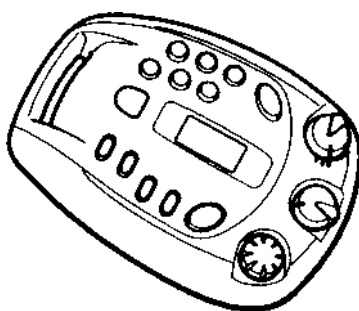




SERVICE MANUAL

STEREO
RADIO RECEIVER

SPECIFICATIONS

Frequency range	AM: 530 – 1,710 kHz (10 kHz step) FM: 87.5 – 108.1 MHz (200 kHz step) TV: 2 ch – 13 ch WB (Weather band): 1 ch – 7 ch
Output	10 mW + 10 mW (EIAJ 16 ohms)
Power supply	DC 3 V using two size AAA (R03) batteries
Exercise settings	Setting mode: Walking or Jogging Weight: 40 lb – 450 lb Stride: 10 in. – 100 in.
Exercise calculating	Distance: 0 mile – 999.9 miles Output energy: 0 kcal – 9999 kcal
Battery life (EIAJ 1 mW)	Approx. 13 hours for FM reception Approx. 20 hours for AM reception
Maximum dimensions	108 (W) × 78 (H) × 44.2 (D) mm (4 ³ / ₈ × 3 ¹ / ₈ × 1 ³ / ₄ in.)
Weight	Approx. 120 g, 4.2 oz excluding batteries

- Design and specifications are subject to change without notice.

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S7-R10-120-000		CLIP BELT
2	S0-100-270-000		HP, SET HP-M027
3	S8-RC7-910-600		INSTRUC, BOOK(CRSP66YU, 3L, C)

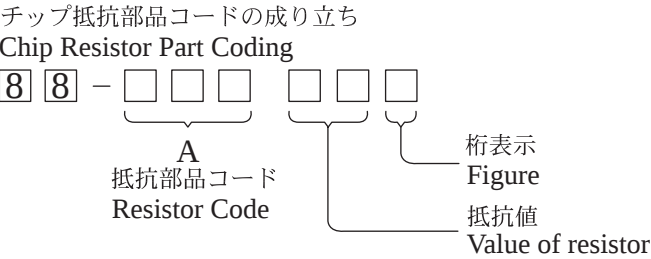
ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

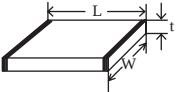
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				D3	87-A40-517-040		C-DIODE, SVC208
	87-001-149-080	IC, TA8158F		HP1	S0-130-020-000		PHONE JACK LGY3002-0350C
	87-A20-851-040	IC, TA2111FN		L1	87-A50-375-010		INDUCTOR 1UH 2.3-3.4
	88-RH1-601-010	IC, TC-9318FB-029		L2	87-A50-375-010		INDUCTOR 1UH 2.3-3.4
	87-017-642-080	IC, CXA1622M		L3	87-A50-375-010		INDUCTOR 1UH 2.3-3.4
TRANSISTOR				L5	87-005-722-080		INDUCTION 2.2UH
	89-327-124-080	C-TR, 2SC2712Y		L7	S0-311-927-410		ANT COIL ASSY BAR 5-8-50
	87-026-230-010	C-TR, DTA114YK		L11	87-A50-375-010		INDUCTOR 1UH 2.3-3.4
	87-026-263-080	C-TR, RN1410		L12	87-005-696-080		COIL, 100UH
	89-327-143-010	C-TR, 2SC2714Y		SW1	S1-220-211-000		SW, SLIDE 1P2T
	89-113-625-080	C-TR, 2SA1362Y					
				SW2	87-036-322-010		SW, SLIDE 2P3T
	87-026-211-080	C-TR, DTA144EK		T1	S8-398-250-550		IFT, 5.5MM
	87-026-210-080	C-TR, DTC144EK/EKA		T2	S8-425-550-050		AM IFT
	87-026-268-080	C-TR, RN2411		TC1	S1-000-200-010		CAP, TRIMMER ECRLA020E52 5.5-20
	87-026-213-080	C-TR, DTC114YKA		VR1	SA-082-033-010		RES, VARIABLE 20Kax2
	S9-011-800-180	TR, 2SK118R		FRONT C.B			
				C510	87-016-448-080		C-CAP, E 2.2-10V
				C516	87-010-044-080		CAP, E 47-4V
				L501	87-003-154-080		INDUCTOR 220UH
DIODE	87-020-339-080	C-DIODE, 1SS226		L502	87-005-730-080		INDUCTOR, 10UH
	87-A40-471-070	C-DIODE, KV1435		LCD501	S0-041-850-000		LCD-P-4D-0425SM020P
	87-A40-449-070	C-DIODE, 1SS268					
MAIN C.B				SW501	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	BPF1	87-A90-709-010	BAND PASS FILTER GTVSB3	SW502	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C16	87-010-498-080	CAP, E 10-16V	SW503	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C17	87-010-418-040	CAP, E 3.3-25V	SW504	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C18	87-010-418-040	CAP, E 3.3-25V	SW505	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C21	87-010-498-080	CAP, E 10-16V				
				SW506	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C23	87-016-350-040	CAP, E 470-4V	SW507	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C25	87-010-587-070	CAP, E 100-2V	SW508	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C26	87-010-499-040	CAP, E 22-6.3V	SW509	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C64	87-010-044-080	CAP, E 47-4V	SW510	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	C80	87-010-044-080	CAP, E 47-4V				
	CF1	S0-001-070-010	CER, FILTER	SW511	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	CF2	S0-001-070-010	CER, FILTER	SW512	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	CF3	S0-004-500-000	CER, FILTER SFU450	SW513	SS-KQN-AB0-000		SW, TACT SKQNAB0004
	CF4	S6-010-700-020	CER, RESO A10.7MG60-A	SW515	S1-220-211-000		SW, SLIDE 1P2T
	D2	87-A40-517-040	C-DIODE, SVC208	SW516	S1-220-211-000		SW, SLIDE 1P2T
				X501	S4-150-000-010		X'TAL, 75.0 KHZ

- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

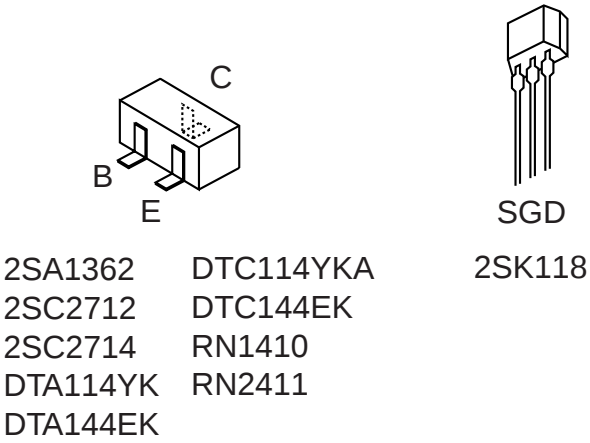
○チップ抵抗部品コード／CHIP RESISTOR PART CODE



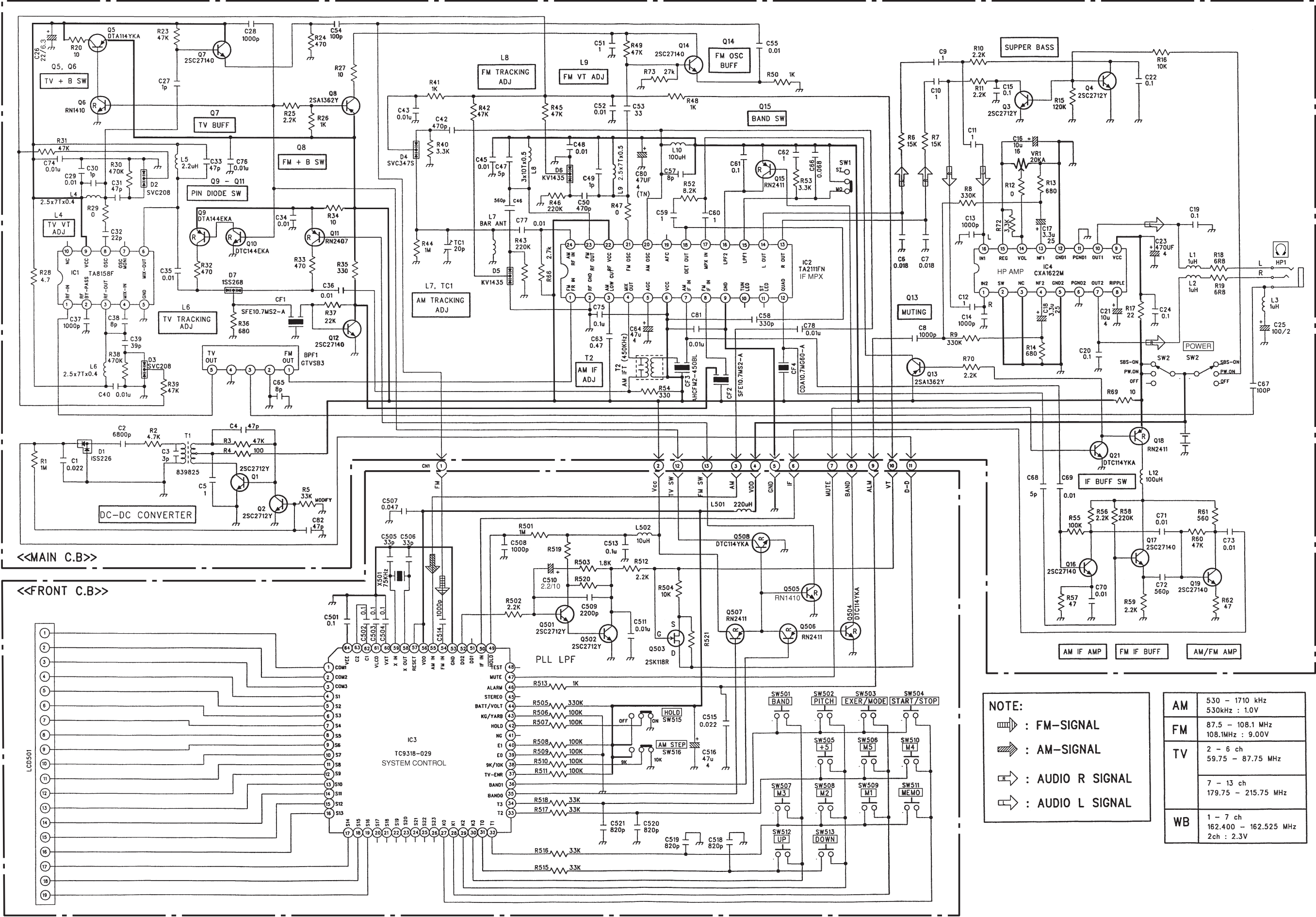
チップ抵抗
Chip resistor

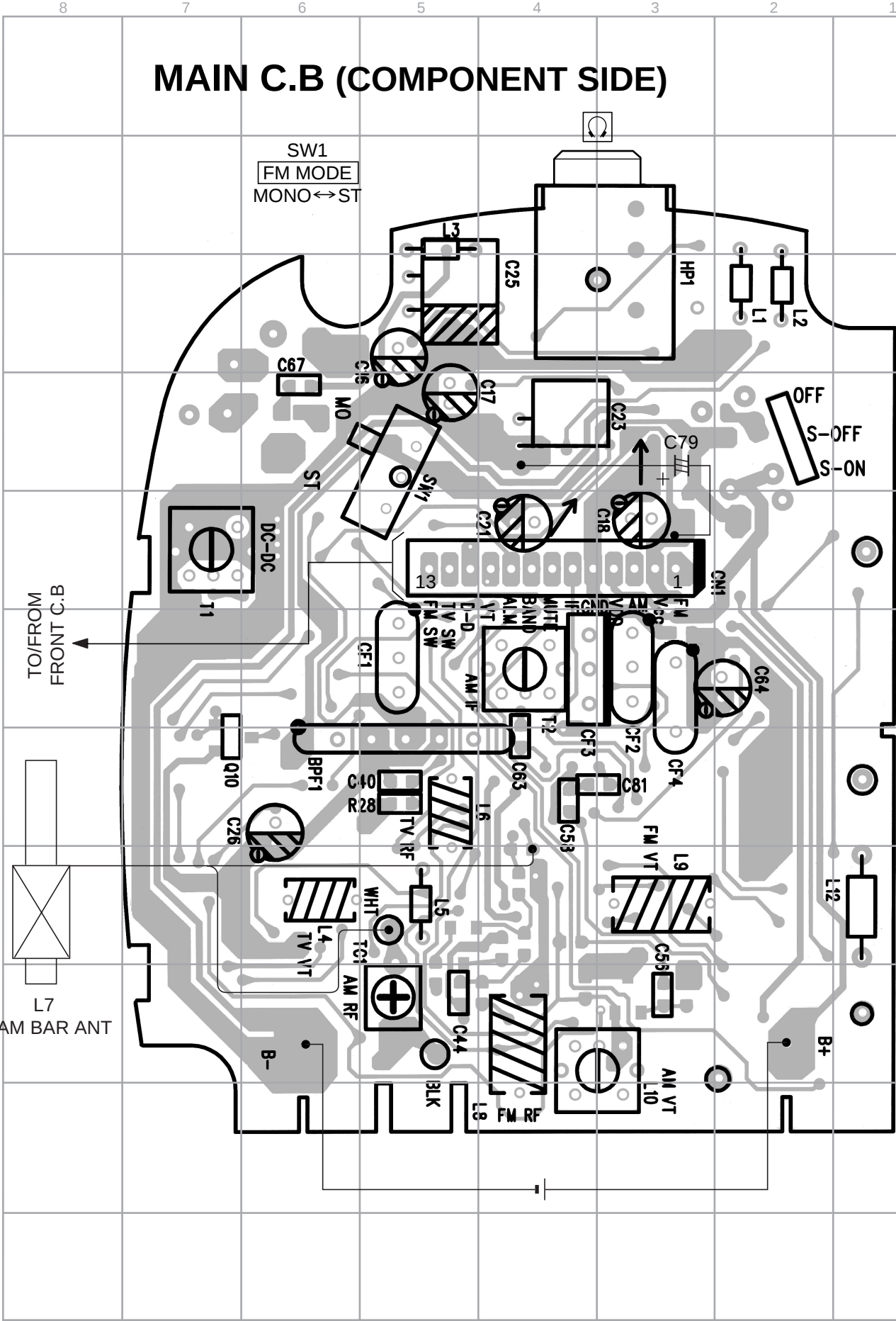
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code : A
				外形／Form	L	W	t	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



SCHEMATIC DIAGRAM

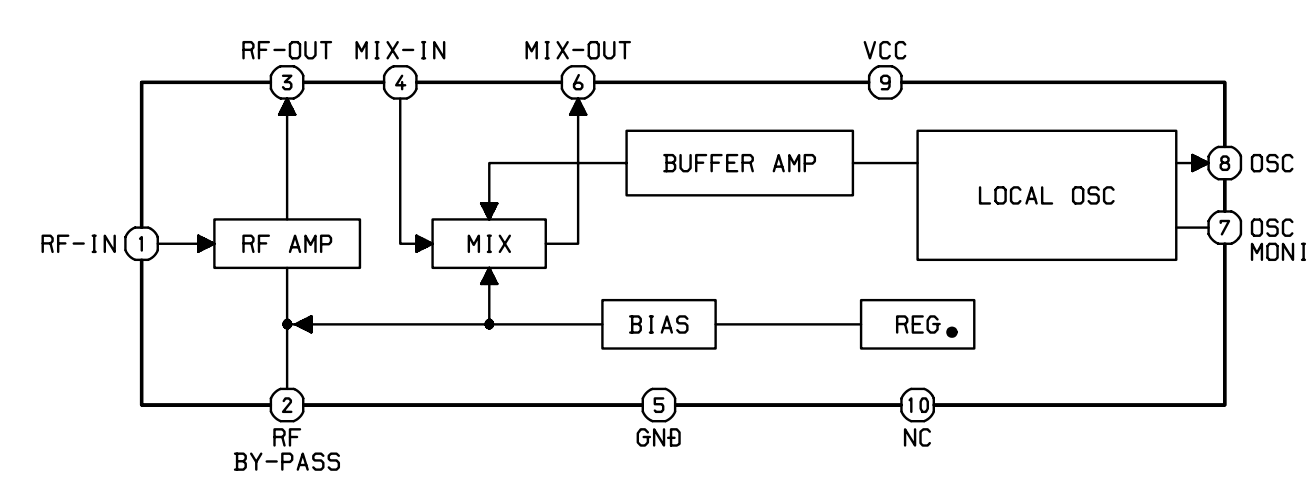




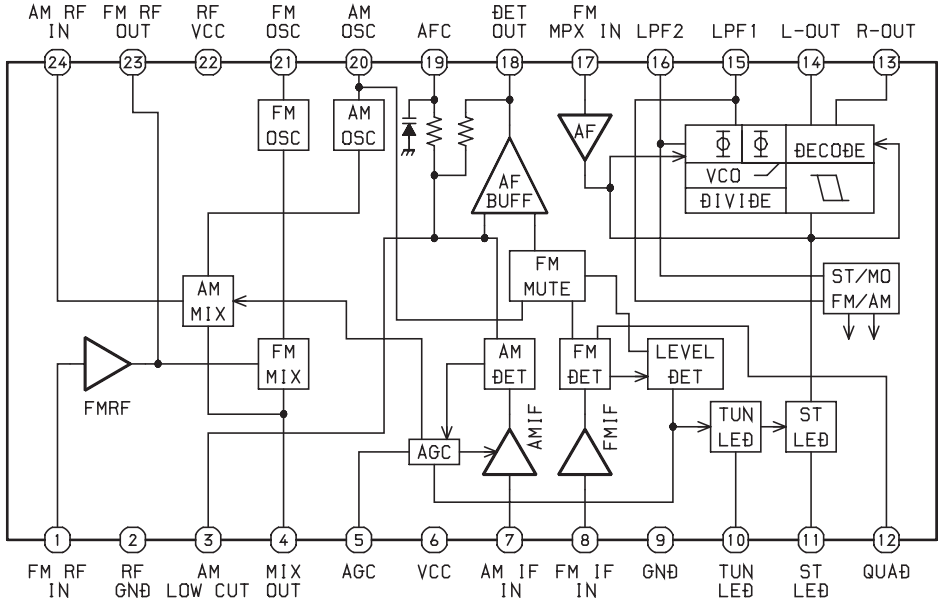
IC DESCRIPTION
IC, TC9318FB-029

Pin No.	Pin Name	I/O	Description				
1-3	COM1-3	O	Common signal outputs to the LCD panel.				
4-18	S1-15	O	Segment signal outputs to the LCD panel.				
19-26	S16/KR7-S23/KR0	O	Segment signal outputs/key return signal outputs to the LCD panel.				
27-30	K0-K3	I	4-bit inputs for key matrix.				
31-34	T0-T3	O	Timing signal outputs for key matrix.				
35	BAND 0	O	Band outputs.	Band		BAND 0	BAND 1
36	BAND 1			FM		L	H
			TV	WE	H	L	
			MW		L	L	
37	TV-ENA	I	H: TV band available, L: TV band not available.				
38	9K/10K	I	9K/10K switching input which selects the number of steps for the AM band. H: 9kHz, L: 10kHz.				
39	E0	I	Area inputs.	E0	E1	Area	* Do not care.
40	E1			0	0	Japan	
				0	1	USA	
				1	*	Europe	
41	NC	—	Not connected.				
42	HOLD	I	Key hold input.“L” input inhibits key inputs.				
43	KG/YARD	I	H: Meter KG system, L: Yard/pond/mile system.				
44	BATT/VOLT	I	Battery voltage detection.				
45	STEREO	I	Stereo input, “L” input causes the STEREO indicator to light in the LCD.				
46	ALARM	O	Alarm output.				
47	MUTE	O	Muting output.				
48	TEST	I	Test input.				
49	HOLD	I	Inhibits: controls the radio on/off.				
50	IFIN/IN	I	IF counter input.				
51	DO1/OT	O	PLL phase comparator outputs.				
52	DO2						
53	GND	—	Ground.				
54	FM IN	I	FM programmable counter input.				
55	AM IN	I	AM programmable counter input.				
56	VDD	—	Power supply.				
57	RESET	I	Device system reset signal input.				
58, 59	X OUT, X IN	O/I	For the connection of a 75kHz crystal oscillator.				
60	V XT	—	Power supply of the crystal oscillator. For the connection of a capacitor which stablizes the power supply.				
61	V LCD	—	For the connection of capacitors which double the voltage to drive the LCD.				
62, 63	C1, C2						
64	VEE	—	1.5V regulated power supply which drives the LCD. For the connection of a capacitor which stablizes the power supply.				

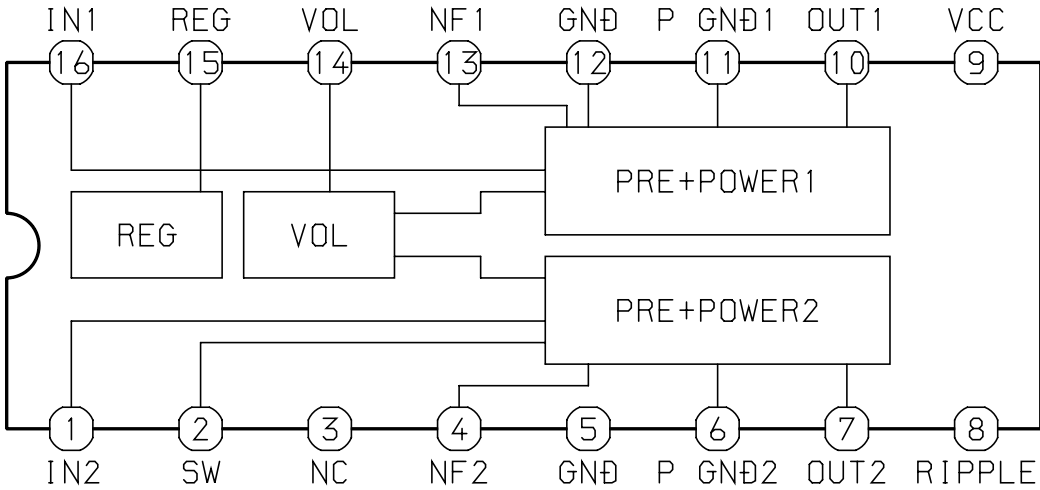
IC BLOCK DIAGRAM
IC, TA8158F



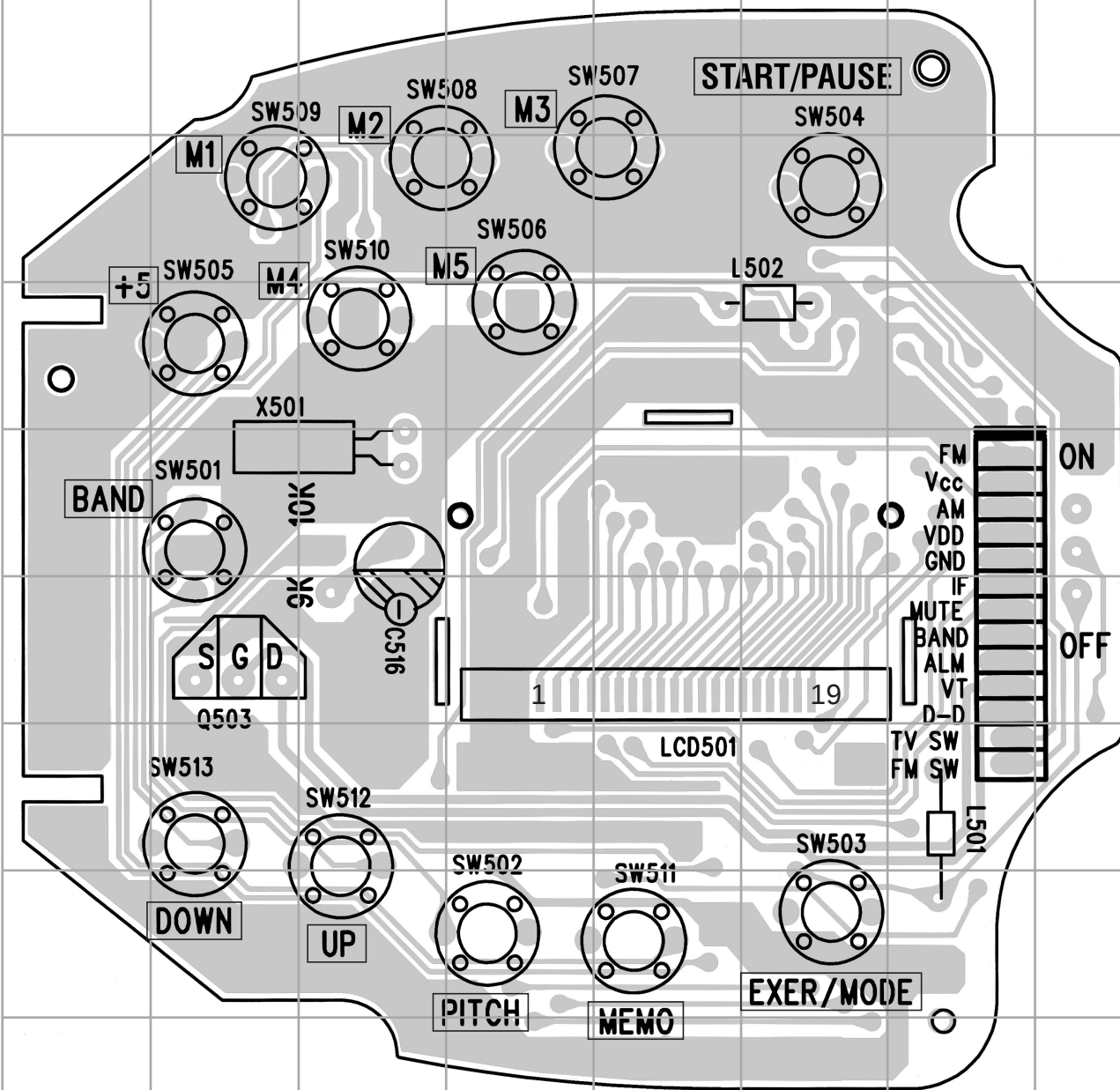
IC, TA2111FN



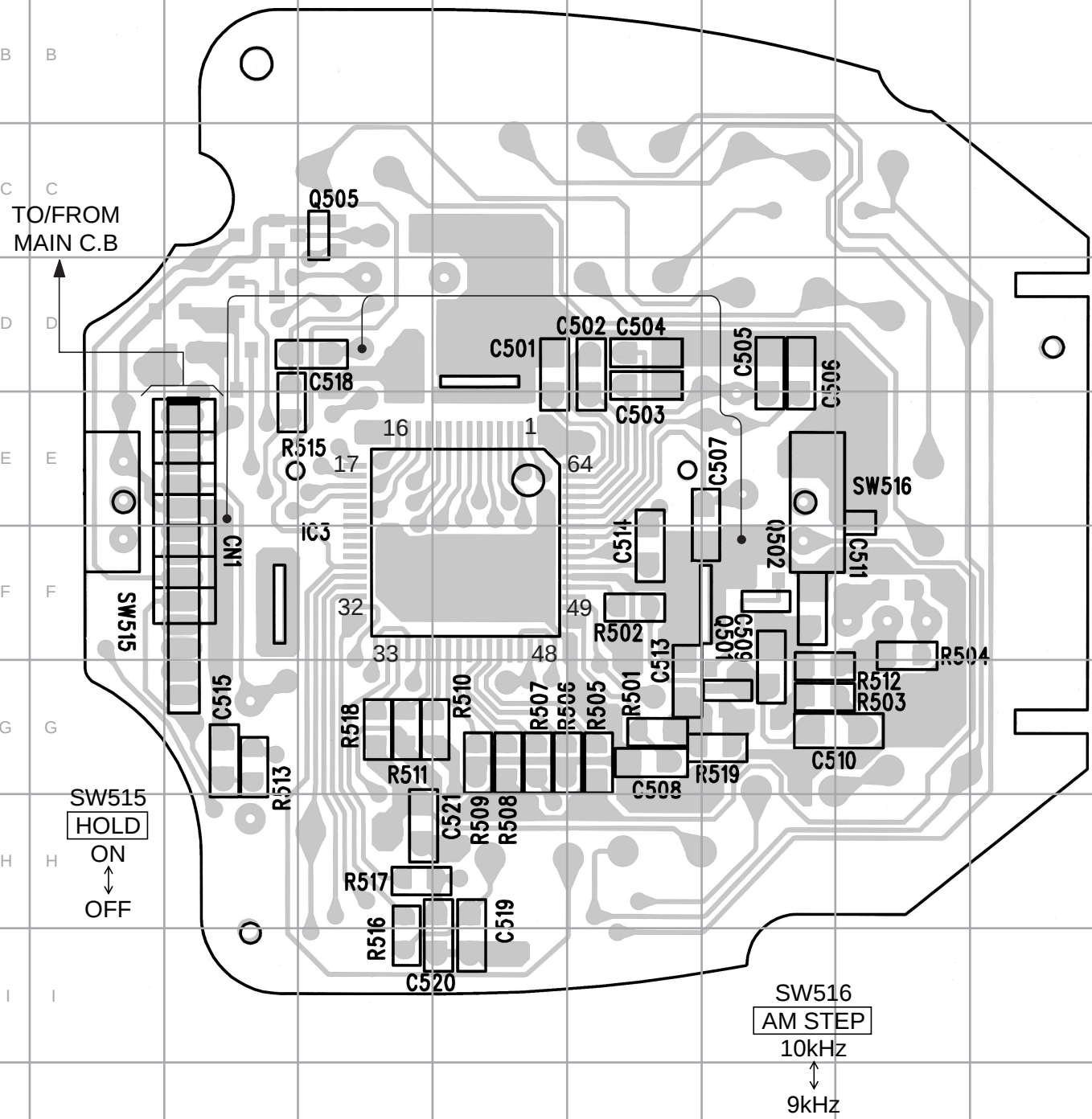
IC, CXA1622M



FRONT C.B (COMPONENT SIDE)



FRONT C.B (CONDUCTOR SIDE)



VOLTAGE CHART

THE MEASURED VALUE IS DC VOLTAGE
UNIT:V
TEST CONDITION:SET TUNER ON AM/FM ONE FREQUENCY

IC3 (TC9318-029)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	/	/	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	/	/	/	/	/	/	/	1.54	0	1.54	1.54	1.54
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	1.55	1.55	0	0	0	0	2.90	0	2.90	2.90	2.01	2.90
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	2.87	2.87	0	2.87	0	0	0	2.66	1.44	0	0	0
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
	2.45	1.55	1.62	1.00	0	1.46	0	2.90	2.90	0.27	0.71	1.38
PIN'S NUMBER	61	62	63	64								
	3.07	0.76	2.30	1.54								

TRANSISTOR	Q1(2SC2712)			Q2(2SC2712)		
	E	C	B	E	C	B
	0	2.61	0.59	0	0.59	0

TRANSISTOR	Q5(DTA114YKA)			Q6(RN1410)			Q7(2SC27140)		
	E	C	B	E	C	B	E	C	B
TV	2.98	0.32	2.96	0	2.96	0	0	0.34	0.26

TRANSISTOR	Q9(DTA144EKA)			Q10(DTC144EKA)		
	E	C	B	E	C	B
TV	2.78	0	2.75	0	2.75	0

TRANSISTOR	Q8(2SA1362Y)			Q11(RN2407)			Q12(2SC27140)		
	E	C	B	E	C	B	E	C	B
FM	2.98	2.98	2.31	2.77	2.74	0	0	0	0.74

TRANSISTOR	Q15(RN2411)		
	E	C	B
AM	2.98	0.39	2.96
FM	2.98	1.58	7.71
TV	2.98	1.90	4.25
WB	2.98	1.93	7.77

TRANSISTOR	Q501(2SC2712Y)			Q502(2SC2712Y)		
	E	C	B	E	C	B
AM	0	2.85	1.00	0	2.78	0.35
FM	0	2.79	0.99	0	6.91	0.57

TRANSISTOR	Q504(DTC114YKA)			Q505(DTC114YKA)			Q506(RN2411)		
	E	C	B	E	C	B	E	C	B
AM	0	0	2.75	0	0	2.79	2.79	2.75	2.02
FM	0	7.56	0	0	0	2.74	2.74	0	2.89

TRANSISTOR	Q507(RN2411)			Q508(DTC114YKA)		
	E	C	B	E	C	B
AM	2.85	2.79	2.06	0	0	2.79
FM	2.78	2.74	2.01	0	0	3

IC1 (TA8158F)

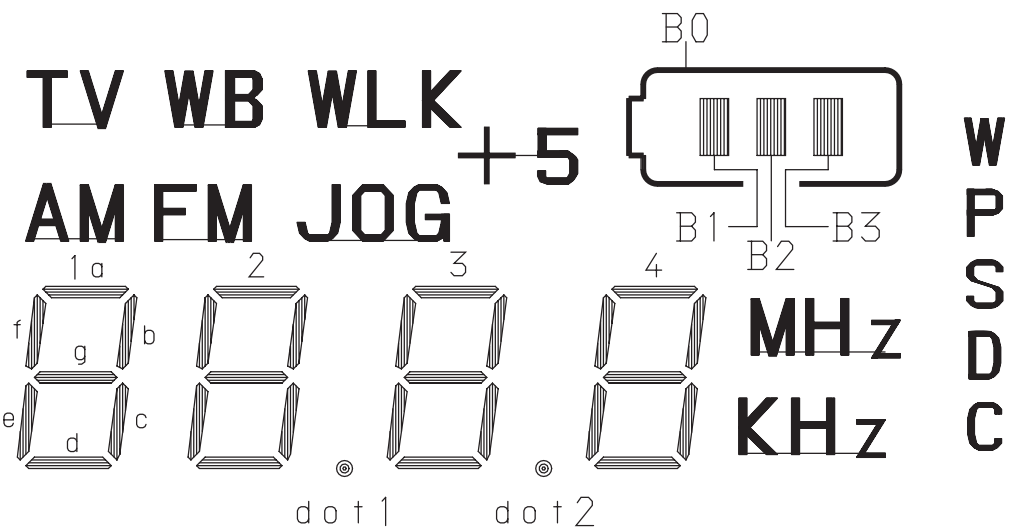
PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
TV	0	0	0.41	0	0	0.40	0.30	0.34	0.34	0

IC2 (TA2111FN)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
AM	0	0	1.19	2.83	0.50	2.86	2.18	2.86	0	0	0.73	2.37
FM	0.81	0	0.35	2.62	0.58	2.80	2.31	2.80	0	0	0	2.02
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
AM	1.23	1.21	2.15	2.99	0.71	1.03	1.17	2.86	2.86	2.86	2.86	2.86
FM	1.20	1.21	2.10	1.77	0.71	1.25	0.32	2.80	2.82	2.80	2.80	2.80

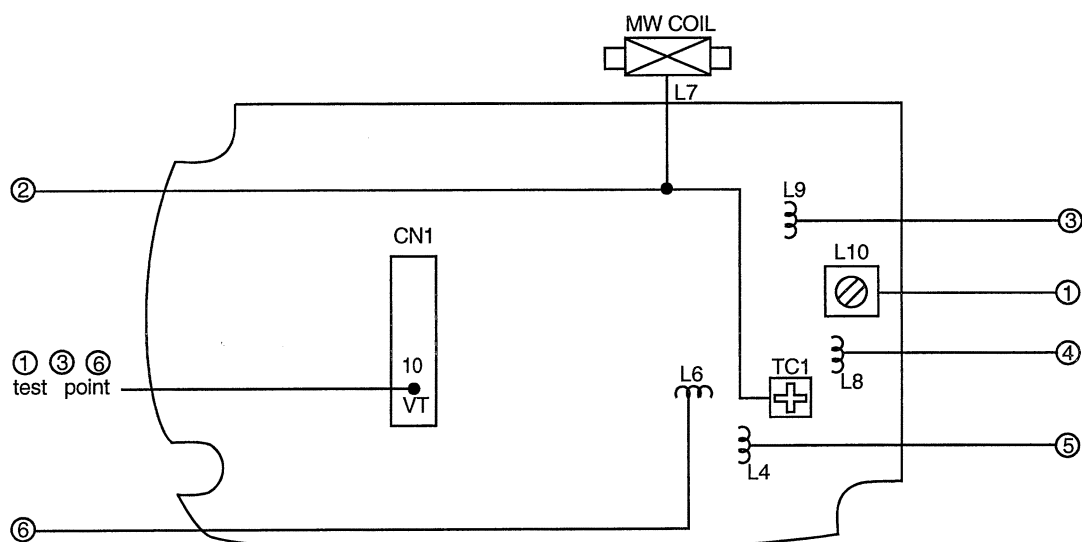
IC4 (CXA1622)

PIN'S NUMBER	1	2	3	4	5	6	7	8
	0	0	0	1.45	0	0	1.47	2.67
PIN'S NUMBER	9	10	11	12	13	14	15	16
	2.92	1.47	0	0	1.45	1.20	1.29	0

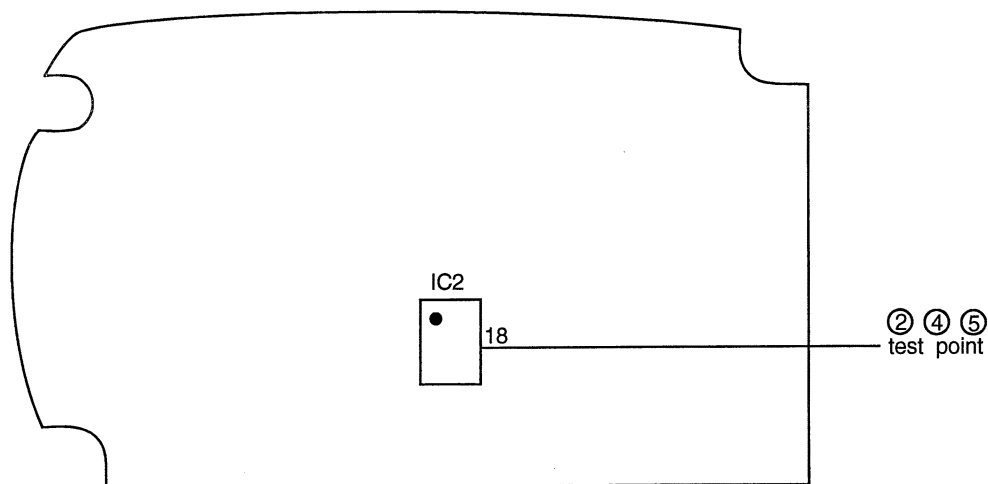


NO	COM1	COM2	COM3
1	COM1	—	—
2	—	COM2	—
3	—	—	COM3
4	FM	AM	WLK
5	B1	B2	B3
6	1 e	1 f	JOG
7	1 d	1 g	1 a
8	W	1 c	1 b
9	2 e	2 f	P
10	2 d	2 g	2 a
11	dot 1	2 c	2 b
12	3 e	3 f	S
13	3 d	3 g	3 a
14	dot 2	3 c	3 b
15	4 e	4 f	⊘
16	4 d	4 g	4 a
17	—	4 c	4 b
18	KHz	MHz	C
19	+5	—	B0
20	WB	TV	—

ELECTRICAL ADJUSTMENT



8RC7-01-03 TOP VIEW



8RC7-01-03 BOTTOM VIEW

1. AM Frequency Range Adjustment
Test point: CN1(VT)
Adjustment location: L10
Set tuner frequency to be 530KHz
Adjust L10 so that test point voltage is $1.25V \pm 0.05V$
2. AM Tracking Adjustment
Test point: IC2(TA2111FN) 18 Pin
Adjustment location: L7, TC1
L7 -----600KHz waveform max
TC1 -----1400KHz waveform max
3. FM Frequency Range Adjustment
Test point: CN1(VT)
Adjustment location: L9
Set tuner frequency to be 108.1MHz
Adjust L9 so that test point voltage is $9.0V \pm 0.05V$
4. FM Tracking Adjustment
Test point: IC2(TA2111FN) 18 Pin
Adjustment location: L8
L8 -----87.5MHz waveform max.
5. TV Frequency Range Adjustment
Test point: CN1(VT)
Adjustment location: L4
Set tuner frequency to be 59.75MHz(2ch)
Adjust L4 so that test point voltage is $2.3V \pm 0.05V$
6. TV Tracking Adjustment
Test point: IC2(TA2111FN) 18 Pin
Adjustment location: L6
L6 -----59.75MHz (2ch) waveform max.

PRACTICAL SERVICE FIGURE

< TUNER SECTION >

< FM SECTION >

Sensitivity: (THD 3%)	Less than 16dB (90/98/106MHz)
Distortion:	Less than 2% (98MHz)
Intermediate frequency:	10.7MHz
Stereo separation:	More than 20dB

< AM SECTION >

Sensitivity:	Less than 54dB (600kHz)
(S/N 10dB)	Less than 51dB (1000/1400kHz)
Signal to Noise Ratio: (Input 74dB)	More than 25dB (600/1000/1400kHz)
Distortion: (Input 100dB)	Less than 3% (1000kHz)
Intermediate frequency:	450kHz

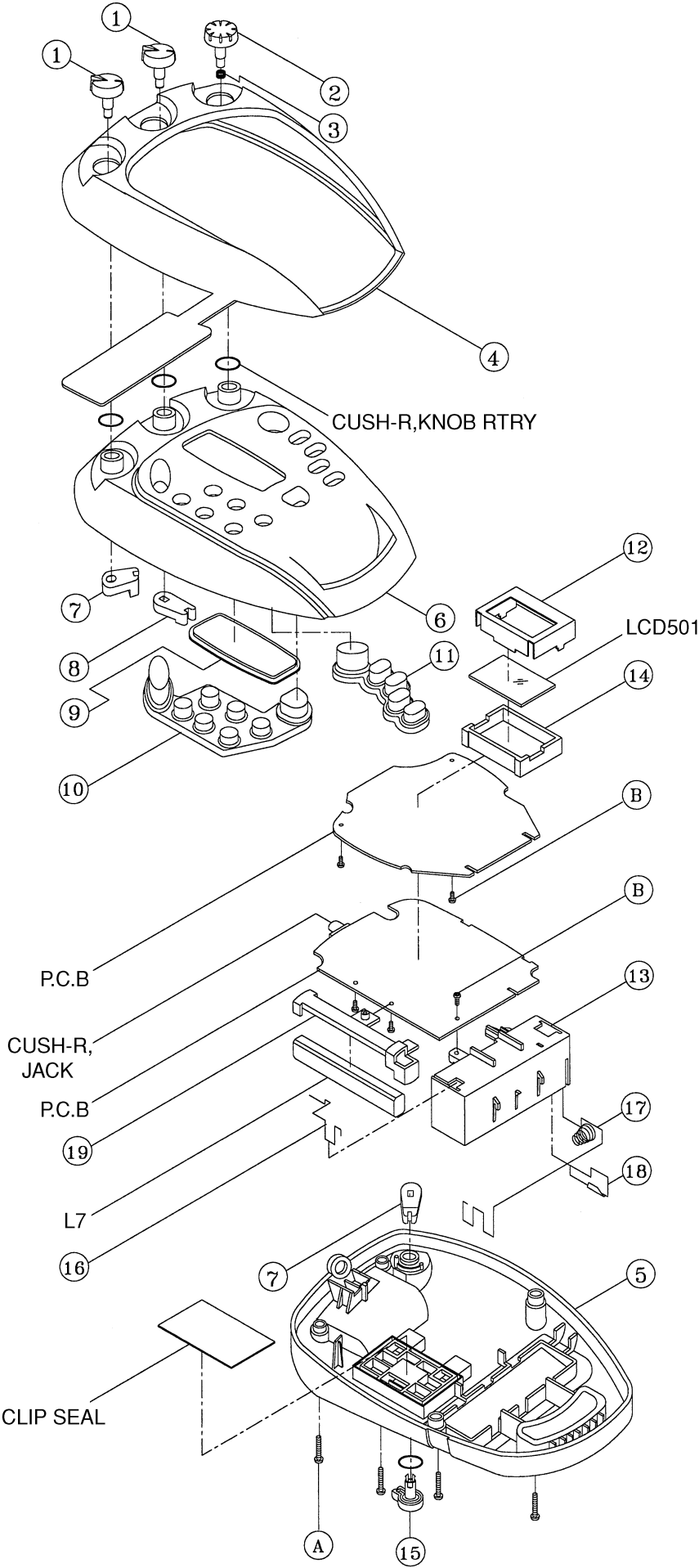
< TV SECTION >

Sensitivity: (THD 3%)	Less than 20dB (2/8/13ch)
Distortion:	Less than 2% (8ch)
Intermediate frequency:	10.7MHz

< WB SECTION >

Sensitivity: (THD 3%)	Less than 22dB (6ch)
Distortion:	Less than 2% (6ch)
Intermediate frequency:	10.7MHz

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-RC7-050-000		KNOB,RTRY POWER GRY
2	S8-RC7-060-000		KNOB,RTRY VOLUME
3	S7-R10-370-000		KNOB,SPR-C VOL
4	S8-RC7-030-100		FRONT COVER(YU)
5	S8-RC7-020-300		CAB,REAR(CRSP66YU)
6	S8-RC7-010-200		CAB,FRONT(CRSP66YU)
7	S8-RC7-140-000		KNOB,RTRY ARM
8	S8-RC7-110-000		HOLDER KNOB RTRY ARM
9	S8-RC7-040-100		LCD WINDOW
10	S8-RC7-080-100		KEY,PRESET
11	S8-RC7-090-100		KEY,FUNCTION
12	S8-RC7-150-000		LCD COVER
13	S8-RC7-130-000		BATT HOLDER
14	S8-RC7-100-000		LCD HOLDER
15	S8-RC7-070-000		KNOB,RTRY ST/MO
16	S8-RC7-160-000		BATT CONTACT(+)
17	S8-RC7-180-000		BATT CONTACT(+/-)
18	S8-RC7-250-000		BATT CONTACT(-)
19	S7-R10-110-000		HOLDER BAR ANT
A	S0-502-001-210		SCREW,ST2-12
B	87-261-531-310		SCREW,1.7-5 PB

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		



サービス技術ニュース	
番号	連絡内容
Gー ー	
Gー ー	
Gー ー	

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111（代表）
AIWA CO.,LTD. 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111