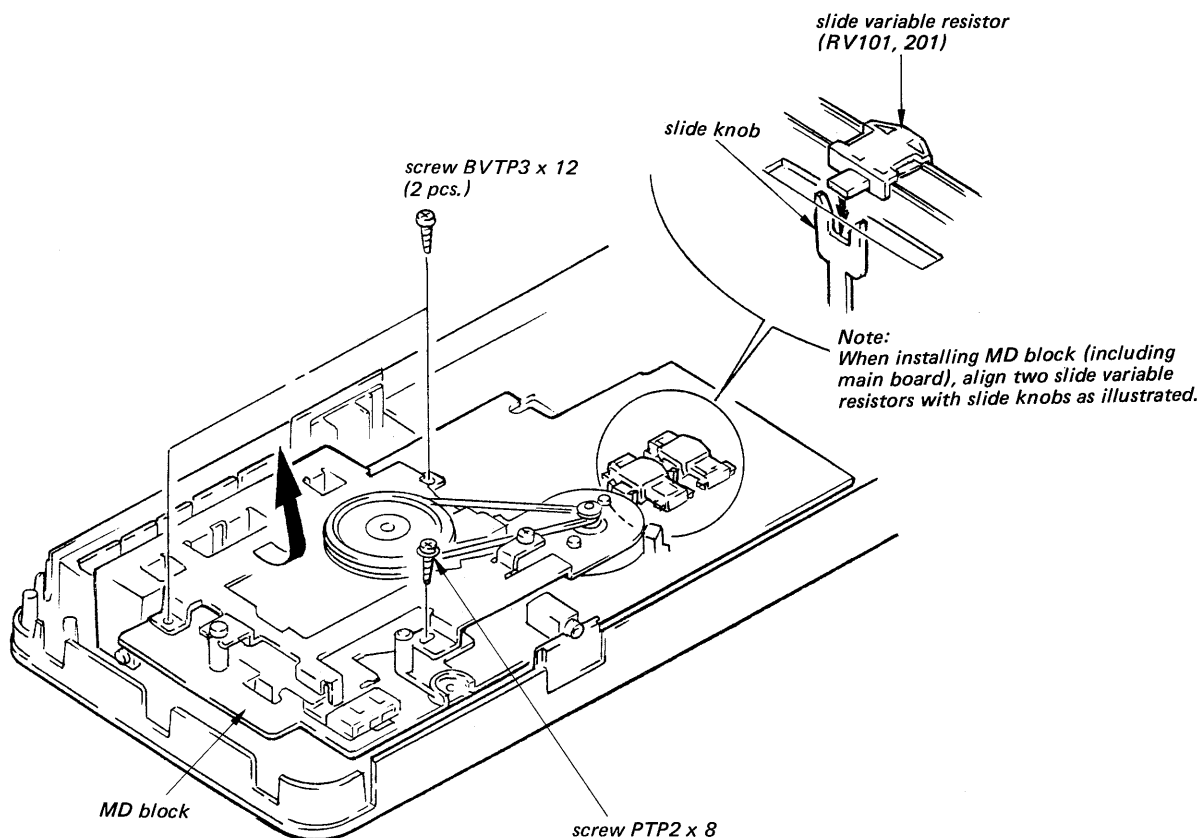
#### Note:

FR: French model  
 IT: Italian model  
 AUS: Australian model

CASSETTE-CORDER  
**SONY**<sup>®</sup>

## SECTION 1 DISASSEMBLY

### MD BLOCK (INCLUDING MAIN BOARD) REMOVAL



## SECTION 2 MECHANICAL ADJUSTMENTS

### PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
 

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage (6 V) unless otherwise noted.

### Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	24 to 45 g·cm (0.33 to 0.62 oz·inch)
FWD Back Tension		1 to 3 g·cm (0.014 to 0.042 oz·inch)
FF	CQ-201B	50 g·cm or more (0.69 oz·inch or more)
REW		

### Tape Tension Measurement

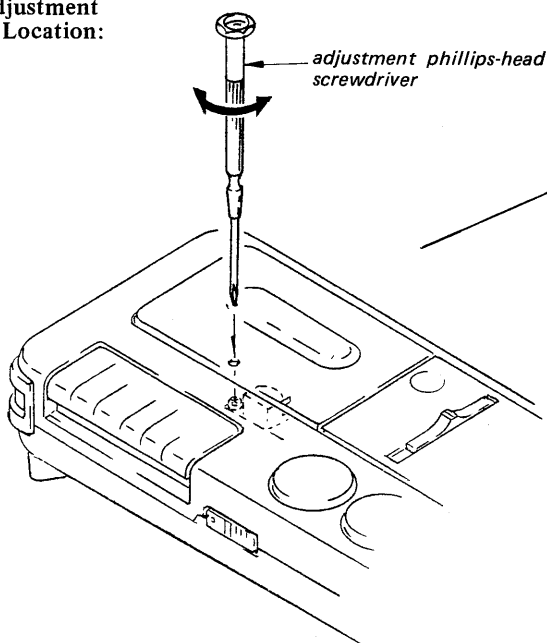
Mode	Tension Meter	Meter Reading
FWD	CQ-403A	70 to 200 g (2.47 to 7.05 oz)

## SECTION 3 ELECTRICAL ADJUSTMENTS

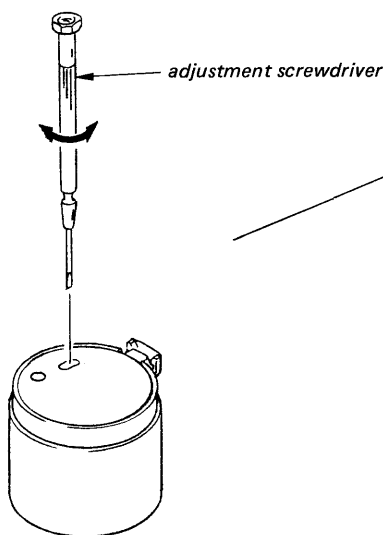
### Test Tape

Alignment Tape	Signal	Adjustments
P-4-A063	6.3 kHz, -10 dB	Record/playback Head Azimuth Adjustment
WS-48A	3 kHz, 0 dB	Tape Speed Adjustment

#### Adjustment Location:



#### Adjustment Location:



### Record/playback Head Azimuth Adjustment

#### Setting:

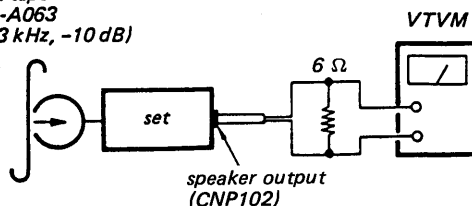
MASTER VOLUME control: mechanical mid

SOUND PAD VOLUME control: minimum

#### Procedure:

1. Mode: playback

test tape  
P-4-A063  
(6.3 kHz, -10 dB)



2. Turn the adjustment screw to obtain the maximum reading on VTVM.

**Note:** Several peaks may appear, but take the maximum.

### Tape Speed Adjustment

#### Setting:

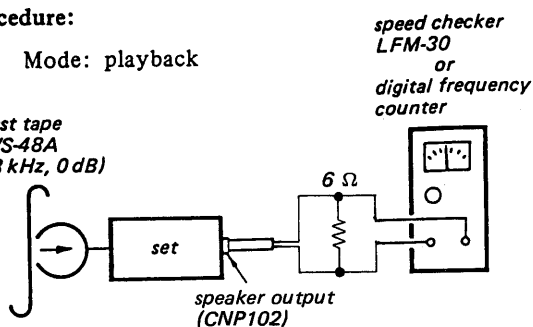
MASTER VOLUME control: mechanical mid

SOUND PAD VOLUME control: minimum

#### Procedure:

Mode: playback

test tape  
WS-48A  
(3 kHz, 0 dB)

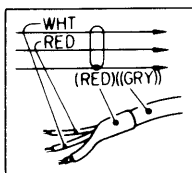


#### Specification:

Speed checker	Digital frequency counter
- 3 to + 3%	2,910 to 3,090 Hz

#### Note on Mounting Diagram:

- Color code or sleeving over the end of the jacket.



- ○ : parts extracted from the component side.
- ● : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ▨ : Pattern on the side which is seen.

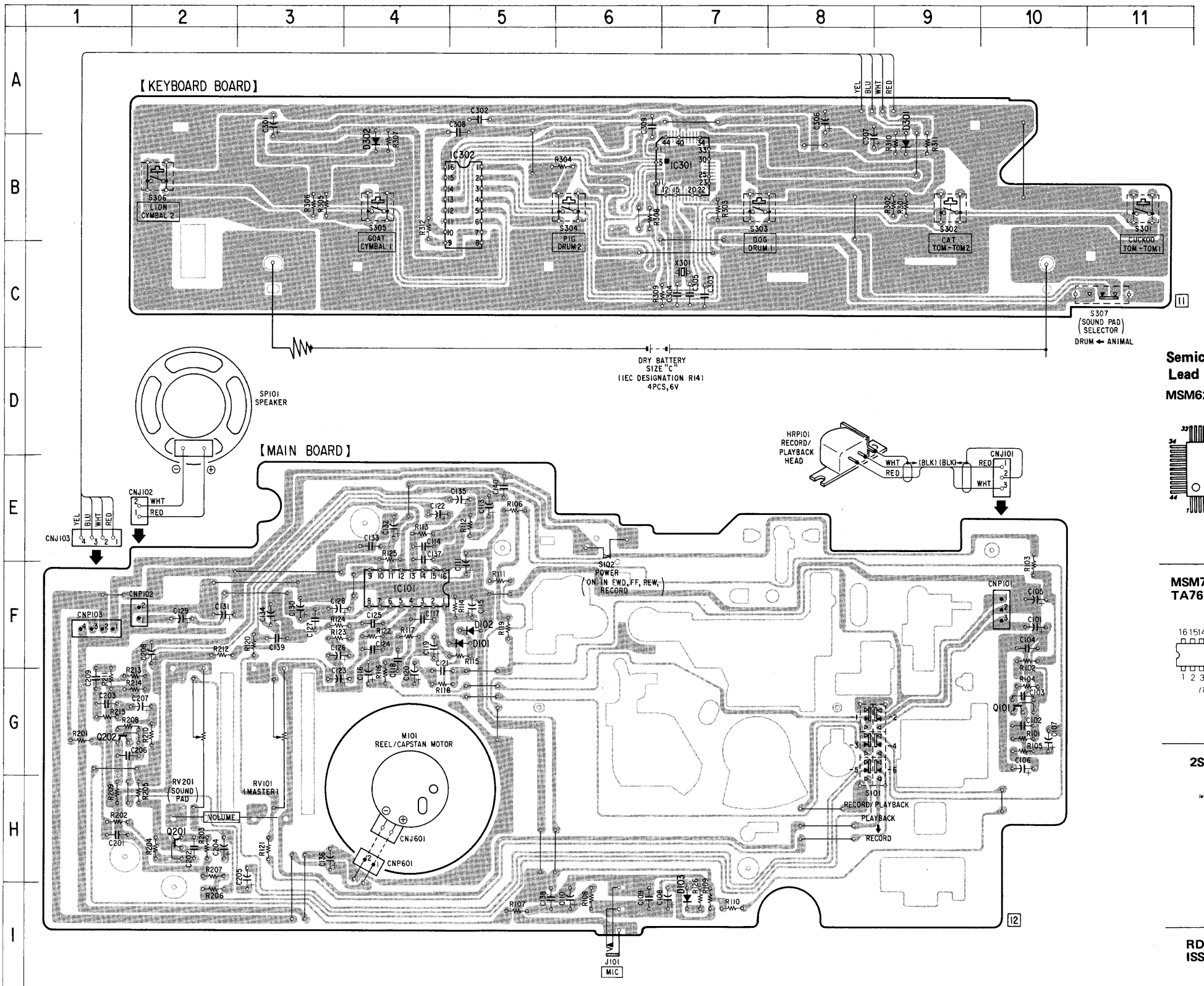
#### Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{pF}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- Total current is measured with no cassette installed.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
no mark: PB  
( ) : REC
- Voltages are taken with a VOM (50 k $\Omega$ /V).  
Voltage variations may be noted due to normal production tolerances.

**SECTION 4  
DIAGRAMS**

4-1. PRINTED WIRING BOARDS • See page 3 for notes.

4-2. SCHEMATIC DIAGRAM  
• See page 3 for notes.



**• Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	F-5	D302	B-4	Q101	G-10
D102	F-5	IC101	F-4	Q201	H-2
D103	I-7	IC301	B-7	Q202	G-1
D301	B-9	IC302	B-5		

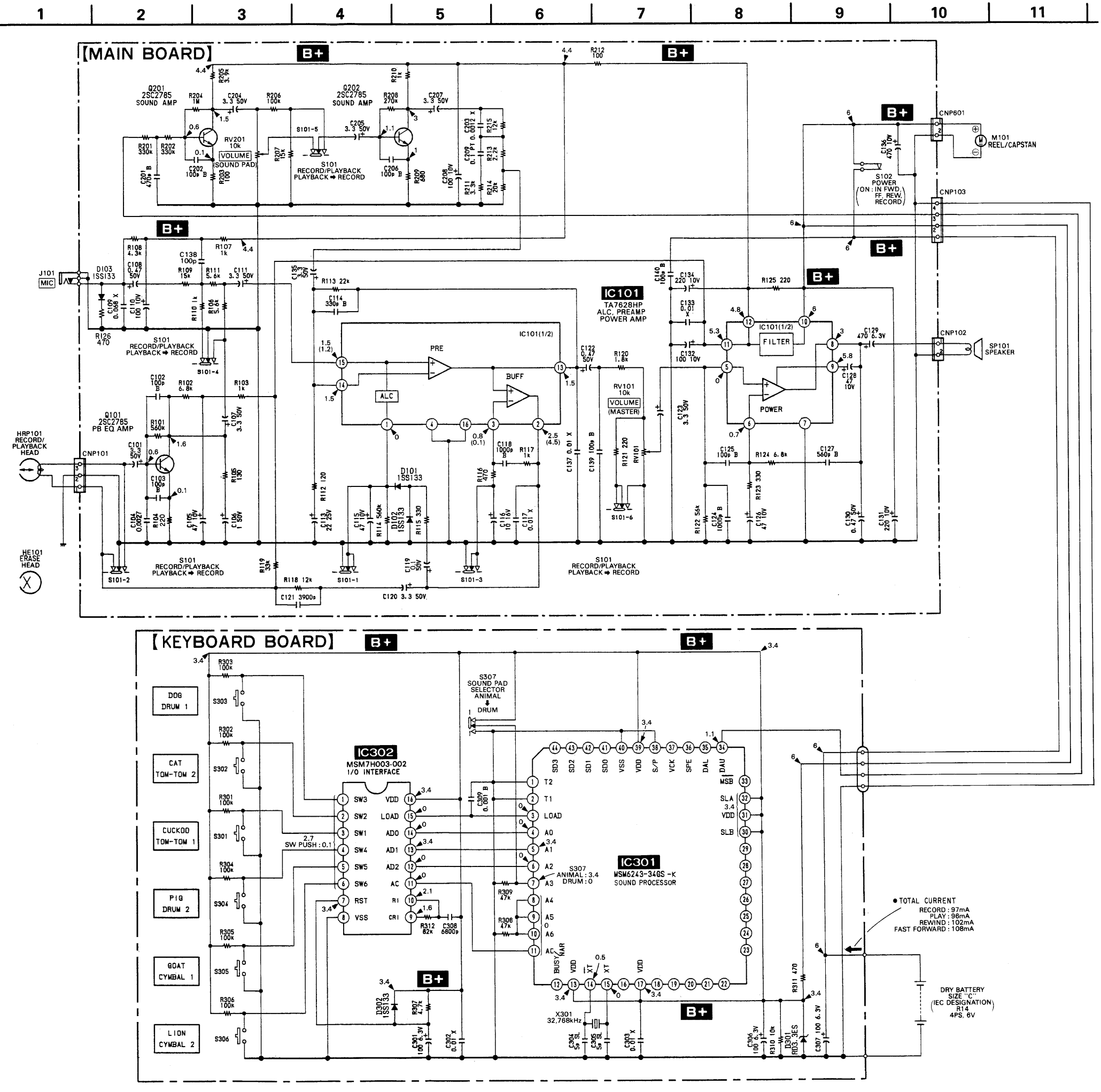
**Semiconductor Lead Layouts  
MSM6243-34GS-K**

**MSM7H003-002  
TA7628HP**

(Top view)

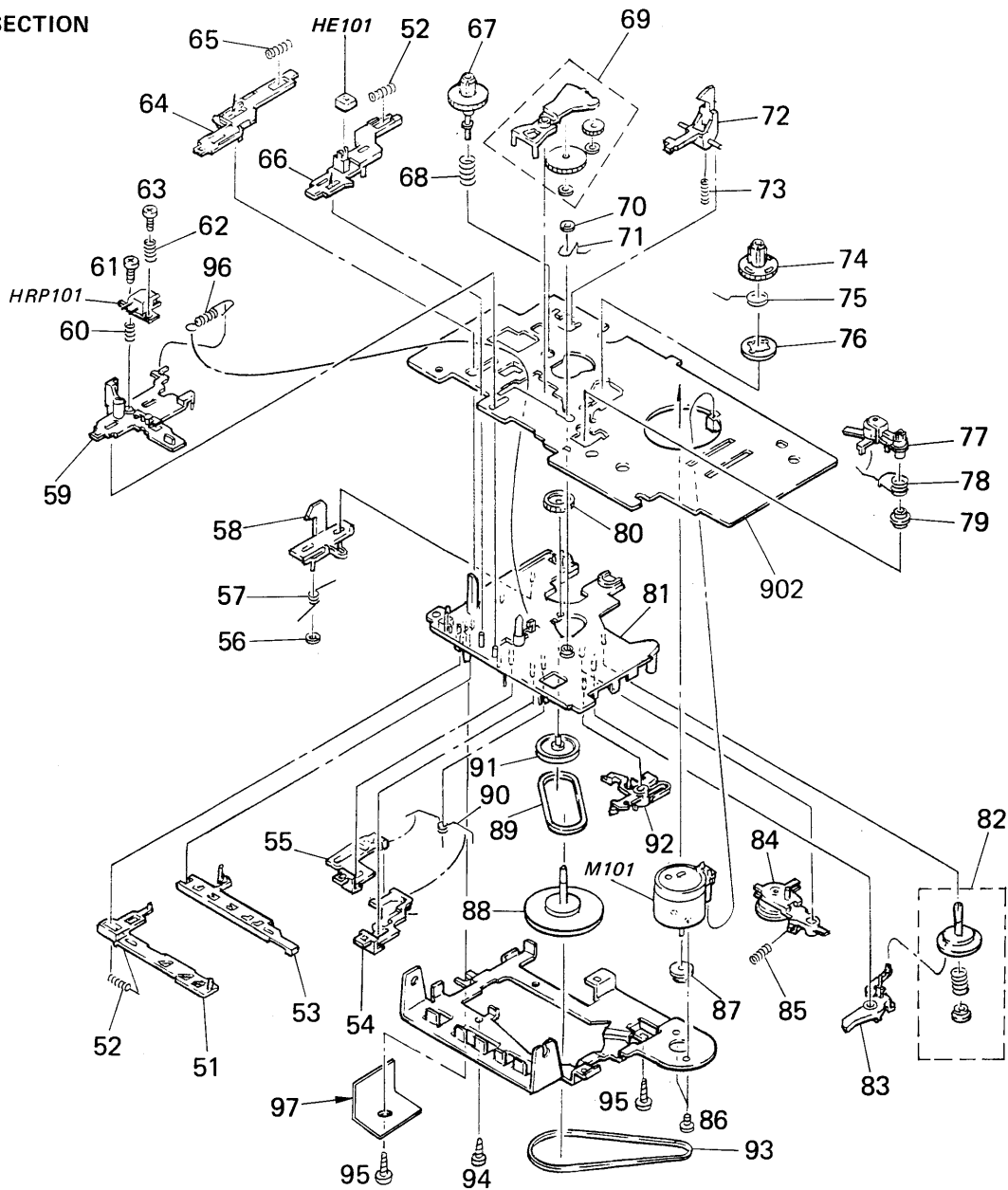
**2SC2785**

**RD3.3ES-B2  
ISS119**





(2) MD SECTION



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	3-342-834-01	SLIDER, POWER		76	3-342-055-01	WASHER, T REEL	
52	3-343-346-01	SPRING, COMPRESSION		77	X-3320-921-1	PINCH ROLLER ASSY	
53	3-342-825-01	SLIDER, LOCK		78	3-342-056-01	SPRING	
54	3-343-340-01	LEVER, FF		79	3-342-842-01	SPACER	
55	3-343-339-01	LEVER, REW		80	3-342-020-01	GEAR, MIDWAY	
56	3-342-841-01	NUT, F PUSH		81	X-3342-805-1	BRACKET (A) ASSY, LEVER	
57	3-343-367-01	SPRING, TORSION		82	X-3320-918-1	PLATE ASSY, REEL, TAKE-UP	
58	3-343-334-01	SLIDER, EJECT		83	3-342-011-01	LEVER (A), SHUT-OFF	
59	3-342-801-01	LEVER, PLAY		84	X-3320-919-1	ARM ASSY, IDLER	
60	3-342-028-01	SPRING, COMPRESSION		85	3-342-034-01	SPRING, TENSION	
61	3-342-067-01	SCREW (2X3.5), AZIMUTH		86	7-627-556-08	SCREW +P 2.6X2.8	
62	3-318-237-01	SPRING, COMPRESSION		87	X-3313-308-1	PULLEY (CP), MOTOR	
63	7-627-553-87	SCREW, PRECISION +P 2X7		88	X-3343-313-1	WHEEL (A) ASSY, CAPSTAN	
64	3-343-335-01	LEVER, STOP		89	3-343-343-01	BELT (MIDWAY)	
65	3-342-836-01	SPRING, COMPRESSION		90	3-342-035-01	SPRING (FR)	
66	3-343-341-01	LEVER, REC		91	X-3343-308-1	PULLEY (A) ASSY, MIDWAY	
67	3-342-013-01	GEAR, S REEL		92	3-342-012-01	LEVER (B), SHUT-OFF	
68	3-342-030-01	SPRING, COMPRESSION		93	3-342-876-01	BELT (CAPSTAN)	
69	X-3320-920-1	ARM ASSY, FR		94	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT	
70	3-343-358-01	RING, RETAINING		95	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
71	3-343-347-01	SPRING		96	3-342-029-01	SPRING, TENSION (POWER TENSION)	
72	3-343-345-11	LEVER, SAFETY		97	*3-351-022-01	SHEET (SHIELD)	
73	3-343-349-01	SPRING, COMPRESSION		902	*A-3015-692-A	MOUNTED PCB, MAIN	
74	3-342-014-01	GEAR, T REEL		HE101	1-543-475-11	HEAD, MAGNETIC (ERASE)	
75	3-342-024-01	SPRING		HRP101	1-543-476-11	HEAD, MAGNETIC (REC/PB)	
				M101	1-541-540-11	MOTOR, DC	

## SECTION 6

# ELECTRICAL PARTS LIST

### NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

### CAPACITORS:

MF:  $\mu$ F, PF:  $\mu$  $\mu$ F.

### RESISTORS

- All resistors are in ohms.
- F: nonflammable

### COILS

- MMH: mH, UH:  $\mu$ H

### SEMICONDUCTORS

In each case, U:  $\mu$ , for example:

UA...:  $\mu$ A..., UPA...:  $\mu$ PA...,  
UPC...:  $\mu$ PC, UPD...:  $\mu$ PD...

Ref.No.	Part No.	Description										
901	*A-3015-693-A	PC BOARD ASSY, KEYBOARD										
902	*A-3015-692-A	MOUNTED PCB, MAIN										
C101	1-123-382-00	ELECT	3.3MF	20%	50V							
C102	1-102-106-00	CERAMIC	100PF	10%	50V							
C103	1-102-106-00	CERAMIC	100PF	10%	50V							
C104	1-102-122-00	CERAMIC	0.0027MF	10%	50V							
C105	1-123-306-00	ELECT	47MF	20%	10V							
C106	1-123-380-00	ELECT	1MF	20%	50V							
C107	1-123-382-00	ELECT	3.3MF	20%	50V							
C108	1-123-379-00	ELECT	0.47MF	20%	50V							
C109	1-161-061-11	CERAMIC	0.068MF	10%	25V							
C110	1-126-101-11	ELECT	100MF	20%	10V							
C111	1-123-382-00	ELECT	3.3MF	20%	50V							
C113	1-123-330-00	ELECT	22MF	20%	25V							
C114	1-102-112-00	CERAMIC	330PF	10%	50V							
C115	1-123-306-00	ELECT	47MF	20%	10V							
C116	1-123-356-00	ELECT	10MF	20%	16V							
C117	1-161-051-00	CERAMIC	0.01MF	10%	25V							
C118	1-102-074-00	CERAMIC	0.001MF	10%	50V							
C119	1-124-463-00	ELECT	0.1MF	20%	50V							
C120	1-123-382-00	ELECT	3.3MF	20%	50V							
C121	1-161-046-00	CERAMIC	0.0039MF	10%	25V							
C122	1-123-379-00	ELECT	0.47MF	20%	50V							
C123	1-123-382-00	ELECT	3.3MF	20%	50V							
C124	1-102-074-00	CERAMIC	0.001MF	10%	50V							
C125	1-102-106-00	CERAMIC	100PF	10%	50V							
C126	1-123-306-00	ELECT	47MF	20%	10V							
C127	1-102-115-00	CERAMIC	560PF	10%	50V							
C128	1-123-306-00	ELECT	47MF	20%	10V							
C129	1-124-472-11	ELECT	470MF	20%	6.3V							
C130	1-123-379-00	ELECT	0.47MF	20%	50V							
C131	1-126-335-11	ELECT	220MF	20%	10V							
C132	1-126-101-11	ELECT	100MF	20%	10V							
C133	1-161-051-00	CERAMIC	0.01MF	10%	25V							
C134	1-126-335-11	ELECT	220MF	20%	10V							
C135	1-123-382-00	ELECT	3.3MF	20%	50V							
C136	1-126-103-11	ELECT	470MF	20%	10V							
C137	1-161-051-00	CERAMIC	0.01MF	10%	25V							
C138	1-102-106-00	CERAMIC	100PF	10%	50V							
C139	1-102-106-00	CERAMIC	100PF	10%	50V							
C140	1-102-106-00	CERAMIC	100PF	10%	50V							
C201	1-102-114-00	CERAMIC	470PF	10%	50V							
C202	1-102-106-00	CERAMIC	100PF	10%	50V							
C203	1-161-040-00	CERAMIC	0.0012MF	10%	25V							
C204	1-123-382-00	ELECT	3.3MF	20%	50V							
C205	1-123-382-00	ELECT	3.3MF	20%	50V							
C206	1-102-106-00	CERAMIC	100PF	10%	50V							
C207	1-123-382-00	ELECT	3.3MF	20%	50V							
C208	1-126-101-11	ELECT	100MF	20%	10V							
C209	1-130-495-00	MYLAR	0.1MF	5%	50V							
C301	1-124-225-00	ELECT	100MF	20%	6.3V							
C302	1-161-051-00	CERAMIC	0.01MF	10%	25V							
C303	1-161-051-00	CERAMIC	0.01MF	10%	25V							
C304	1-102-942-00	CERAMIC	5PF	1PF	50V							
C305	1-102-942-00	CERAMIC	5PF	1PF	50V							
C306	1-124-225-00	ELECT	100MF	20%	6.3V							
C307	1-124-225-00	ELECT	100MF	20%	6.3V							
C308	1-130-481-00	MYLAR	0.0068MF	5%	50V							
C309	1-102-074-00	CERAMIC	0.001MF	10%	50V							
CNJ101*1-506-707-11		PLUG, CONNECTOR (2.5MM)			3P							
CNJ102*1-564-777-11		PLUG, CONNECTOR (2.5MM)			2P							
CNJ103*1-564-778-11		PLUG, CONNECTOR (2.5MM)			4P							
CNP101*1-560-597-00		PIN, CONNECTOR			3P							
CNP102*1-560-596-00		PIN, CONNECTOR			2P							
CNP103*1-560-598-00		PIN, CONNECTOR			4P							
CNP601*1-561-649-00		SOCKET, CONNECTOR			2P							
D101	8-719-911-19	DIODE 1SS119										
D102	8-719-911-19	DIODE 1SS119										
D103	8-719-911-19	DIODE 1SS119										
D301	8-719-109-66	DIODE RD3.3ES-B2										
D302	8-719-911-19	DIODE 1SS119										
HE101	1-543-475-11	HEAD, MAGNETIC (ERASE)										
HRP101	1-543-476-11	HEAD, MAGNETIC (REC/PB)										
IC101	8-759-230-04	IC TA7628HP										
IC301	8-759-980-71	IC MSM6243-34GS-K										
IC302	8-759-978-80	IC MSM7H003-002										
J101	1-566-740-31	JACK (MIC)										
M101	1-541-540-11	MOTOR, DC										
Q101	8-729-178-54	TRANSISTOR 2SC2785										
Q201	8-729-178-54	TRANSISTOR 2SC2785										
Q202	8-729-178-54	TRANSISTOR 2SC2785										
R101	1-247-897-11	CARBON	560K	5%	1/4W							
R102	1-249-427-11	CARBON	6.8K	5%	1/4W							
R103	1-249-417-11	CARBON	1K	5%	1/4W							
R104	1-249-409-11	CARBON	220	5%	1/4W							
R105	1-247-810-11	CARBON	130	5%	1/4W							
R106	1-249-426-11	CARBON	5.6K	5%	1/4W							

Ref.No.	Part No.	Description			
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-247-846-11	CARBON	4.3K	5%	1/4W
R109	1-249-431-11	CARBON	15K	5%	1/4W
R110	1-249-417-11	CARBON	1K	5%	1/4W
R111	1-249-426-11	CARBON	5.6K	5%	1/4W
R112	1-249-406-11	CARBON	120	5%	1/4W
R113	1-249-433-11	CARBON	22K	5%	1/4W
R114	1-247-897-11	CARBON	560K	5%	1/4W
R115	1-249-411-11	CARBON	330	5%	1/4W
R116	1-249-413-11	CARBON	470	5%	1/4W
R117	1-249-417-11	CARBON	1K	5%	1/4W
R118	1-249-430-11	CARBON	12K	5%	1/4W
R119	1-249-435-11	CARBON	33K	5%	1/4W
R120	1-249-420-11	CARBON	1.8K	5%	1/4W
R121	1-249-409-11	CARBON	220	5%	1/4W
R122	1-249-438-11	CARBON	56K	5%	1/4W
R123	1-249-411-11	CARBON	330	5%	1/4W
R124	1-249-427-11	CARBON	6.8K	5%	1/4W
R125	1-249-409-11	CARBON	220	5%	1/4W
R126	1-249-413-11	CARBON	470	5%	1/4W
R201	1-247-891-00	CARBON	330K	5%	1/4W
R202	1-247-891-00	CARBON	330K	5%	1/4W
R203	1-249-405-11	CARBON	100	5%	1/4W
R204	1-247-903-00	CARBON	1M	5%	1/4W
R205	1-249-424-11	CARBON	3.9K	5%	1/4W
R206	1-249-441-11	CARBON	100K	5%	1/4W
R207	1-249-431-11	CARBON	15K	5%	1/4W
R208	1-247-889-00	CARBON	270K	5%	1/4W
R209	1-249-415-11	CARBON	680	5%	1/4W
R210	1-249-417-11	CARBON	1K	5%	1/4W
R211	1-249-423-11	CARBON	3.3K	5%	1/4W
R212	1-249-405-11	CARBON	100	5%	1/4W
R213	1-249-421-11	CARBON	2.2K	5%	1/4W
R214	1-247-862-11	CARBON	20K	5%	1/4W
R215	1-249-430-11	CARBON	12K	5%	1/4W
R301	1-249-441-11	CARBON	100K	5%	1/4W
R302	1-249-441-11	CARBON	100K	5%	1/4W
R303	1-249-441-11	CARBON	100K	5%	1/4W
R304	1-249-441-11	CARBON	100K	5%	1/4W
R305	1-249-441-11	CARBON	100K	5%	1/4W
R306	1-249-441-11	CARBON	100K	5%	1/4W
R307	1-249-425-11	CARBON	4.7K	5%	1/4W
R308	1-249-437-11	CARBON	47K	5%	1/4W
R309	1-249-437-11	CARBON	47K	5%	1/4W
R310	1-249-429-11	CARBON	10K	5%	1/4W
R311	1-249-413-11	CARBON	470	5%	1/4W
R312	1-249-440-11	CARBON	82K	5%	1/4W

Ref.No.	Part No.	Description
RV101	1-238-344-11	RES, VAR, SLIDE (MASTER VOLUME)
RV201	1-238-344-11	RES, VAR, SLIDE (SOUND PAD VOLUME)
S101	1-571-720-11	SWITCH, SLIDE (RECORD/PLAYBACK)
S102	1-571-263-11	SWITCH (POWER)
S301	1-554-303-21	SWITCH, KEY BOARD (CUCKOO/TOM-TOM 1)
S302	1-554-303-21	SWITCH, KEY BOARD (CAT/TOM-TOM 2)
S303	1-554-303-21	SWITCH, KEY BOARD (DOG/DRUM 1)
S304	1-554-303-21	SWITCH, KEY BOARD (PIG/DRUM 2)
S305	1-554-303-21	SWITCH, KEY BOARD (GOAT/CYMBAL 1)
S306	1-554-303-21	SWITCH, KEY BOARD (LION/CYMBAL 2)
S307	1-571-719-11	SWITCH, SLIDE (DRUM/ANIMAL)
SP101	1-544-037-11	SPEAKER
X301	1-567-098-00	VIBRATOR, CRYSTAL 32.768kHz

ACCESSORY & PACKING MATERIAL

1-542-113-11	MICROPHONE (PLUG-IN-POWER)
*3-342-849-01	CUSHION (UPPER)
*3-342-850-01	CUSHION (LOWER)
3-342-880-01	SHOULDER BELT
3-786-484-11	(Canadian, AEP, FR, IT, UK, E)...MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
3-786-484-21	(US).....MANUAL, INSTRUCTION (ENGLISH)
3-786-484-41	(AEP, IT).....MANUAL, INSTRUCTION (GERMAN, NETHERLANDS, SWEDISH, ITALIAN)
3-786-484-51	(AUS).....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
*3-342-851-01	(US, E).....INDIVIDUAL CARTON
*3-342-888-01	(AEP, FR, IT)...INDIVIDUAL CARTON
*3-342-898-01	(Canadian).....INDIVIDUAL CARTON
*3-351-019-01	(UK, AUS).....INDIVIDUAL CARTON