

# BOSS DD-3(T)

## Digital Delay

# SERVICE NOTES

## Third Edition

### Issued by RJA

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## WARNING

There are three types of DD-3(T) with different circuitry called "DD-3", "DD-3A" and "DD-3B". The pedals of all three types are labeled "DD-3".

We call the new type of this model, DD-3B for identifying the old type and new type for convenience on service system.

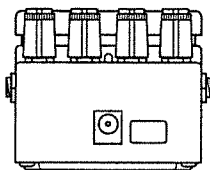
Check the model name as follows.

Of the three types, only the appearance of the "DD-3" is different. Identify the "DD-3" or the "DD-3A or DD-3B" by the shape of the adapter jack as shown in the following figure.

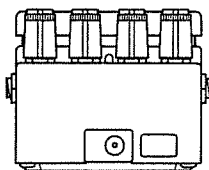
The appearance of the "DD-3A" and the "DD-3B" are the same. Due to a DRAM change, it has been changed to "DD-3B" from serial No. SO91200 of 1912LOT (produced in August 2001). It can be identified by the serial number. The "DD-3A" and "DD-3B" can also be identified by the silk-screen printing on the board.

When referring to the service notes or ordering parts, check the model name using the above process.

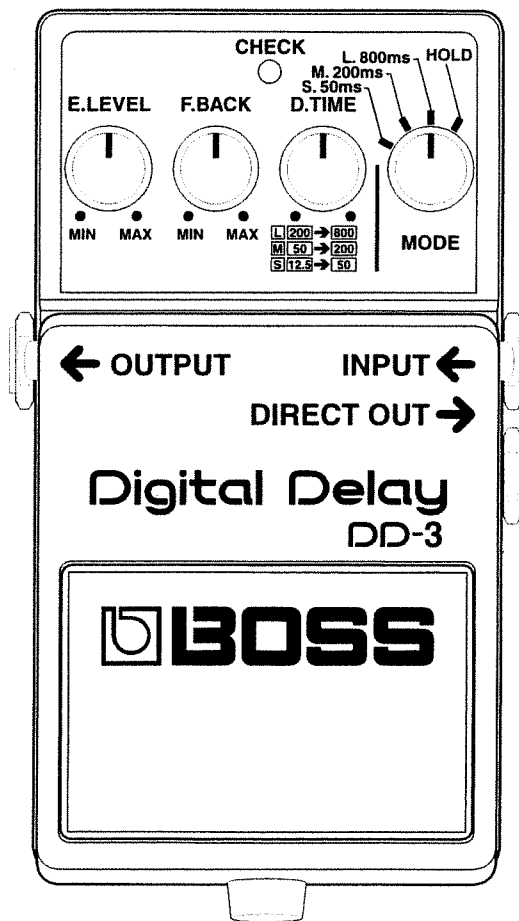
This service note is for the "DD-3B". Refer to "DD-3A SERVICE NOTES" (#17059557) when repairing the DD-3A. Variable resistor, switch and mechanical parts for the "DD-3A" and "DD-3B" are compatible. Refer to "DD-2/3 SERVICE NOTES" (#17059183) when repairing the DD-3.



DD-3A or DD-3B



DD-3



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# SPECIFICATIONS

## Options

AC Adaptor PSA-Series

\* 0 dBu = 0.775 Vrms

## Power Supply

DC 9 V; Dry battery (6AM6/9V)

AC Adaptor (PSA-series: Option)

## Current Draw

45 mA to 65 mA (DC 9V)

## Controls

Pedal Switch

EFFECT LEVEL

FEEDBACK

DELAY TIME

MODE SELECTOR Switch

## Indicator

Check Indicator (serves also as battery check indicator)

## Jacks

INPUT

DIRECT OUTPUT

MAIN OUTPUT

AC Adaptor

## System

Analog logarithmic compression and 12 bit quantizing system

## Delay Time

12.5 ms (MIN) to 800 ms (MAX)

S (Short) 50 ms (12.5 ms to 50 ms)

M (Middle) 200 ms (50 ms to 200 ms)

L (Long) 800 ms (200 ms to 800 ms)

## Hold Time

200 ms (MIN) to 800 ms (MAX) in Hold mode

## Frequency Response

Delay Sound: 40 Hz to 7 kHz; +1/-3 dB

Direct Sound: 10 Hz to 60 kHz; +1/-3 dB

## Residual Noise

-95 dBu (IHF-A, Typ.)

## Input Impedance

1 M ohm

## Output Load Impedance

10 k ohm or greater

## Dimensions

73 (W) x 129 (D) x 59 (H) mm

2-7/8 (W) x 5-1/8 (D) x 2-3/8 (H) inches

## Weight

450 g / 1 lb (including battery)

## Accessories

OWNER'S MANUAL

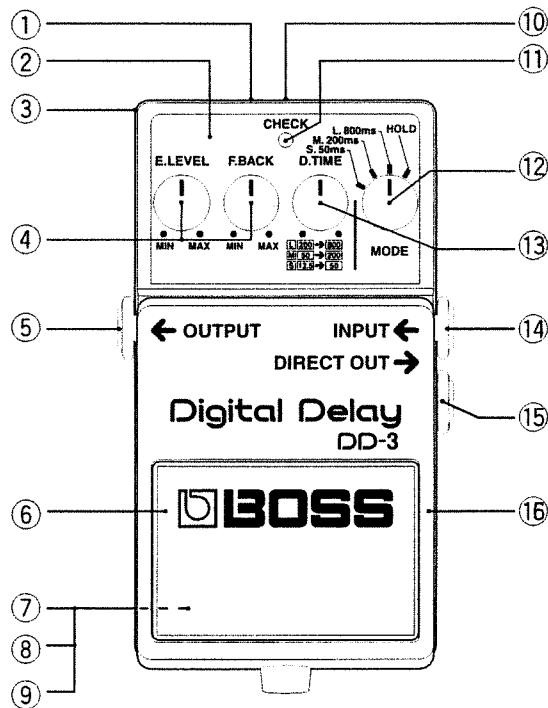
ENGLISH(#2603768702)

JAPANESE(#2603768603)

Dry Battery(#\*\*\*\*\*); 6AM6/9V (Alkaline)

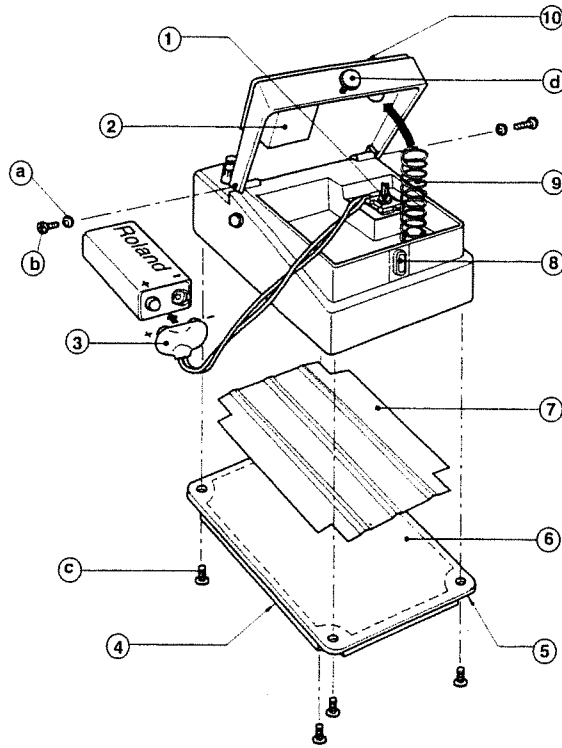
Leaflet ("USING THE UNIT SAFELY," "IMPORTANT NOTES," and "Information")

# LOCATION OF CONTROLS, PARTS LIST



No.	PART CODE	PART NAME	DESCRIPTION
1	2253753801	PSA CAUTION	253-538
2	2221740401	PANEL	
3	22017993RT	CASE	
4	2247726200	KNOB (BLUE)	247-262
	13279869	POTENTIOMETER	RKO971110 50KB
5	13449105MF	JACK	HTJ-064-14I
6	2235730400	FOOT BASE (PEDAL MAT)	235-304
7	2202785100	BOTTOM COVER	202-851
8	2235730500	BOTTOM BASE	235-305
9	G253751603	BOTTOM CAUTION PSA	FCC/CE/C-TICK/EMC GRY
10	13449711	AC ADAPTOR JACK	HEC-0470-01-630
11	1502928100	LED (RED)	L-34HDSL
12	2247726200	KNOB (BLUE)	247-262
	13119308	SWITCH (ROTARY)	SBM1024 (SRBM 14011A)
13	2247726200	KNOB (BLUE)	247-262
	13289126	POTENTIOMETER	RK0971110 10KA 15MM
14	F3449112	JACK (STEREO)	HTJ-064-13D
15	13449140MF	JACK (STEREO)	HTJ-064-14D
16	22187547RT	PEDAL	

# EXPLODED VIEW, PARTS LIST



## [PARTS]

No.	PART CODE	PART NAME	DESCRIPTION	Q'TY
1	13129710	SWITCH (PUSH)	JM-0404	1
2	2226733300	CUSHION	267-333	1
3	F3419102	BATTERY CONNECTOR		1
4	G253751603	BOTTOM CAUTION PSA	FCC/CE/C-TICK/EMC GRY	1
5	2235730500	BOTTOM BASE	235-305	1
6	2202785100	BOTTOM COVER	202-851	1
7	G2167301	INSULATION SPACER		1
8	2215770201	PEDAL GUIDE BUSH	215-702	1
9	2217710900	COIL SPRING	214-109	1
10	2235730400	FOOT BASE (PEDAL MAT)	235-304	1

## [SCREW]

No.	PART CODE	PART NAME	DESCRIPTION	Q'TY
a	40125134	NYLON WASHER 3X6X0.5		2
b	40010267	SCREW M3X10	BINDING FE BZC	2
c	40010901	SCREW M3X6	BINDING B1 BZC	4
d	H5029820	SCREW M3X10	THUMB SCREW	1

# PARTS LIST

## SAFETY PRECAUTIONS:

The parts marked  $\Delta$  have safety-related characteristics. Use only listed parts for replacement.

## CONSIDERATION ON PARTS ORDRING

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER
Ex. 10	22575241	Sharp Key	C-20/50
15	2247017300	Knob (orange)	DAC-15D

Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.

NOTE: The parts marked # are new. (initial parts)

CASING					
	2235730500	BOTTOM BASE	235-305		1
	2235730400	FOOT BASE (PEDAL MAT)	235-304		1
	2202785100	BOTTOM COVER	202-851		1
#	22017993RT	CASE			1
#	2221740401	PANEL			1
#	22187547RT	PEDAL			1
KNOB,BUTTON					
	2247726200	KNOB (BLUE)	247-262		4
SWITCH					
	13119308	SBM1024 (SRBM 14011A)	SWITCH (ROTARY)	SW1	1
	13129710	JM-0404	SWITCH (PUSH)	SW2	1
JACK,EXT TERMINAL					
	F3449112	HTJ-064-13D	JACK (STEREO)	JK1	1
	13449140MF	HTJ-064-14D	JACK (STEREO)	JK2	1
	13449105MF	HTJ-064-14I	JACK	JK3	1
	13449711	HEC-0470-01-630	AC ADAPTOR JACK	JK4	1
PWB ASSY					
#	75D563P000	MT BOARD ASSY	DD-3B		1
IC					
	15289402	TA78L05F(TE12L)	IC (REGULATOR)	IC9	1
	15289148	M5218AFP	IC (OP AMP)	IC1	1
	15229875	MN51010RBA B05-008	IC (GATE ARREY)	IC7	1
	02343090	M11B416256A-35J(T)	IC (DRAM)	IC11	1
	15289118	NJM311M	IC (COMPARATOR)	IC5	1
#	F5289115	NJM319M	IC (COMPARATOR)	IC10	1
#	F5289113	SA571D	IC (COMPANDOR)	IC2	1
	15159115T1	TC4066BP	IC (C MOS)	IC3	1
	15249114T0	TC74HC00AF SOP	IC	IC4	1
	15289155	UPC4072G2	IC	IC8	1
TRANSISTOR					
	15319108	2SC-3324GR-TE85R	TRANSISTOR	Q1,Q3-Q5,Q7-Q9	7
	F5329530	2SK879Y	FET TRANSISTOR	Q2,Q10	2
	15329103T0	2SK880-GR(TE85R)	FET TRANSISTOR	Q6,Q11	2
DIODE					
	01019534	1SS355 TE-17	SWITCHING DIODE	D1-D8	8
	1502928100	L-34HDSL	LED (RED)	LED1	1
	F5339201	GS1G	DIODE	D9	1
	F5339312	RD5.6S B3	DIODE	D10	1
RESISTOR					
	F5419705	CRN34103J	RESISTOR ARRAY	RA2-RA4	3
	13919175	RKM14L472/942F	RESISTOR ARRAY	RA1	1
	00567023	RPC05T 101 J	MTL.FILM RESISTOR	R24	1
	00567156	RPC05T 102 J	MTL.FILM RESISTOR	R2,R26,R43	3
	00567289	RPC05T 103 J	MTL.FILM RESISTOR	R3,R5,R10,R18-R22,R27,R36-R40,R42,R44,R45,R4	26
	00567412	RPC05T 104 J	MTL.FILM RESISTOR	R1,R7,R23,R25,R47	5
	00567556	RPC05T 105 J	MTL.FILM RESISTOR	R6,R60,R61	3
	00567045	RPC05T 151 J	MTL.FILM RESISTOR	R30	1

RESISTOR					
	00567178	RPC05T 152 J	MTL.FILM RESISTOR	R34	1
	00566912	RPC05T 220 J	MTL.FILM RESISTOR	R70	1
	00567067	RPC05T 221 J	MTL.FILM RESISTOR	R31	1
	00567190	RPC05T 222 J	MTL.FILM RESISTOR	R17,R32,R35,R69	4
	00567323	RPC05T 223 J	MTL.FILM RESISTOR	R12,R46,R48,R53,R57	5
	00567456	RPC05T 224 J	MTL.FILM RESISTOR	R58,R62	2
	00567212	RPC05T 332 J	MTL.FILM RESISTOR	R41	1
	00567345	RPC05T 333 J	MTL.FILM RESISTOR	R9,R13,R14,R67,R68,R71	6
	00567112	RPC05T 471 J	MTL.FILM RESISTOR	R29	1
	00567245	RPC05T 472 J	MTL.FILM RESISTOR	R16	1
	00567378	RPC05T 473 J	MTL.FILM RESISTOR	R4,R8,R11,R15,R33,R50,R56	7
	00567123	RPC05T 561 J	MTL.FILM RESISTOR	R66	1
POTENTIOMETER					
#	F5429102	RH03ADC13X 1KB	TRIMMER	RT1	1
#	F5429103	RH03ADC4X 47KB	TRIMMER	RT2	1
	13289126	RK0971110 10KA 15MM	POTENTIOMETER	VR3	1
	13279869	RK0971110 50KB	POTENTIOMETER	VR1,VR2	2
CAPACITOR					
#	F5359811	GRM39B183K50PT	CHIP CAPACITOR(1608TYPE)	C39	1
	13639546M0	ECEA1CKA100B 10UF/16V	CHEMICAL CAPACITOR	C3,C10,C36-C38	5
	13639550M0	ECEA1CKA101B 100UF/16V	CHEMICAL CAPACITOR	C1	1
	13639549M0	ECEA1CKA470B	CHEMICAL CAPACITOR	C11,C24,C27,C46,C56	5
	13639602M0	ECEA1HKA010B UF 50V	CHEMICAL CAPACITOR	C43,C45,C49-C51	5
	13589330M0	ECQ-P1H151JZ	CHEMICAL CAPACITOR	C23	1
	13589319	ECQP2H471JZ	CHEMICAL CAPACITOR	C33	1
	01674701	ECJ1VF1E104Z 0.1UF/16VK	CERAMIC CAPACITOR(CHIP)	C25,C26,C28,C29,C52-C55	8
	01674612	ECJ1VB1H103K	CERAMIC CAPACITOR	C18	1
	01674478	ECJ1VB1H1122K	CERAMIC CAPACITOR	C15	1
	01674523	ECJ1VB1H272K	CERAMIC CAPACITOR	C9,C16,C30,C40,C44	5
	01674556	ECJ1VB1H472K	CERAMIC CAPACITOR	C2,C6,C31	3
	01674578	ECJ1VB1H682K	CERAMIC CAPACITOR	C12,C32	2
	01674689	ECJ1VF1H473Z	CERAMIC CAPACITOR	C5,C47,C48	3
	01674334	ECUV1H101JCV	CERAMIC CAPACITOR	C7,C42	2
	01674356	ECUV1H151JCV	CERAMIC CAPACITOR	C13	1
	01674212	ECUV1H220JCV	CERAMIC CAPACITOR	C22	1
	01674389	ECUV1H221JCV	CERAMIC CAPACITOR	C41	1
	01674234	ECUV1H330JCV	CERAMIC CAPACITOR	C4,C8	2
	01674423	ECUV1H471JCV	CERAMIC CAPACITOR	C35	1
	01674445	ECUV1H681JCV	CERAMIC CAPACITOR	C20	1
	13619706N0	DN1VR68KIS 0.68UF/35V	CAPACITOR (TANTALUM)	C14,C34	2
	13589312	330P	CAPACITOR	C17	1
INDUCTOR,COIL,FILTER					
	13529145	DSS306-55FZ103N	EMI FILTER	EM11	1
WIRING,CABLE					
#	23477336	FLAT CABLE	4P-80X10X10 P=2.5		1
#	23477337	FLAT CABLE	3P-160X10X10 P=2.5		1
#	G3477157	FLAT CABLE	3P-130X10X10 P=2.5		1
SCREWS					
	H5029820	SCREW M3X10	THUMB SCREW		1
	H5029325	SCREW 3X6	PAN HEAD TAPTITE-2 BZC		4
	H5039205	WASHER 12.5X9.5X0.5/0.9	INTERNAL TOOTH FENI		3
	H5039510	NUT M9X12X2	FENI		3
	H5029317UC	SCREW 3X6MM	BINDING TAPPING B1 FECM		1
	H501941301	SCREW 3X10MM	BINDING MACHINE FEBC		2
	40125134	NYLON WASHER 3X6X0.5			2
	H5039112	WASHER M9			3
	40010267	SCREWF M3X10	BINDING FE BZC		2
	40010901	SCREWF M3X6	BINDING BI BZC		4
PACKING					
#	C2627738	INNER BOX			1
#	2260714803	PACKING CASE			1
MISCELLANEOUS					
	G253751603	BOTTOM CAUTION PSA	FCC/CE/C-TICK/EMC GRY		1
	H5319102	INSULOK TIE	80M/M T-18S		1
	2226733300	CUSHION	267-333		1
	2253753801	PSA CAUTION	253-538		1
	2215770201	PEDAL GUIDE BUSH	215-702		1

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**MISCELLANEOUS**

2217710900	COIL SPRING	214-109	1
23410414	BATTERY CONNECTOR	(006P)	1
22257257	EARTH TERMINAL		2
G2167301	INSULATION SPACER		1
H2369402	POLYCA PIPE M3X6X6		1

**ACCESSORIES (Standard)**

#	2603768603	OWNER'S MANUAL	JAPANESE	1
#	2603768702	OWNER'S MANUAL	ENGLISH	1
#	*****	DRY BATTERY		1

# ADJUSTMENTS

\* Adjusting the clock frequency for delay time.

**1.** Adjusting the high end of clock frequency (Adjusting the minimum delay time)

- a. Set the VR3(D.TIME knob) to the min (fully-ccw).
- b. Connect the oscilloscope to R26(1k ohm resistor) or pin 5 (or pin 6) of IC3 (HD14066BP).
- c. Adjust RT1 (1k $\Omega$  potentiometer) on MT BOARD for T=12.5 $\pm$ 0.5 $\mu$ S(Fig.1).

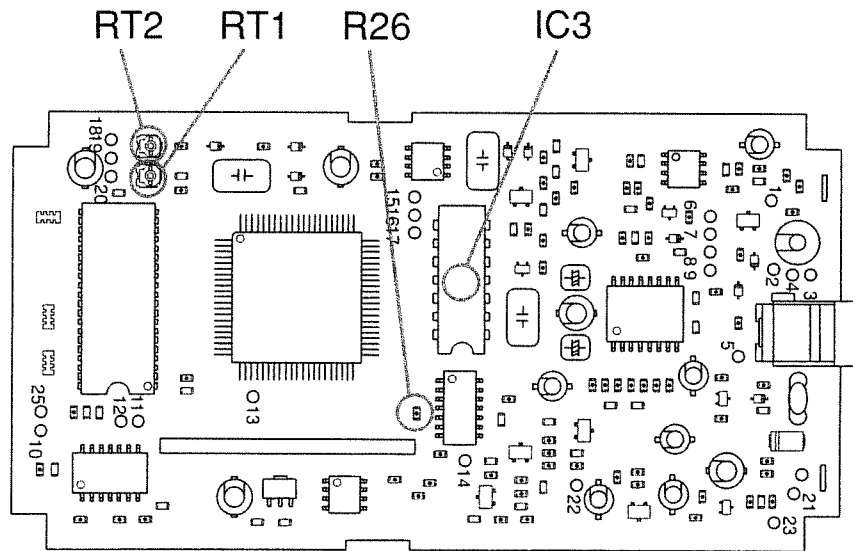
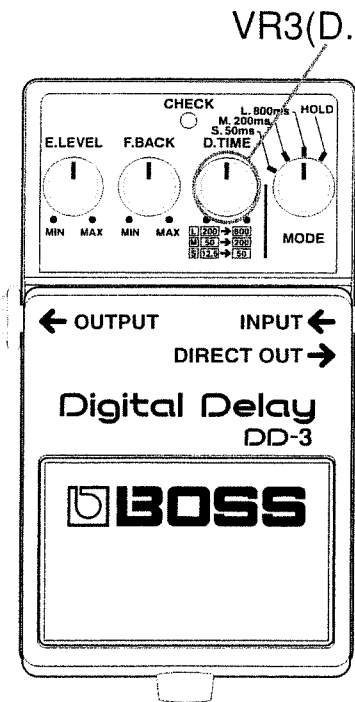
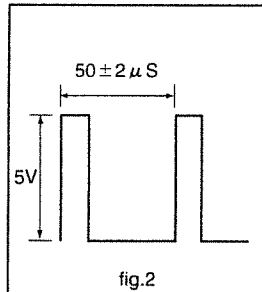
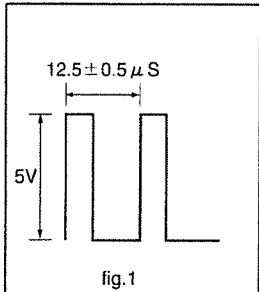
In some types of products, turning the RT1 continuously clockwise may once go outside the adjustable range and reenter there.

Therefore, at the start, turn the RT1 fully counter-clockwise, then slowly turn it clockwise.

When the adjustable range is reached, stop turning it, then begin adjustment.

**2.** Adjusting the high end of clock frequency (Adjusting the minimum delay time)

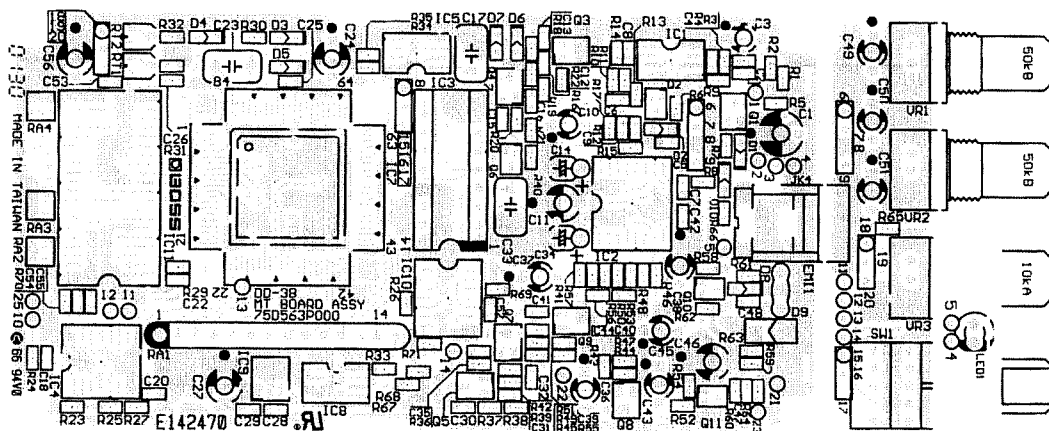
- a. Set the VR3(D.TIME knob) to the max(fully-ccw).
- b. Connect the oscilloscope to R26(1k ohm resistor) or pin 5 (or pin 6) of IC3 (HD14066BP).
- c. Adjust RT2 (47k $\Omega$  potentiometer) on MT BOARD for T=50 $\pm$ 2 $\mu$ S(Fig.2).



MAIN BOARD  
View from part side



# CIRCUIT BOARD

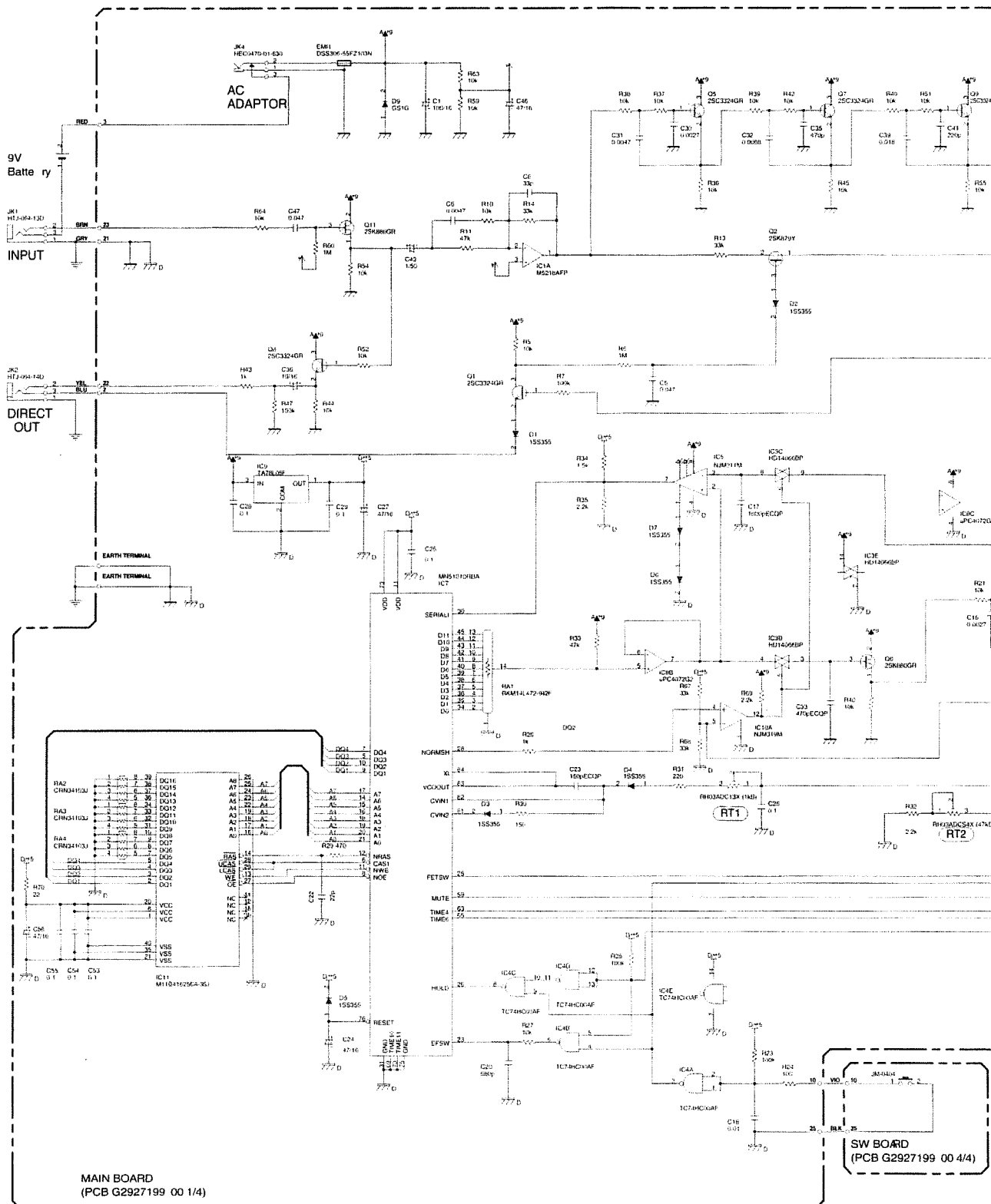


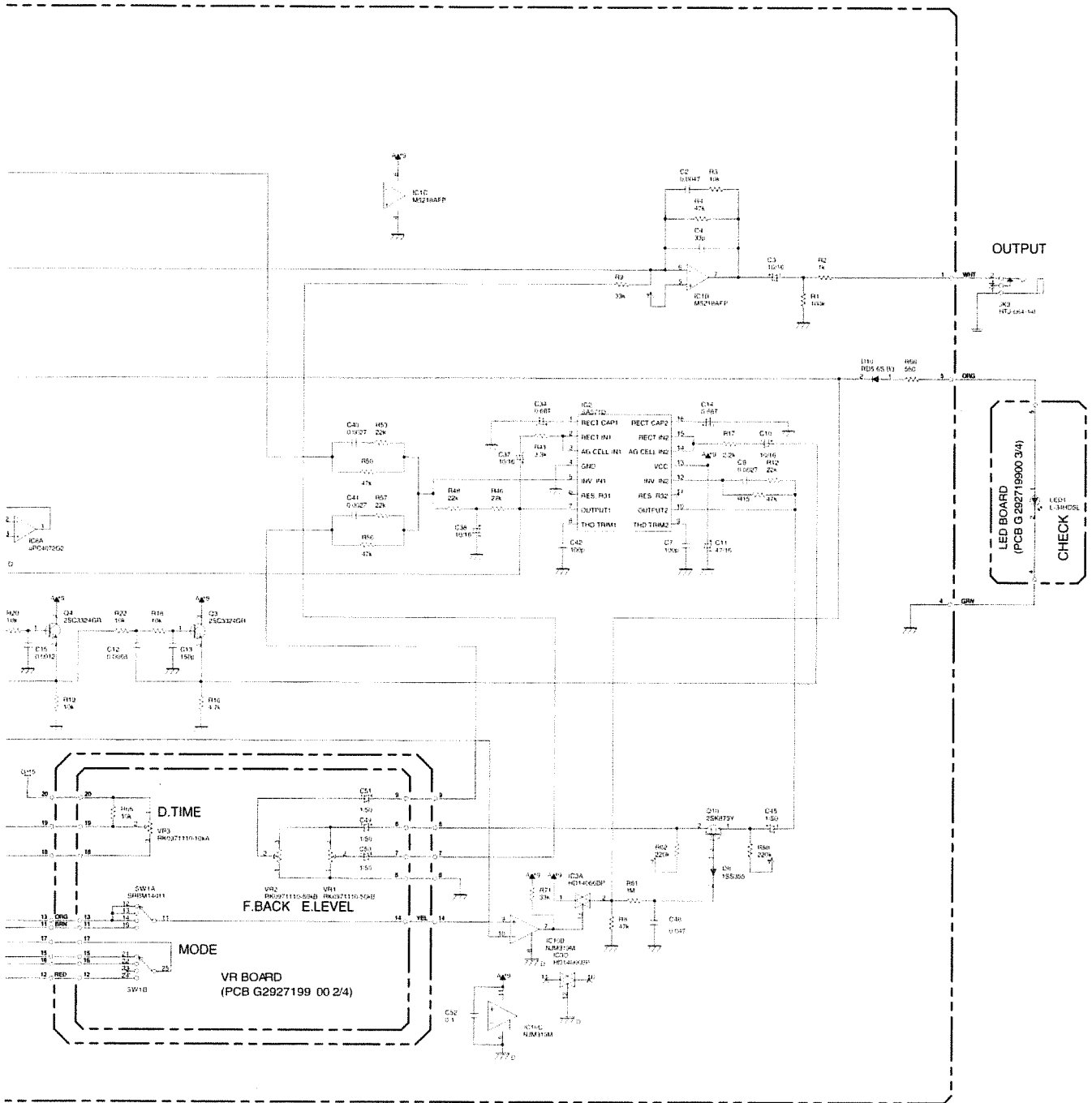
View from component side



View from foil side

# CIRCUIT DIAGRAM



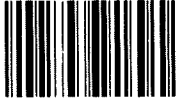


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