

# ECM-909A

## SERVICE MANUAL

*US Model  
Canadian Model  
AEP Model  
E Model*



### SPECIFICATIONS

#### General

Type	One-point stereo (employing the Mid-side system), electret condenser microphone (with back-electret condenser capsules)
Output plug	Stereo miniplug
Microphone cord	2.9 mm dia. two core-shielded, OFC (Oxygen-free copper) Length: Approx. 1.5 m (59 1/8 inches)
Dimensions	30 x 115.5 mm (Outside diameter x length) (1 3/16 x 4 5/8 inches)
Mass	Approx. 90 g (3 oz) including battery
Supplied accessories	Wind screen (1) Microphone holder (1) Carrying case (1) Stand screw adaptor SAD-35 (1)

#### Performance

Frequency response	100 – 15,000 Hz
Directivity	Directive angle : 90° or 120° (switchable)
Output impedance	1 kilohm $\pm$ 20 % unbalanced
Sensitivity (directive angle 120°)	Open circuit output voltage*1 : $-50 \pm 3$ dB Effective output level*2 : $-56 \pm 3$ dBm Difference between L and R channel sensitivity : Less than 3dB
Power requirements	Normal operating voltage : 1.5 V, R6 (size AA) battery Minimum operating voltage : Approx. 1.1 V Battery life : Approx. 200 hours with a Sony R6P (size AA) battery
Signal-to-noise ratio	More than 62 dB (1,000 Hz, 1 Pa)
Maximum sound pressure level*3	More than 120 dBsPL
Operating temperature range	0 °C to 45 °C (32 °F to 113 °F)

\*1 0 dB = 1 v/Pa, 1,000 Hz (1 Pa = 10  $\mu$ bar = 94 dBsPL)

\*2 0 dBm = 1 mW/Pa, 1,000 Hz

\*3 1 % wave distortion is present at 1,000 Hz.  
(0 dBsPL = 2 x 10<sup>-5</sup>Pa)

Design and specifications are subject to change without notice.

#### Optional Accessory

To connect this microphone to the equipment with a microphone jack other than stereo minijack, use the following connecting cord.

PC-137S  
(Stereo minijack  $\leftrightarrow$  miniplug/phone plug adaptor x 2)

#### Features

This microphone is suitable for use in a variety of situations such as at a concert or a conference with the portable stereo recorder (Sony DAT, WALKMAN Professional, etc.).

- The directive angle (between left and right channels) can be set to 90° or 120° according to the sound source.
- The microphone gives excellent sound image and faithful stereo sound reproduction with less "hole in the middle".

**ELECTRET CONDENSER  
STEREO MICROPHONE  
SONY®**

## Parts Identification and Uses

### 1 Wind screen

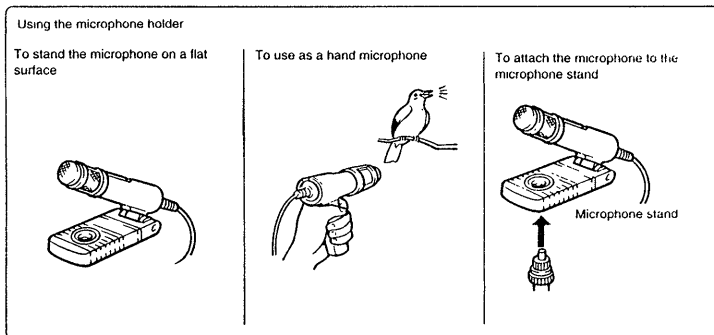
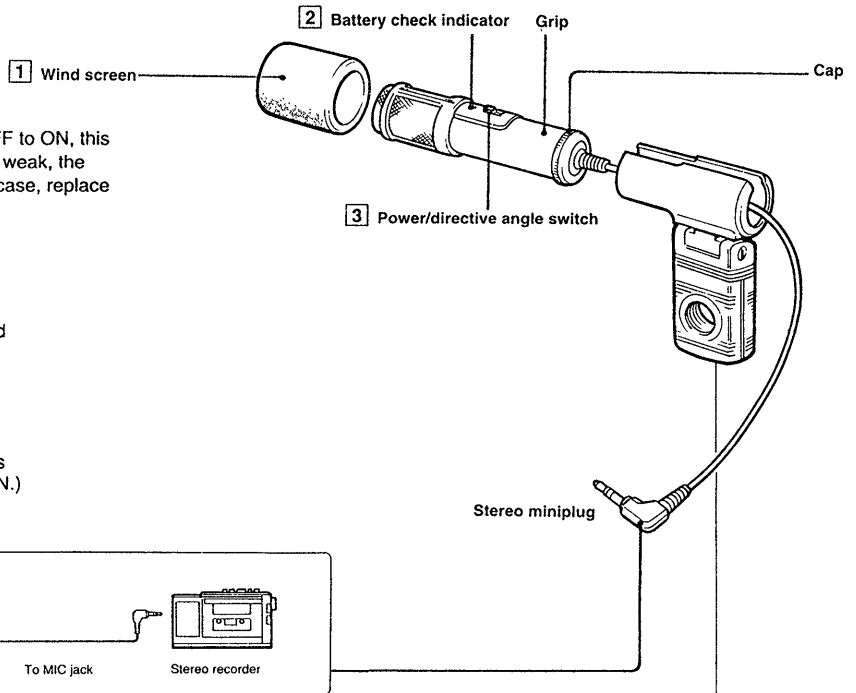
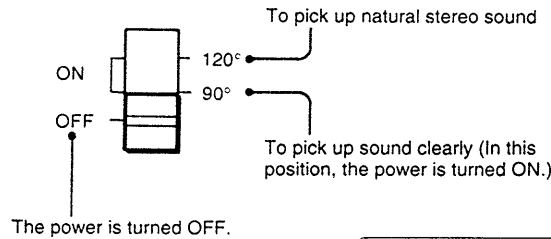
Attach to reduce wind or breathing noise.

### 2 Battery check indicator

When the power/directive angle switch is turned from OFF to ON, this indicator lights momentarily. When the battery becomes weak, the indicator remains dimly lit or does not light at all. In this case, replace the battery with a new one.

### 3 Power/directive angle switch

Set the switch in accordance with the sound source.



## Battery Installation

### When to replace the battery

When the power is turned on, the battery check indicator lights momentarily. When the battery becomes weak, the indicator remains dimly lit or does not light at all. In this case, replace the battery with a new one.

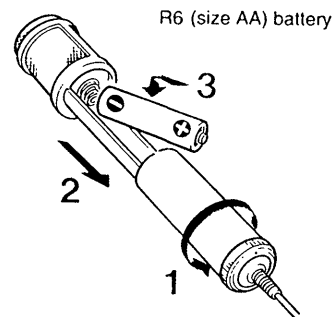
Sony R6P (size AA) battery gives continuous operation of the microphone for about 200 hours.

### Notes on battery

To avoid damage to the unit caused by battery leakage and corrosion;

- Install the battery with correct polarity.
- Do not try to recharge batteries.
- Remove the battery if the microphone is not to be used for a long period of time.

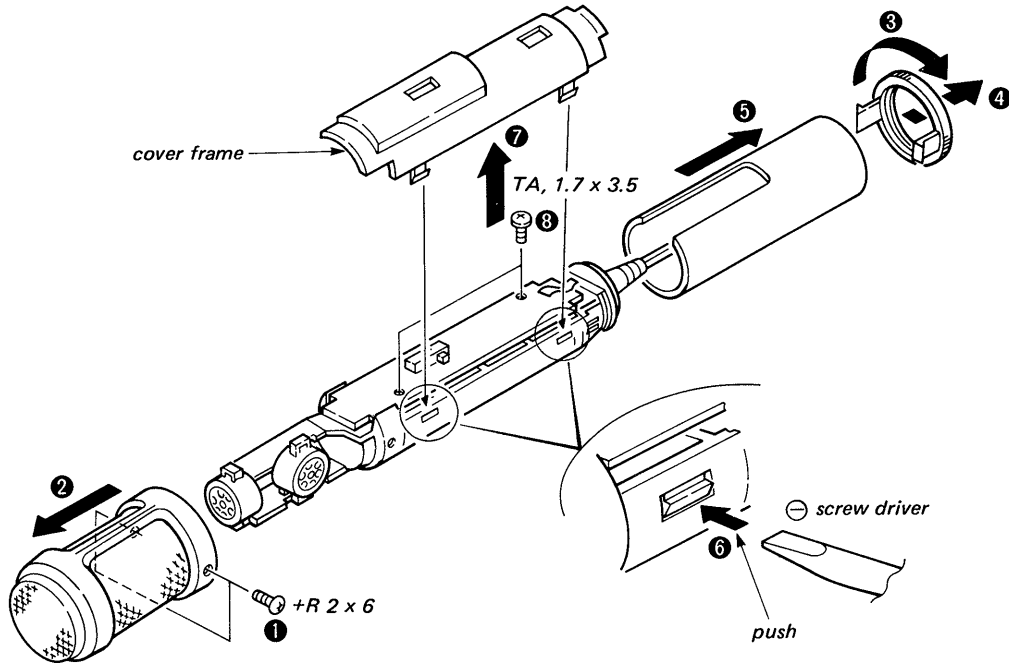
In case of battery leakage, wipe off any deposit in the battery compartment before installing a new battery.



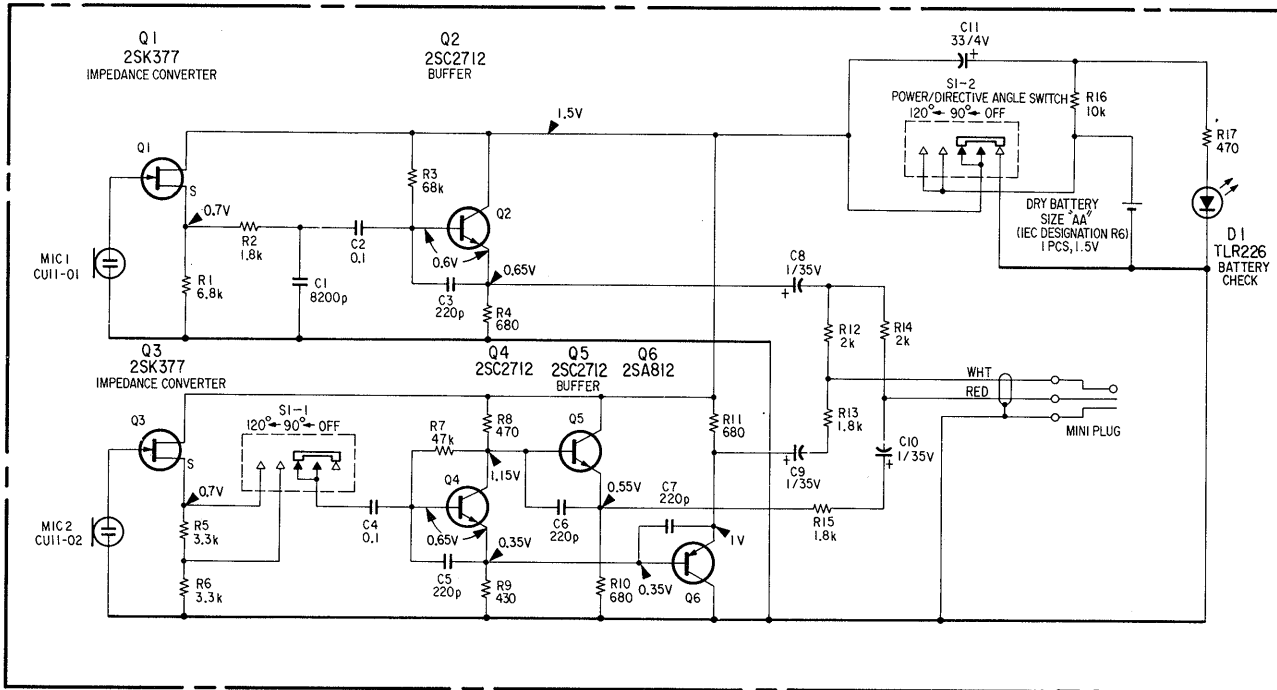
Turn the cap counterclockwise.

**DISASSEMBLY**

**Note:** Follow the disassembly procedure in the numerical order given.



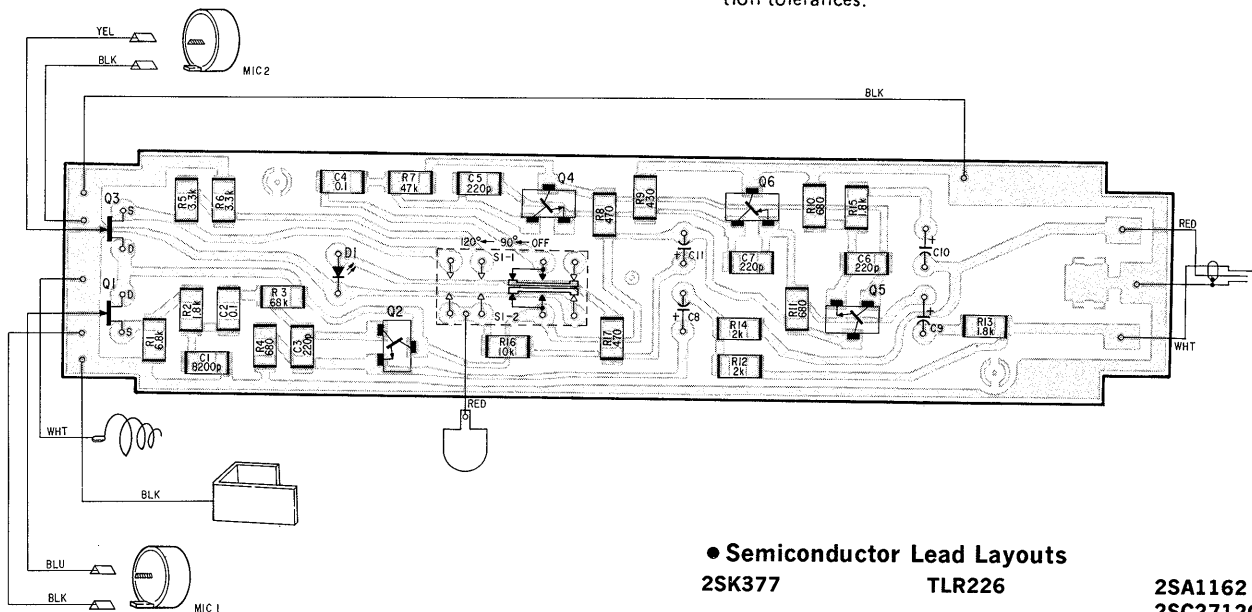
**SCHEMATIC DIAGRAM**



**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.
- Voltages are taken with a VOM (Input Impedance  $10\text{M}\Omega$ ).  
Voltage variations may be noted due to normal production tolerances.

**PRINTED WIRING BOARDS**

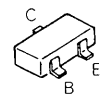
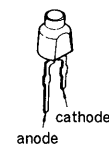
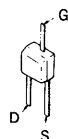


**• Semiconductor Lead Layouts**

**2SK377**

**TLR226**

**2SA1162  
2SC2712G**



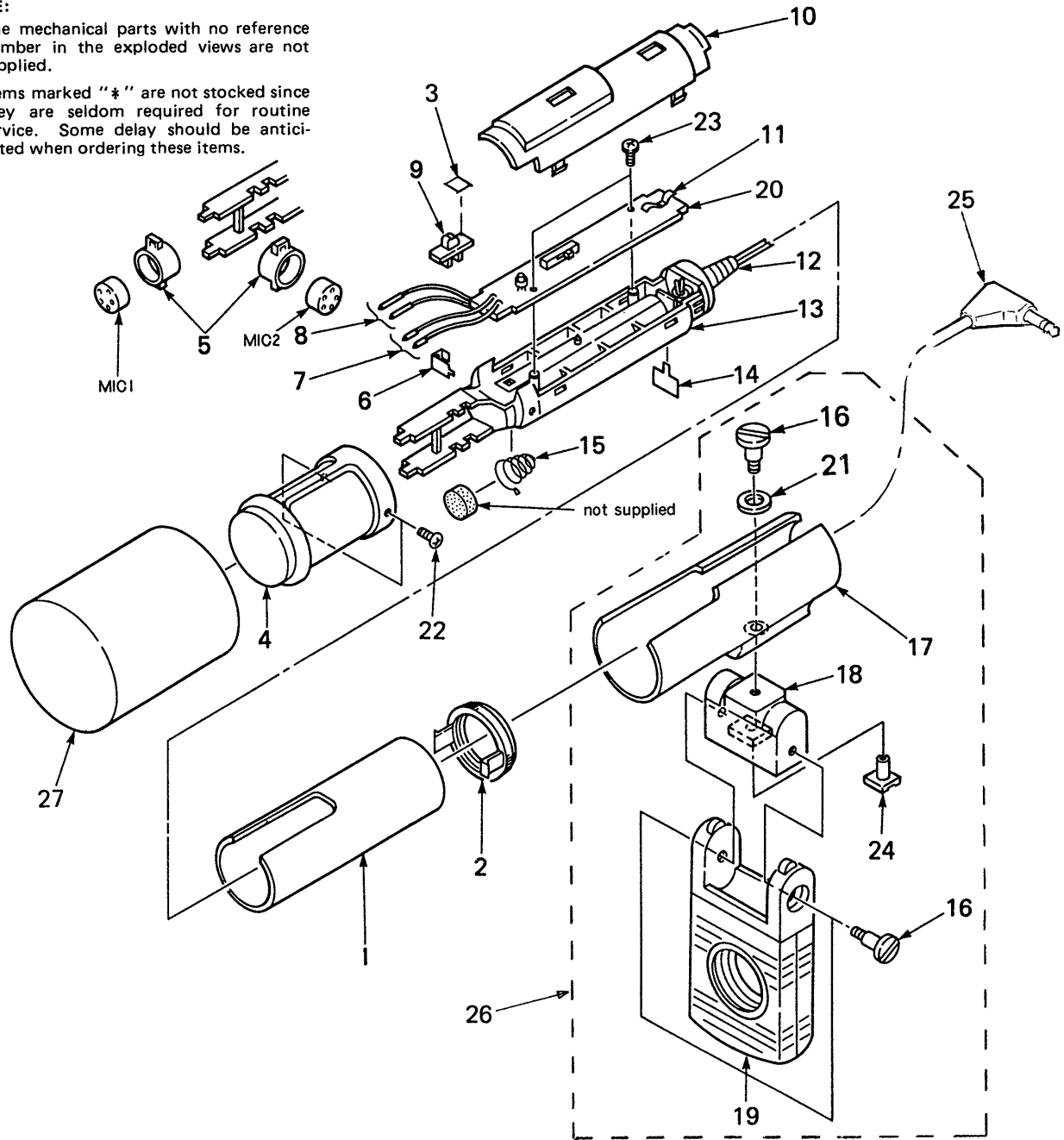
**Note on Printed Wiring Board:**

- : parts extracted from the component side.
- : Pattern on the side which is seen.
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

**EXPLODED VIEW AND PARTS LIST**

**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	2-532-242-01	GRIP		17	2-532-260-11	HOLDER	
2	2-532-243-01	CAP		18	2-532-251-01	JOINT	
* 3	2-543-095-01	SEAL, POWER INDICATION		19	X-2532-205-1	GRIP ASSY, HOLDER	
4	A-4514-062-A	CASE ASSY, MICROPHONE		* 20	1-622-145-21	AMPLIFIRE BOARD	
5	2-532-244-01	HOLDER, CAPSULE		21	3-701-442-21	WASHER, 4.5	
* 6	2-532-218-00	LAG, GROUND		22	7-621-555-40	SCREW +RK 2X6	
7	2-529-927-00	TERMINAL (B), GROUND		23	3-892-535-01	SCREW +P 1.7	
8	2-523-713-00	TERMINAL		24	2-532-261-01	NUT, JOINT	
9	2-532-241-01	KNOB, SWITCH		25	1-696-446-11	CORD, MICROPHONE (2 CORE)	
10	2-532-255-11	COVER, FRAME		26	X-2542-064-1	HOLDER ASSY	
11	2-532-245-01	SPRING		27	2-532-250-01	SCREEN, WINDOW	
* 12	2-532-204-11	BUSHING		MIC1	8-814-173-00	MICROPHONE, BUILT-IN (CU11-01)	
13	2-532-254-01	FRAME		MIC2	8-814-174-01	MICROPHONE, BUILT-IN (CU11-02)	
14	3-578-109-00	CONTACT		Q1	8-729-824-18	TRANSISTOR 2SK377-J3	
15	3-325-414-01	SPRING		Q3	8-729-824-18	TRANSISTOR 2SK377-J3	
16	2-532-252-01	SCREW, HOLDER					

**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.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA ..:  $\mu$ A. uPA..:  $\mu$ PA..  
uPB..:  $\mu$ PB.. uPC..:  $\mu$ PC.. uPD..:  $\mu$ PD..
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-622-145-21	AMPLIFIER BOARD *****		R15	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
		< CAPACITOR >		R16	1-216-073-00	METAL CHIP 10K 5%	1/10W
C1	1-163-020-00	CERAMIC CHIP 0.0082uF 10%	50V	R17	1-216-041-00	METAL CHIP 470 5%	1/10W
C2	1-163-038-00	CERAMIC CHIP 0.1uF	25V			< SWITCH >	
C3	1-163-001-11	CERAMIC CHIP 220PF 10%	50V	S1	1-554-843-11	SWITCH, SLIDE	
C4	1-163-038-00	CERAMIC CHIP 0.1uF	25V	*****			
C5	1-163-001-11	CERAMIC CHIP 220PF 10%	50V			MISCELLANEOUS	
C6	1-163-001-11	CERAMIC CHIP 220PF 10%	50V			*****	
C7	1-163-001-11	CERAMIC CHIP 220PF 10%	50V	25	1-696-446-11	CORD, MICROPHONE (2 CORE)	
C8	1-131-347-00	TANTALUM 1uF 10%	35V	MIC1	8-814-173-00	MICROPHONE, BUILT-IN (CU11-01)	
C9	1-131-347-00	TANTALUM 1uF 10%	35V	MIC2	8-814-174-01	MICROPHONE, BUILT-IN (CU11-02)	
C10	1-131-347-00	TANTALUM 1uF 10%	35V	Q1	8-729-824-18	TRANSISTOR 2SK377-J3	
C11	1-124-431-00	ELECT 33uF 20%	4V	Q3	8-729-824-18	TRANSISTOR 2SK377-J3	
		< DIODE >		*****			
D1	8-719-812-26	LED TLR226				ACCESSORIES & PACKING MATERIALS	
		< TRANSISTOR >				*****	
Q2	8-729-230-49	TRANSISTOR 2SC2712-G		2-100-952-00	ADAPTER, SCREW, STAND (SAD-35)		
Q4	8-729-230-49	TRANSISTOR 2SC2712-G		2-539-310-01	CASE, CARRYING		
Q5	8-729-230-49	TRANSISTOR 2SC2712-G		3-755-485-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/ SPANISH/GERMAN/DUTCH/SWEDISH/PORTUGUESE)		
Q6	8-729-216-22	TRANSISTOR 2SA1162		2-532-250-01	SCREEN, WINDOW		
		< RESISTOR >		X-2542-064-1	HOLDER ASSY		
R1	1-216-069-00	METAL CHIP 6.8K 5%	1/10W				
R2	1-216-055-00	METAL CHIP 1.8K 5%	1/10W				
R3	1-216-093-00	METAL CHIP 68K 5%	1/10W				
R4	1-216-045-00	METAL CHIP 680 5%	1/10W				
R5	1-216-061-00	METAL CHIP 3.3K 5%	1/10W				
R6	1-216-061-00	METAL CHIP 3.3K 5%	1/10W				
R7	1-216-089-00	METAL CHIP 47K 5%	1/10W				
R8	1-216-041-00	METAL CHIP 470 5%	1/10W				
R9	1-216-040-00	METAL GLAZE 430 5%	1/10W				
R10	1-216-045-00	METAL CHIP 680 5%	1/10W				
R11	1-216-045-00	METAL CHIP 680 5%	1/10W				
R12	1-216-056-00	METAL GLAZE 2K 5%	1/10W				
R13	1-216-055-00	METAL CHIP 1.8K 5%	1/10W				
R14	1-216-056-00	METAL GLAZE 2K 5%	1/10W				