

**STAGE PIANO**  
**MP4**

**Service Manual**

Manufacturing Date April 2005

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**KAWAI** Kawai Musical Instruments  
Manufacturing Co., Ltd.

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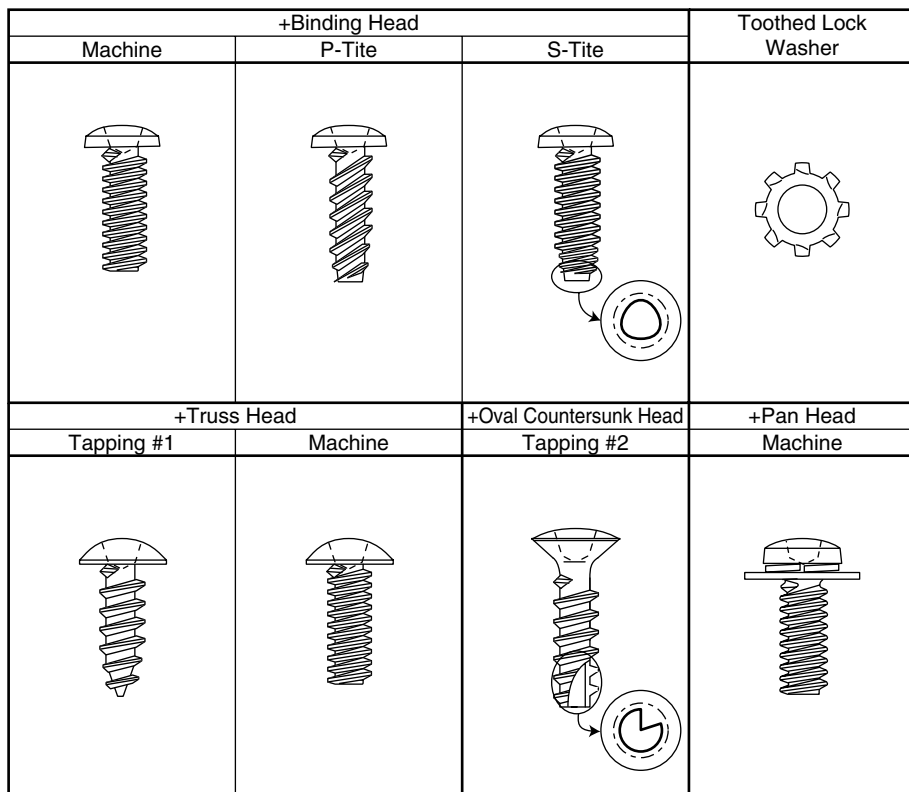
## ■ Specifications

Keyboard	88 Keys with Advanced Hammer Action IV
Max. Polyphony	96 Voices
Sound	Harmonic Imaging Technology. 64 Sounds. Piano (8), E. Piano (12), Mallet (2), Clavi (2), Organ (2), Harpsicord (1), Drawbar (13), Strings (4), Brass (4), Vocal (3), Pad (5), Bass (8).
Setup	64 Setup Memories
EQ	4 Band ( $\pm$ 12dB)
Reverb	Hall 1, Hall 2, Stage 1, Stage 2, Room 1, Room 2, Plate
Effects	Chorus, Flanger, Celeste, Ensemble, Delay 1, Delay 2, Delay 3, Delay 4, Auto Pan 1, Auto Pan 2, Tremolo 1, Tremolo 2, Phaser 1, Phaser 2, Rotary 1, Rotary 2, Auto Wah, Pedal Wah, Enhancer, Overdrive
SW	Panel Lock (On/Off), Touch Curve (On/Off), Rotary Speed (Slow/Fast), EQ Bypass (On/Off)
(Assignable function)	Wheel Lock (On/Off), FSW Lock (On/Off), EXP Lock (On/Off), External Seq. (On/Off)
Display	16 Character x 2 line; Backlit LCD
Wheels	Pitch Bend, Modulation
Sliders	Master Volume, 4 Zone Volumes
Knob Control	4 Knobs
Effect	EFX rate, EFX depth, REV time, REV depth
EQ	Lo, Mid Lo, Mid Hi, Hi
Tone Modify	Cutoff, Attack, Decay, Release
MIDI CC#	A, B, C, D (assignable) [External] CC# 0~119 [Internal] Pan, Expression, Sustain, Resonance, Vib rate, Vib depth, Vib delay, Chorus depth
Pedal Sockets	Damper/Soft Pedal, Footswitch (assignable), Expression (assignable)
Zone	4 Zones
Zone Modes	Internal, External, Both (Internal + External)
Menu Parameters	8 Sections Edit
Common	Master Volume, Expression CC#, Footswitch CC#, Temperament (7 Historical + User), Stretch Sound Select (TX Ch/Bank#/PC#), Pedal Effect, Voicing, Key Range Hi, Key Range Lo Velocity SW, Velocity Comp./Offset, Zone Transpose, Volume, Pan, Fine Tune, Damper (On/Off), Foot SW (On/Off), Exp Pedal (On/Off), Modulation (On/Off), Bender (On/Off), Bender Range, Solo (On/Off), Solo Mode
Section	
Setup Data Dump	Current, All
Metronome	Tempo, Volume
Touch Curves	Heavy+, Heavy, Normal, Light, Light+, Off, User 1, User 2
LED Brightness	Hi, Lo
Output Modes	Stereo, 2 x Mono
Sockets	Output (L/Mono, R), Headphones, MIDI (In, Out, Thru), USB (MIDI interface)
Dimensions	136 x 34 x 17 cm (53" x 13" x 7")
Weight	20.5kg (45 lbs.)
Power Supply	AC in
Accessories	Music Rack, Power Cable, Damper Pedal (F-1r), Owner's Manual

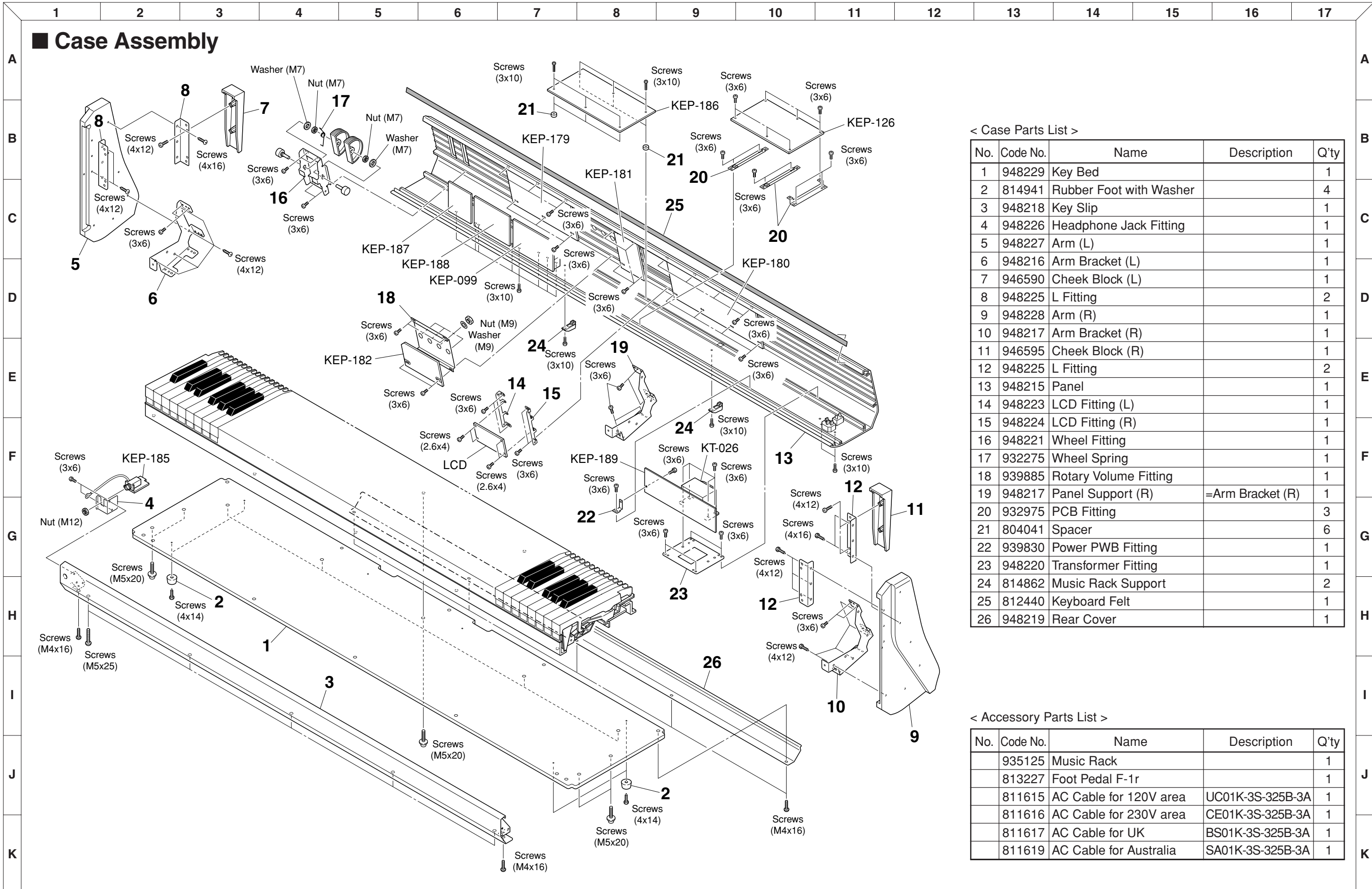
\* Specifications are subject to change without notice.

## ■ Hardware List

No.	Type	Size	Remarks
1	+Binding Head Machine Screw	M2.6 x 4	
2	+Binding Head/S-Tite	3 x 6, 8/4 x 8	
3	+Binding Head/S-Tite	3 x 10	Black Chromating
4	+Binding Head/P-Tite	3 x 6/4 x12	
5	+Binding Head/P-Tite	3 x 10	Black Chromating
6	+Truss Head Tapping #1	4 x 12, 16	
7	+Truss Head Tapping #1	4 x 14	Black Chromating
8	+Truss Head Machine Screw	M4 x 16/M5 x 25	Black Chromating
9	+Pan Head Machine Screw	M5 x 20	w/Washers
10	+Oval Countersunk Head/Tapping #2 Scrape Point	3 x 10	Black Chromating
11	Plain Washer	M7/M9	
12	Toothed Lock Washer	M4	
13	Volume Nut	M9	
14	Volume Nut	M12	
15	Hexagon Nut	M7	



# Case Assembly



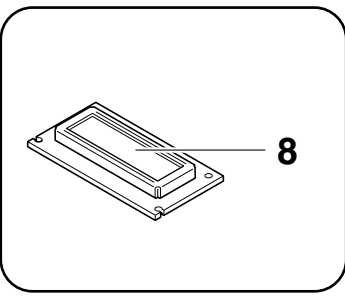
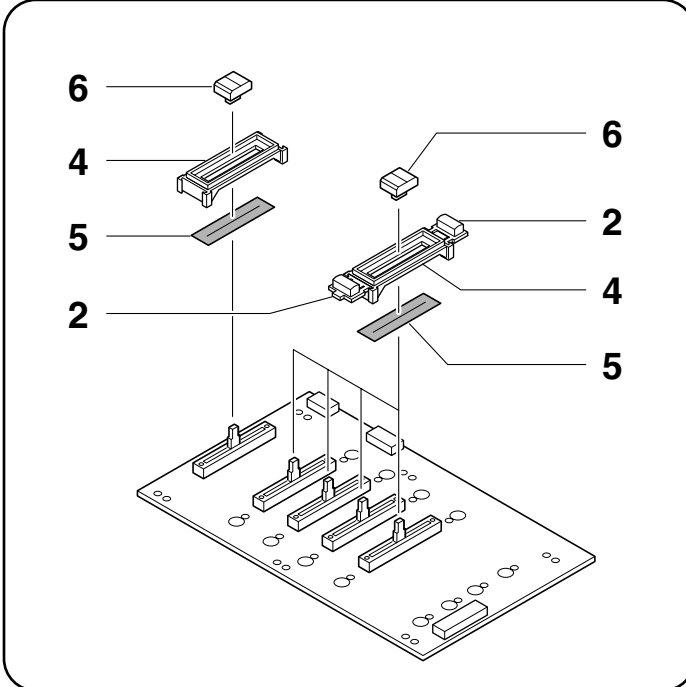
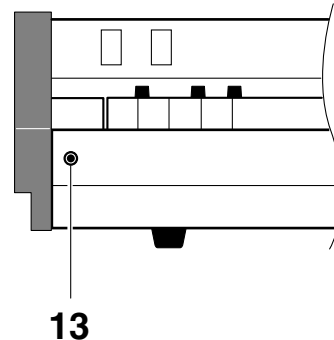
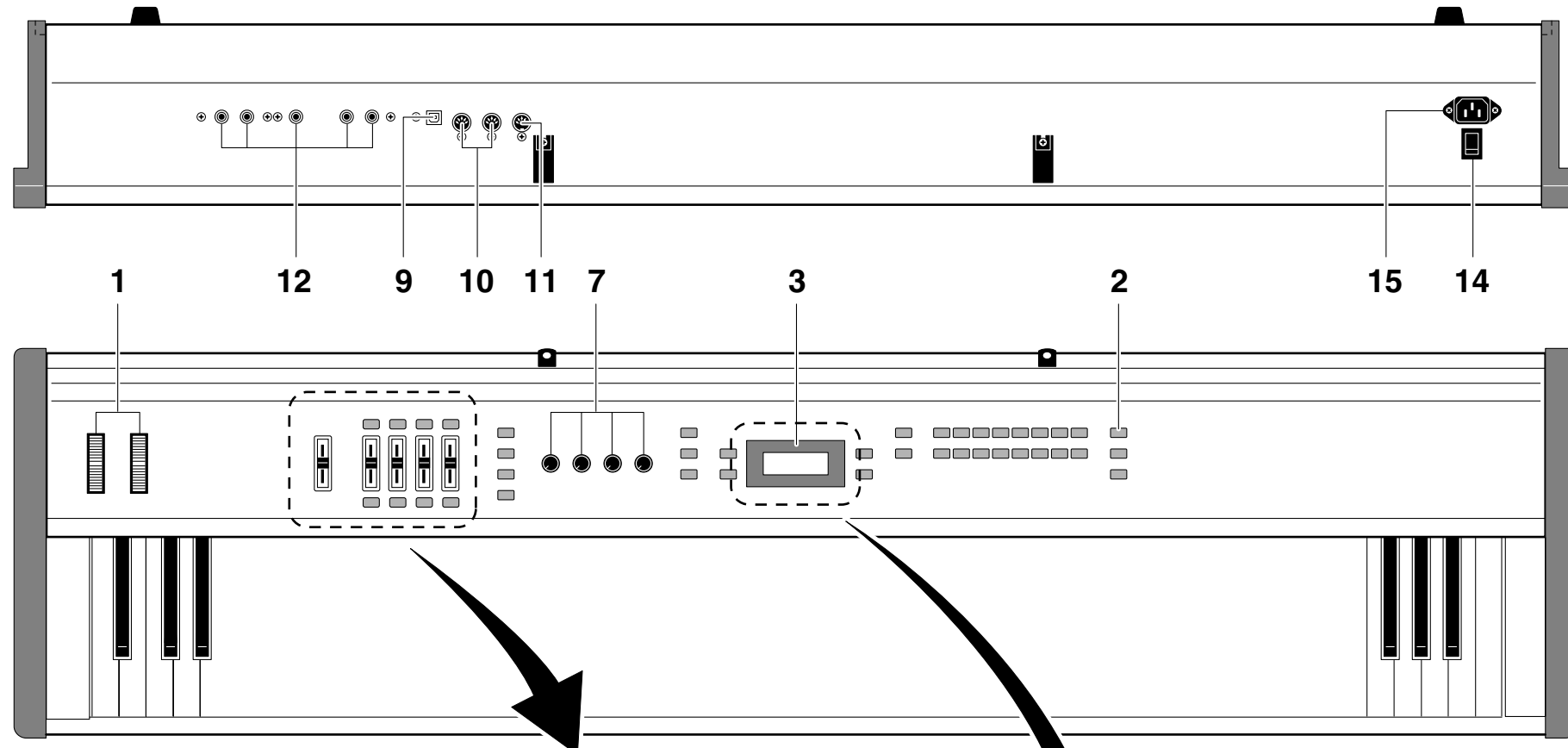
< Case Parts List >

No.	Code No.	Name	Description	Q'ty
1	948229	Key Bed		1
2	814941	Rubber Foot with Washer		4
3	948218	Key Slip		1
4	948226	Headphone Jack Fitting		1
5	948227	Arm (L)		1
6	948216	Arm Bracket (L)		1
7	946590	Cheek Block (L)		1
8	948225	L Fitting		2
9	948228	Arm (R)		1
10	948217	Arm Bracket (R)		1
11	946595	Cheek Block (R)		1
12	948225	L Fitting		2
13	948215	Panel		1
14	948223	LCD Fitting (L)		1
15	948224	LCD Fitting (R)		1
16	948221	Wheel Fitting		1
17	932275	Wheel Spring		1
18	939885	Rotary Volume Fitting		1
19	948217	Panel Support (R)	=Arm Bracket (R)	1
20	932975	PCB Fitting		3
21	804041	Spacer		6
22	939830	Power PWB Fitting		1
23	948220	Transformer Fitting		1
24	814862	Music Rack Support		2
25	812440	Keyboard Felt		1
26	948219	Rear Cover		1

< Accessory Parts List >

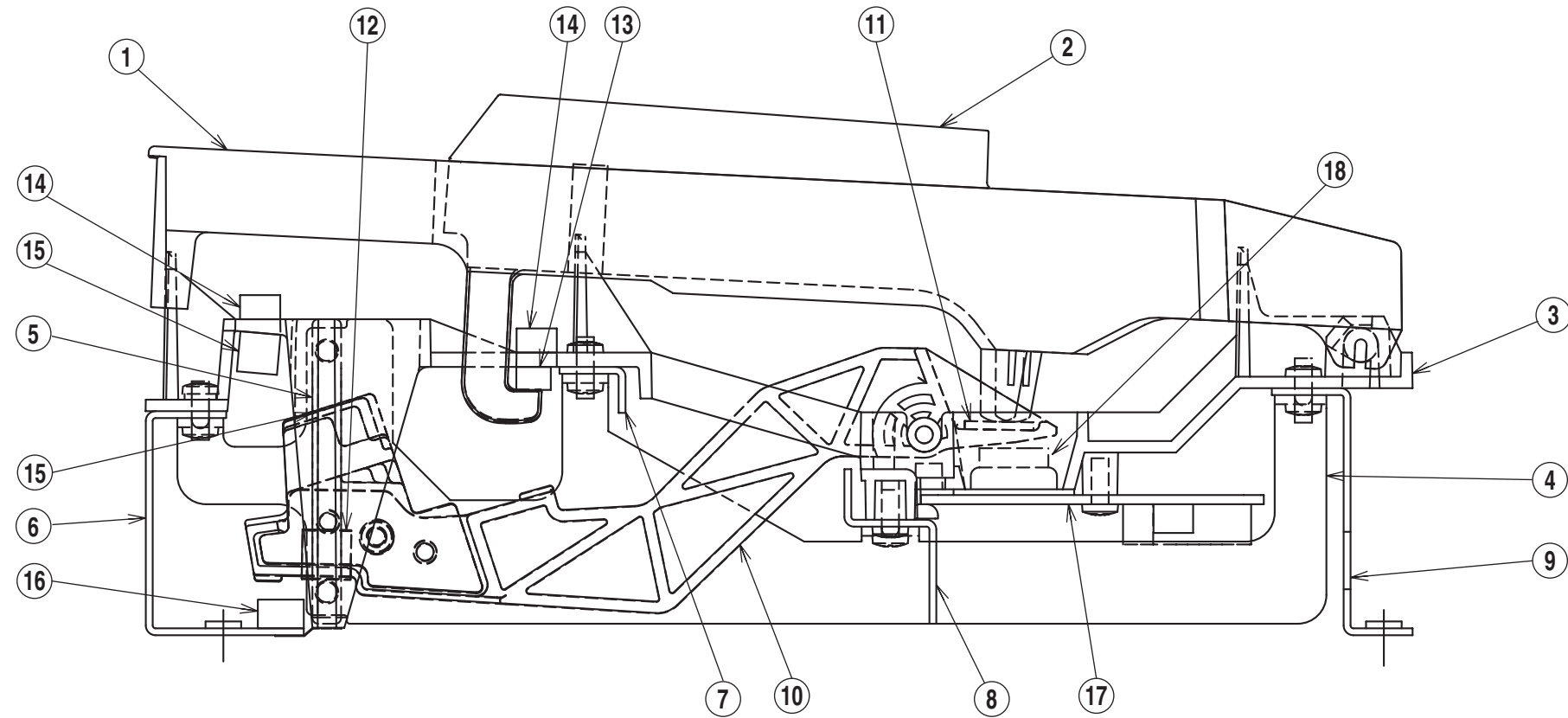
No.	Code No.	Name	Description	Q'ty
	935125	Music Rack		1
	813227	Foot Pedal F-1r		1
	811615	AC Cable for 120V area	UC01K-3S-325B-3A	1
	811616	AC Cable for 230V area	CE01K-3S-325B-3A	1
	811617	AC Cable for UK	BS01K-3S-325B-3A	1
	811619	AC Cable for Australia	SA01K-3S-325B-3A	1

# Panel Assembly



No.	Code No.	Name	Description	Q'ty
1	814891	Wheel Knob		2
2	811555	Key Top		40
3	813702	LCD Cover		1
4	939900	Slide VR Cover		5
5	812630	Slide VR Cover Cloth		5
6	804969	Slide VR Knob		5
7	811799	Rotary Volume Knob		4
8	814853	LCD	PMC16021E8-SBL	1
9	813805	USB Connector	YKF45-0002	1
10	808473	MIDI Jack	YKF51-5053	1
11	812442	MIDI Jack	YKF51-5061	1
12	803439	Phone Jack	YKB21-5074	5
13	802576	Phone Jack	YKB21-5006	1
14	814856	Power Switch	SDDJE11600	1
15	811643	AC Inlet	AC-P01CF01	1

# Keyboard Unit (RG88 Type)



<Keyboard Parts List>

No.	Code No.	Parts Name	Description	Q'ty	No.	Code No.	Parts Name	Description	Q'ty
	814849	Complete Keyboard Unit		1	10	947907A	Hammer Assy (White Key Low)	Key No. 1- 15	9
1	814651	White Key (C)		7		947908A	Hammer Assy (White Key Mid-Low)	Key No. 16- 32	10
	814652	White Key (D)		7		947909A	Hammer Assy (White Key Mid-High)	Key No. 33- 63	18
	814653	White Key (E)		7		947910A	Hammer Assy (White Key High)	Key No. 64- 88	15
	814654	White Key (F)		7		947911A	Hammer Assy (Black Key Low)	Key No. 1- 15	6
	814655	White Key (G)		7		947912A	Hammer Assy (Black Key Mid-Low)	Key No. 16- 32	7
	814656	White Key (A)		7		947913A	Hammer Assy (Black Key Mid-High)	Key No. 33- 63	13
	814657	White Key (B)		8		947914A	Hammer Assy (Black Key High)	Key No. 64- 88	10
	814658	White Key (AA)	lowest A key	1	11	814664	Slip Tape		88
	814659	White Key (CC)	highest C key	1	12	814665	Guide Tape		88
2	814660	Black Key		36	13	813171	Key Stopper Cushion		1
	814661	Chassis (A-G#)		7	14	814666	Stopper Felt		2
3	814662	Chassis (A-C)		1	15	814667	Hammer Upper-Limit Cushion		1
	947901A	Rib Assy		8	16	814668	Hammer Lower-Limit Cushion		1
4	814650	Guide Spacer		16	17	237347	PWB, KKB-015 Assy		1
	947902	Front Rail		1		800760	IC (Decoder)	74HC138P	3
5	947903	Stopper Rail		1		807339	Diode	1S2076A	176
	947904	Switch Rail		1	18	813175	Rubber Contact	F-E (12-cup)	8
6	947905	Back Rail		1					

## Keyboard Disassembling Procedure

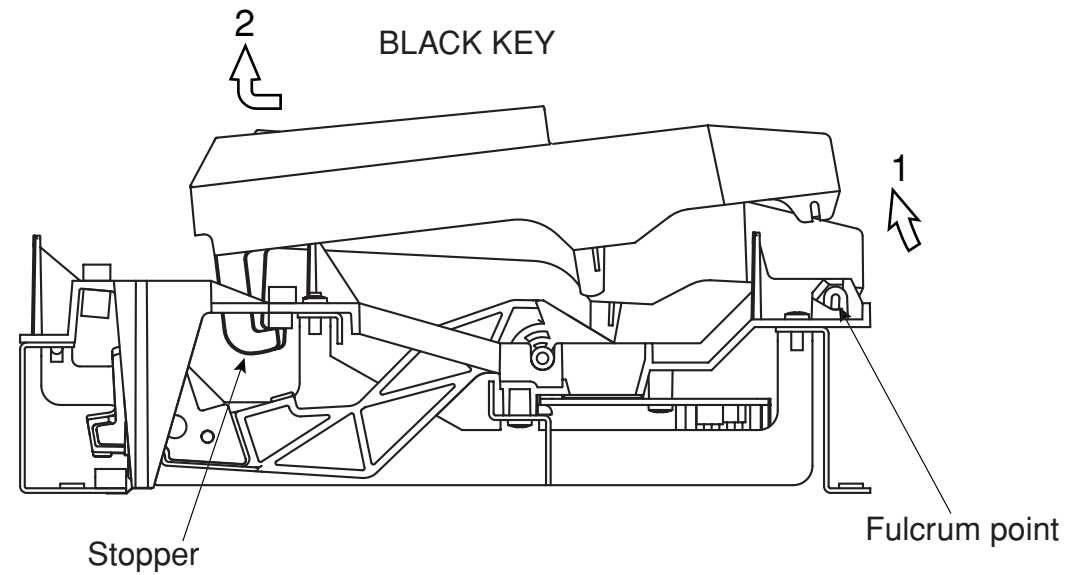
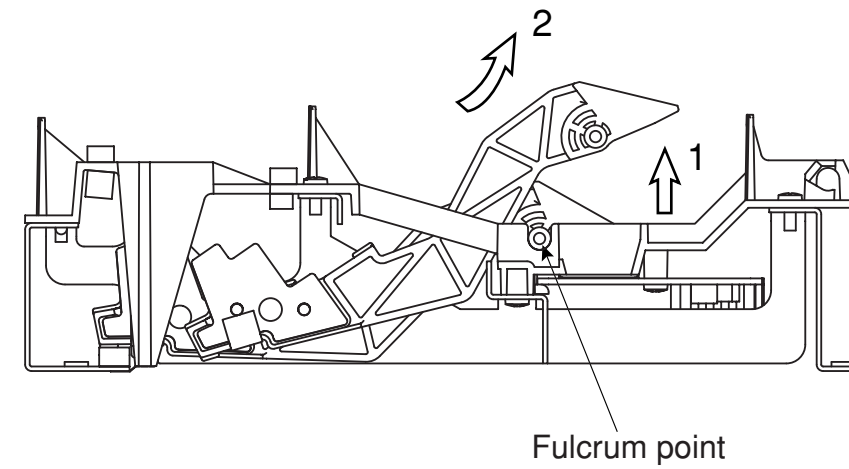
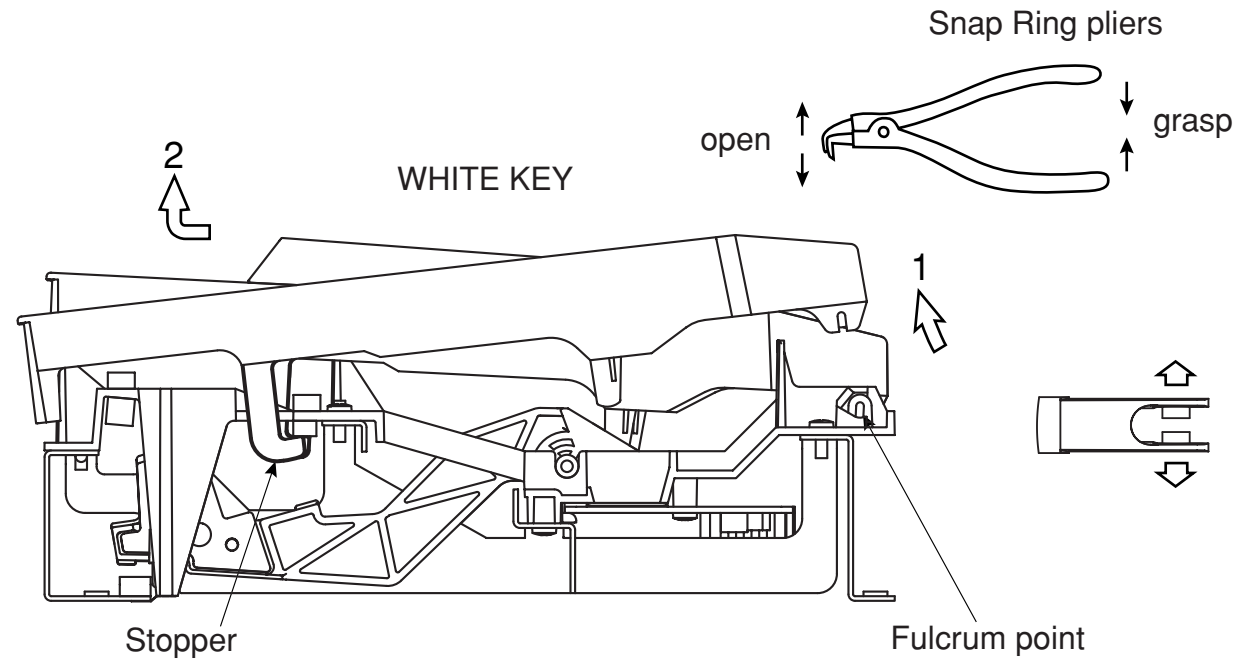
First, remove the keyboard fixing screws (10 pcs.) at the bottom of the piano and slide the Keyboard unit backward.

### <How to take a key off>

1. Spread the key at fulcrum point and lift it up. (We recommend to use Snap Ring pliers. If not available, use a flat blade (tapered) screwdriver.)
2. Pull the key off. (Pay attention to the stopper.)

### <How to take a hammer off>

1. Lift the hammer at the fulcrum point.
2. Pull the hammer off.



\* To remove a black key, the white keys on either side must be removed first.



# ■ Parts List

## Electronic Parts List

Code No.	Parts Name	Q'ty	Parts Number	Remarks	Model
237769	P.W.B. Assy	1	KEP-126 (22)	CPU	
237770	P.W.B. Assy	1	KEP-179~185 (1)	PANEL,HP	
237773	P.W.B. Assy	1	KEP-186~189 (2)	ANALOGS,A/D,JACK,POWER	120V
237774	P.W.B. Assy	1	KEP-186~189 (3)	ANALOGS,A/D,JACK,POWER	230V
237772	P.W.B. Assy	1	KEP-099 (3)	MIDI,USB	
237347	P.W.B. Assy	1	KKB-015 (1)	KEYBOARD	
948276	PH Standard Cable	1	PH-04-0400-YEL	JACK-ANALOG	
948277	PH Standard Cable	1	PH-04-0650-YEL	POWER-ANALOG	
948278	PH Standard Cable	1	PH-05-0100-GRN	CPU-ANALOG	
948301	PH Standard Cable	1	PH-05-0950-GRN	HP-ANALOG	
948279	PH Standard Cable	1	PH-06-0180-BLU	PNLC-PNLR	
948280	PH Standard Cable	1	PH-06-0350-BLU	FSW-ANALOG	
947632	PH Standard Cable	1	PH-06-0400-BLU	PNLL-ANALOG	
944646	PH Standard Cable	1	PH-07-0500-PUR	CPU-ANALOG	
948281	PH Standard Cable	1	PH-08-0130-GRY	PNLC-PNLR	
948282	PH Standard Cable	1	PH-08-0350-GRY	PNLL-ANALOG	
947670	PH Standard Cable	1	PH-09-0200-WHT	ROTALY-ANALOG	
947636	PH Standard Cable	1	PH-09-0400-WHT	CPU-MIDI	
948283	PH Standard Cable	1	PH-10-0400-BLK	PNLR-ANALOG	
948292	PH Standard Cable	1	PH-11-0100-BRN	CPU-ANALOG	
948284	PH Standard Cable	1	PH-12-0140-RED	PNLC-PNLL	
948285	PH Standard Cable	1	PH-16-0200-BLU	CPU-ANALOG	
946286	VH Standard Cable	1	VH-02-0300	POWER-CPU	
948287	Keyboard Cable	1		CPU-KBD	
948288	LCD Cable	1		CPU-LCD	
948289	Power Switch Cable	1			
948290	Wheel Cable	1			
948291	Inlet Cable	1			
948293	Earth Cable (1)	1			
814853	LCD	1	PMC16021E8-SBL		
810300	Ferrite Core	3	KR06TB251512B1		
811643	AC Inlet	1	AC-P01CF01		
814856	Power Switch	1	SDDJE11600		
805995	Rotaly Volume	1	RK163110 50K special		
805996	Rotaly Volume	1	RK163110 50K CT special		
811615	AC Cable	1	UC01K-3S-325B-3A	120V area	
811616	AC Cable	1	CE01K-3S-325B-3A	230V area	
811617	AC Cable	1	BS01K-3S-325B-3A	UK	
811619	AC Cable	1	SA01K-3S-325B-3A	Australia	

## P.W.B. KEP-126 Assembly Parts List

Code No.	Parts Name	Q'ty	Parts Number	Parts Address
812215	MPU	1	MB91101APF-G	U2
814414	MG	1	K022-FP	U6
810368	Voltage Regulator	1	NJM78L05UA-TE1	U17
813047	Voltage Regulator	1	μPC2933AT	U27
812219	OP AMP	3	NJM4580E-T1	U13,14,18
237690	Flash ROM	1	KP448A-F9FP	U3
814848	DRAM	1	GLT440L16-35TC	U4
814416	SRAM	1	UT62L2568LS-70LL/UT62L2568LS-70LLI	U9
814854	P2ROM	1	KP446-MDFW	U7
814437	P2ROM	1	KP412-MDFW	U8
814438	P2ROM	1	KP413-MDFW	U10
814435	Reset	1	BD5245 FVE-TR	U29
814074	DAC	1	AK4393VF-E2	U15
812217	Logic	2	TC74HCT7007AF (TP1)	U23,25
804056	Logic	1	HD74HC245FPEL	U24
812958	X'tal Oscillator	1	DSO751SV 33.8688MHz	X2
812722	X'tal Resonator	1	SMD-49 12.5MHz/CX-49G 12.5MHz	X1
813358	Chip Bead	44	BLM18AG601SN1D	EM1,2,3,5,7,8,9,10,13,14,15,16,17,18, 19,20,21,22,32,33,34,40,41,42,43,44, 45,46,47,48,49,50,51,52,53,54, R16,17,19,20,21,91,92,93

### P.W.B. KEP-179~185 (1) Assembly Parts List

Code No.	Parts Name	Q'ty	Parts Number	Parts Address
	KEP-179 (Panel Left)			
813111	LED	8	EL3105VRT/TR1-11 (A)	LED1,2,3,4,5,6,11,12
814696	LED	4	GL2HD6	LED7,8,9,10
812662	LED	4	GL2EG6	LED13,14,15,16
813838	LED	4	SPR-325MVW	LED17,18,19,20
800625	Diode	12	1SS133T-77	D1,2,3,4,5,6,7,8,9,10,11,12
808345	Switch	12	EVQ21305R/KSH0612AT	SW1,2,3,4,5,6,7,8,9,10,11,12
804643	Slide Volume	4	RS30111AC015A	VR2,3,4,5
804978	Slide Volume	1	RS30112AC	VR1
810347	Spacer	8	LDS-50R	LED7,8,9,10,13,14,15,16
	KEP-180 (Panel Center)			
813111	LED	3	EL3105VRT/TR1-11 (A)	LED21,22,23
800625	Diode	5	1SS133T-77	D13,14,15,16,17
808345	Switch	5	EVQ21305R/KSH0612AT	SW13,14,15,16,17
	KEP-181 (Panel Right)			
812220	LOGIC	1	HD74HC166P	U1
808457	LOGIC	2	HD74HC595P	U2,3
810851	Transistor	9	DTC143ESATP	Q1,2,3,4,5,6,7,8,10
811758	Transistor	6	DTB113ZS	Q11,12,13,14,15,16
813111	LED	21	EL3105VRT/TR1-11(A)	LED24,25,26,27,28,29,30,31,32,33,34, 35,36,37,38,39,40,48,49,51,52
800625	Diode	23	1SS133T-77	D18,19,20,21,22,23,24,25,26,27,28,29, 30,31,32,33,34,35,36,44,45,47,48
808345	Switch	23	EVQ21305R/KSH0612AT	SW18,19,20,21,22,23,24,25,26,27,28, 29,30,31,32,33,34,35,36,44,45,47,48
802208	Electrolytic Capacitor	1	ESRA160ELL100MD07D/ECEA1CKA100B	C1
	KEP-182 (Rotary Volume)			
811844	Rotary Volume	4	RK11K114	VR6,7,8,9
	KEP-185 (Head Phone)			
803439	Phone Jack	1	YKB21-5074	JA6
948294	Earth Cable (2)	1		-

## P.W.B. KEP-186~189 (2)(3) Assembly Parts List

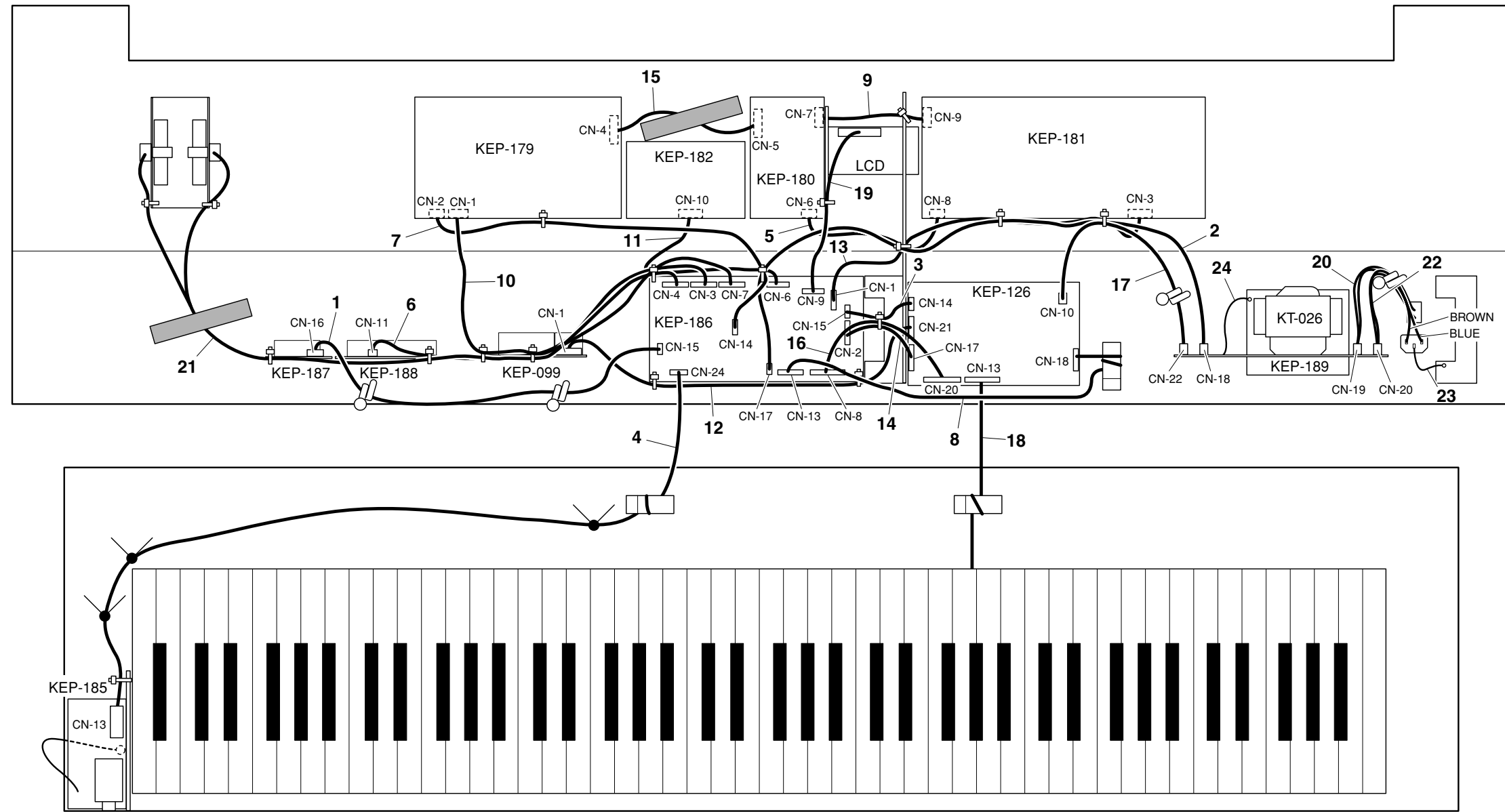
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	KEP-186 (A/D Joint, ANALOG)				
803995	LOGIC	2	TC74HC4051AP	U2,4	
808457	LOGIC	1	HD74HC595P	U3	
808098	OP-AMP	1	NJM3404AD	U1	
809426	OP-AMP	2	BA15532	U9,10	
812222	OP-AMP	1	LA6517	U8	
808973	Transistor	1	DTA114ESATP	Q7	
812527	Transistor	3	2SC5395-T12-E	Q1,8,9	
812125	Transistor	6	2SC3792	Q6,10,11,12,15,16	
803591	Zener Diode	1	HZS2BLL	D1	
807084	Resistor Network	1	RGSD16L502F	RN1	
812297	Retardant Resistor	2	CPFS1/2CT26A68RJ	R58,63	
809125	Film Capacitor	2	ECQ-V1H 104JL3	C60,66	
807028	Electrolytic Capacitor	5	ESMG160ELL101ME11D	C1,4,9,56,57	
802892	Electrolytic Capacitor	2	ESMG250ELL101MF11D	C44,51	
800660	Electrolytic Capacitor	4	ESMG500ELL100ME11D	C45,52,61,62	
802799	Electrolytic Capacitor (BP)	2	BSME160ELL100ME11D	C46,53	
803868	Electrolytic Capacitor (BP)	2	BSME160ELL470MF11F	C59,65	
	KEP-187 (Normal Out)				
803439	Phone Jack	2	YKB21-5074	JA4,5	
	KEP-188 (Foot Switch)				
803439	Phone Jack	2	YKB21-5074	JA1,2	
802576	Phone Jack	1	YKB21-5006	JA3	
	KEP-189 (Power)				
811487	DC/DC Converter	1	M5291P	U13	
811018	Reset IC	1	PST600C	U14	
802889	Voltage Regulator	1	AN7815F	U11	
802890	Voltage Regulator	1	AN7915F	U12	
811589	Transistor	1	2SA1641S/T	Q13	
805850	Transistor	1	DTA143ES	Q14	
808952	Bridge Diode	1	DBF40C	D7	
805852	Diode	5	1SR139-100	D2,3,4,5,6	
811591	Diode	1	SB10-04A3	D9	
809243	Zener Diode	1	GZB6.2C_B	D8	
812409	Metal Film Resistor	1	RNM1/4C3 2201FTP	R75	
802380	Metal Film Resistor	1	RNM1/4C3 2701FTP	R72	
809432	Metal Film Resistor	1	RNM1/4C3 3301FTP	R67	
813112	Metal Film Resistor	1	RNM1/4C3 7501FTP	R70	
811767	Retardant Resistor	1	CFPS1/2CT26A101J	R71	
811718	Retardant Resistor	1	CFPS1/2CT26A1331J	R66	

Code No.	Parts Name	Q'ty	Parts Number	Parts Address	Model
811711	High Voltage Capacitor	2	DE1E3KX472MB5BA01	C75,78	
805992	Electrolytic Capacitor	1	ESMG6R3ELL102MHB5D	C83	
807041	Electrolytic Capacitor	1	ESMG6R3ELL332MJ20S	C81	
707418	Electrolytic Capacitor	1	ESMG160ELL470ME11D	C84	
809769	Electrolytic Capacitor	2	ESMG250ELL4R7ME11D	C69,71	
808738	Electrolytic Capacitor	1	ESMG250ELL471MJC5S	C67	
807403	Electrolytic Capacitor	2	ESMG250ELL222MK25S	C68,70	
804455	Electrolytic Capacitor	1	ESMG250ELL472MLN3S	C80	
811760	Bead Core	1	BP53RA030010040M	Q13	
809305	Choke Coil	1	SKP2-50	L6	
811756	Fuse	1	UL TSC 500mA/125V (SOC Corporation.) * Inrush-withstand	F1	120V
811757	Fuse	1	TSC 160mA/250V (SOC Corporation.) * Inrush-withstand	F1	230V
811709	IC Protector	1	ICP-N25	F2	
808964	Fuse Clip	2	PFC5000-0202	F1,2	
948294	Earth Cable (2)	1		-	
814857	Power Transformer	1	KT-026	PT1	

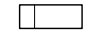


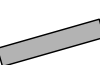

### P.W.B. KEP-099 (3) Assembly Parts List

Code No.	Parts Name	Q'ty	Parts Number	Parts Address
814016	USB MPU	1	M38K07M4-056HP	U2
808932	Photocoupler	1	PC400T	U3
811645	Reset	1	PST575CMT	U1
810920	Transistor	4	DTC143EKA	Q1
809834	Diode	1	HSK120TR	D1
813928	X'tal Resonator	1	SMD-49 6.0MHz/CX-49G 6.0MHz	X1
809845	Electrolytic Capacitor	1	ECEV1CS100SR	C1
813358	Chip Bead	6	BLM18A601SPT	EM1,2,3,8,9,10
813937	Chip Bead	2	BLM21PG600SN1	EM4,7
813938	Chip Bead	2	BLM18BB121SN1	EM5,6
808473	MIDI Jack	1	YKF51-5053	JA1
812442	MIDI Jack	1	YKF51-5061	JA2
813805	USB Connector	1	YKF45-0002	J1
813940	Screw Terminal	1	TP00799-23	

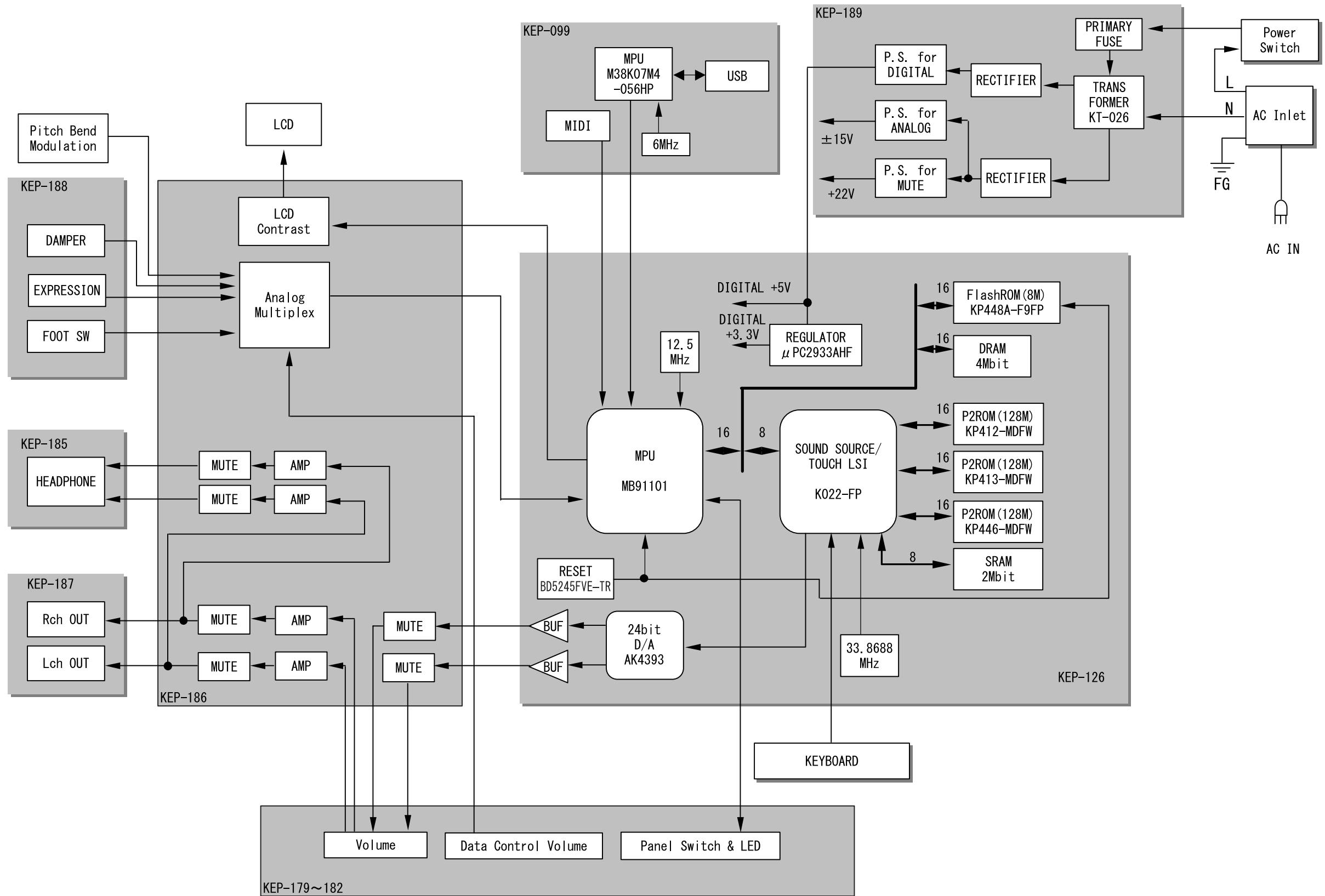
# ■ Cable Wiring Specification



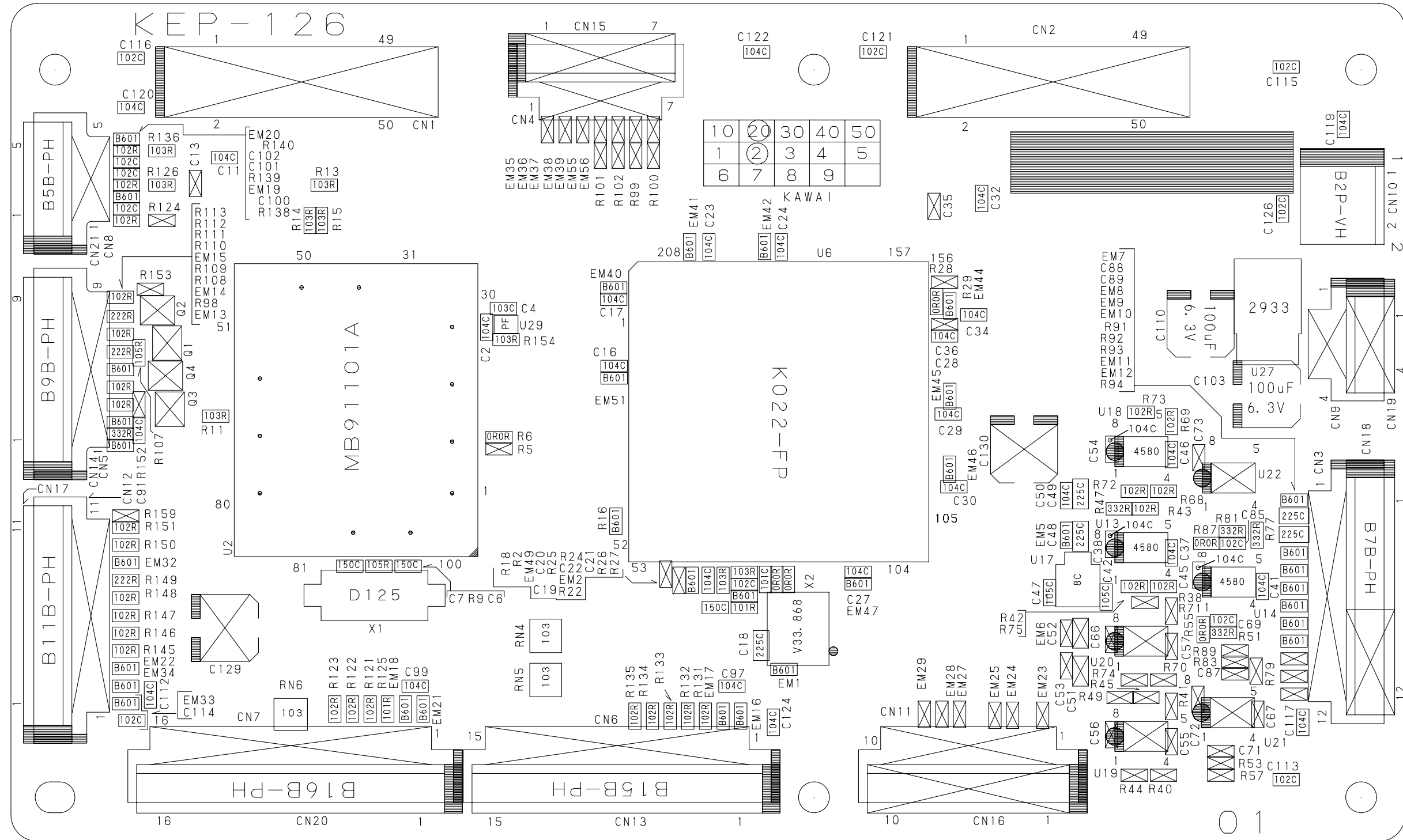
No	Parts code	Parts name	Termination 1	Termination 2	Q'ty	No	Parts code	Parts name	Termination 1	Termination 2	Q'ty
1	948276	PH-04-0400-YEL	KEP-187 CN16	KEP-186 CN15	1	13	948283	PH-10-0400-BLK	KEP-181 CN3	KEP-186 CN1	1
2	948277	PH-04-0650-YEL	KEP-189 CN18	KEP-186 CN17	1	14	948292	PH-11-0100-BRN	KEP-126 CN17	KEP-186 CN2	1
3	948278	PH-05-0100-GRN	KEP-126 CN21	KEP-186 CN5	1	15	948284	PH-12-0140-RED	KEP-179 CN4	KEP-180 CN5	1
4	948059	PH-05-0950-GRN	KEP-185 CN13	KEP-186 CN24	1	16	948285	PH-16-0200-BLU	KEP-126 CN20	KEP-186 CN8	1
5	948279	PH-06-0180-BLU	KEP-180 CN6	KEP-181 CN8	1	17	946286	VH-02-0300	KEP-189 CN22	KEP-126 CN10	1
6	948280	PH-06-0350-BLU	KEP-188 CN11	KEP-186 CN3	1	18	948287	Keyboard Cable	Keyboard	KEP-126 CN13	1
7	947632	PH-06-0400-BLU	KEP-179 CN2	KEP-186 CN14	1	19	948288	LCD Cable	LCD	KEP-186 CN9	1
8	944646	PH-07-0500-PUR	KEP-126 CN18	KEP-186 CN13	1	20	948289	Power Switch Cable	Power Switch	KEP-189 CN19	1
9	948281	PH-08-0130-GRY	KEP-180 CN7	KEP-181 CN9	1	21	948290	Wheel Cable	Wheel	KEP-186 CN4	1
10	948282	PH-08-0350-GRY	KEP-179 CN1	KEP-186 CN7	1	22	948291	Inlet Cable	Inlet	KEP-189 CN20	1
11	947670	PH-09-0200-WHT	KEP-182 CN10	KEP-186 CN6	1	23	948293	Earth Cable (1)	Frame	Inlet	1
12	947636	PH-09-0400-WHT	KEP-099 CN1	KEP-126 CN14	1	24	948294	Earth Cable (2)	Frame	KEP-189	1

-  ... Ferrite Core
-  ... Vinyl Binder
-  ... Binder
-  ... Filament Tape
-  ... Inshlock Tie

# Block Diagram



# ■ P.W.B. KEP-126 (22) Assembly [TOP]

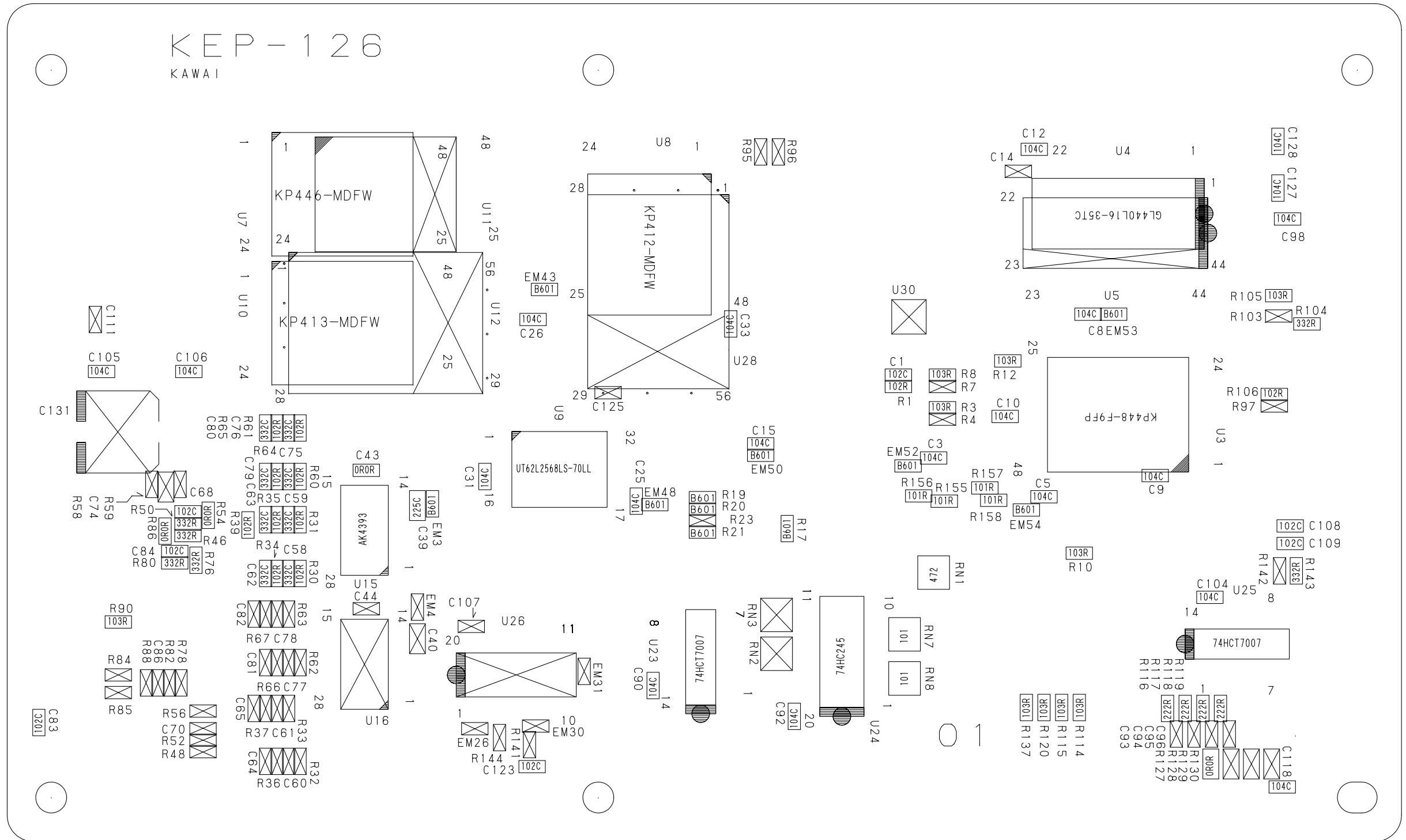


- 8C : NJM78L05UA
- B601 : BLM18AG601SN1D
- R56 : LK1608R56K
- R38, 42, 43, 47, 51, 68, 69, 72, 73, 77, 81 : Resistance Tolerance  $\pm 1\%$
- PF : BD5245FVE-TR

X : Not Mounted



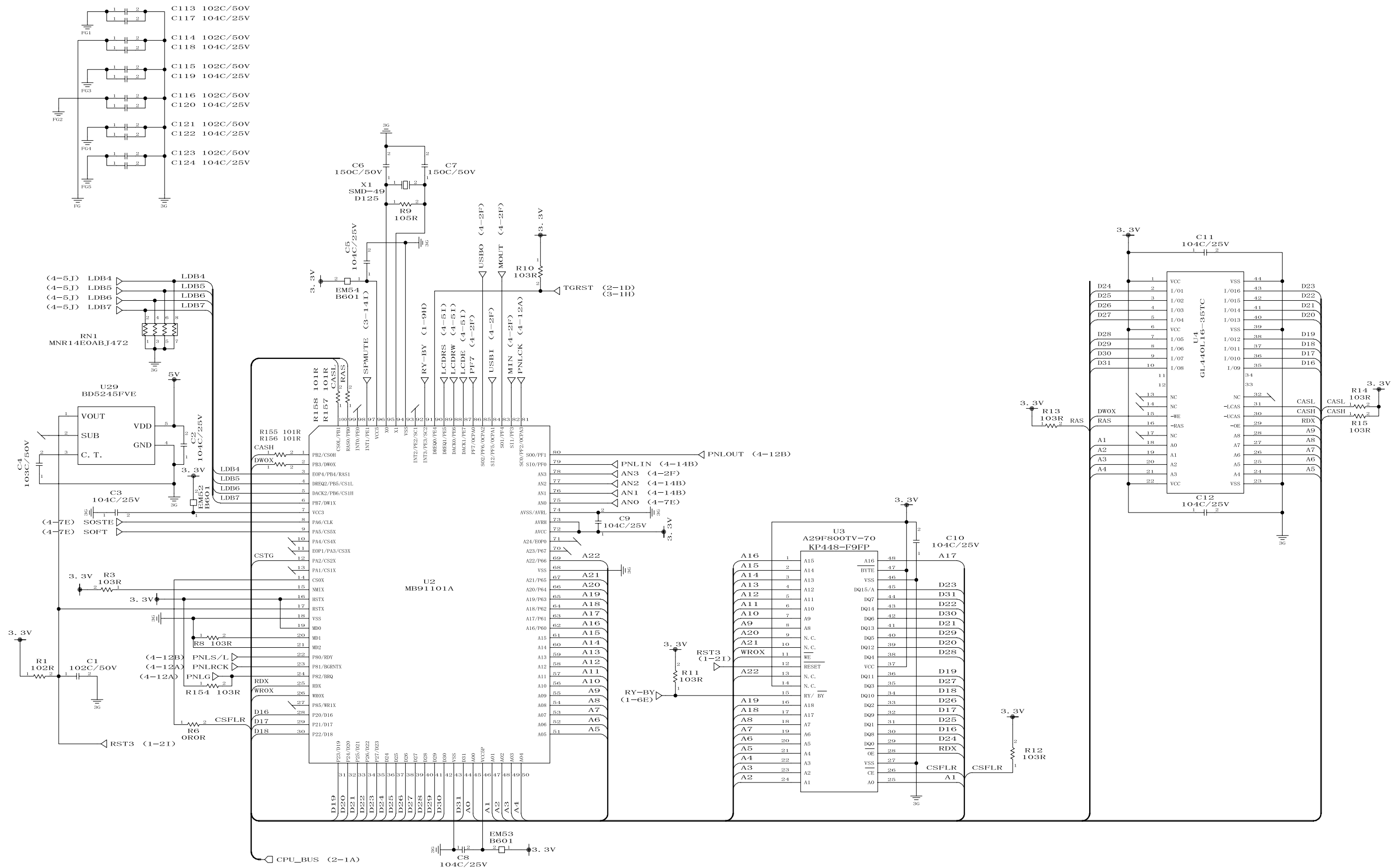
# ■ P.W.B. KEP-126 (22) Assembly [Back]



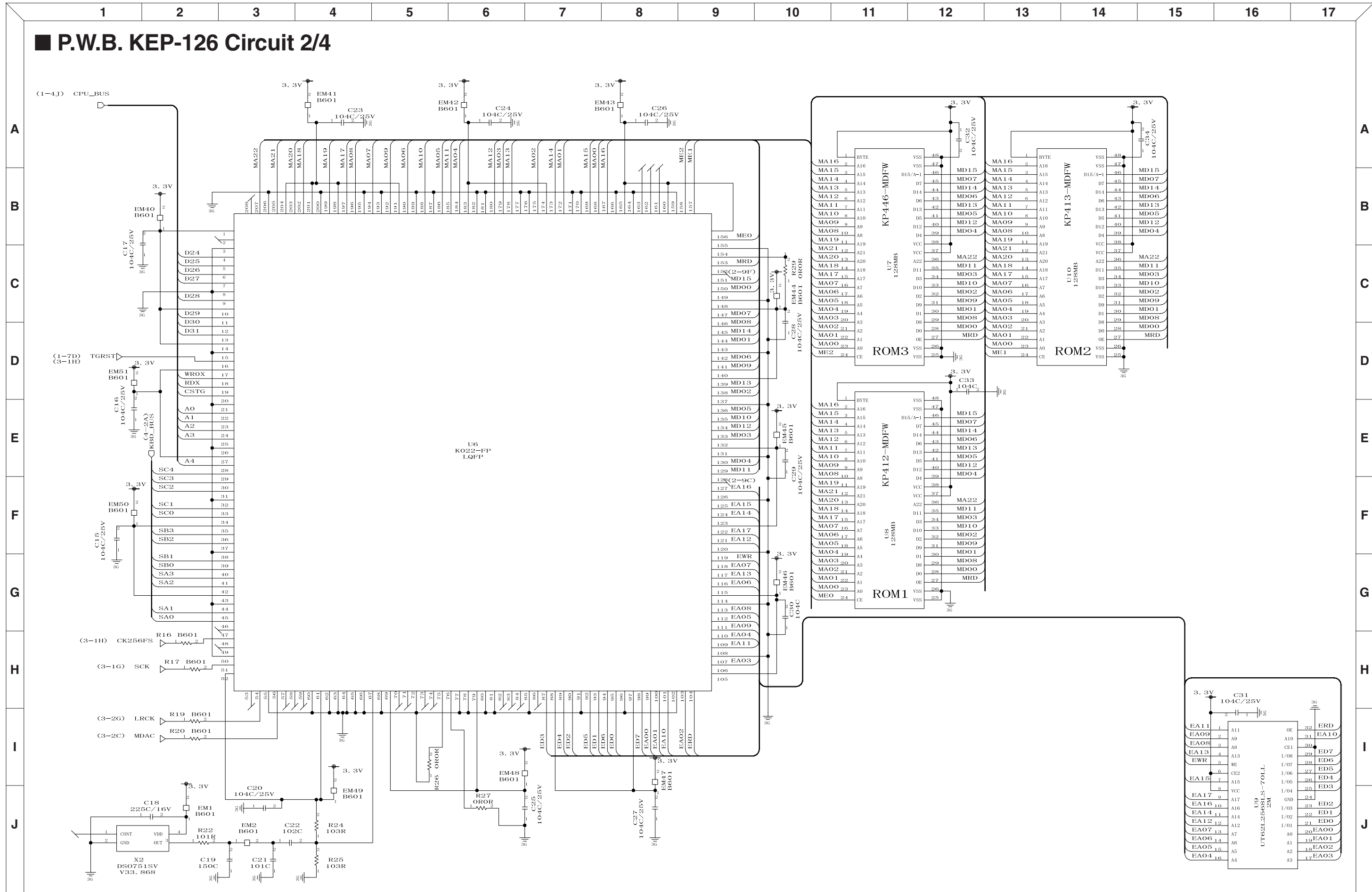
B601 : BLM18AG601SN1D  
 R30, 31, 34, 35, 39, 46, 50, 60, 61, 64, 65, 76, 80 : Resistance Tolerance  $\pm 1\%$

X : Not Mounted

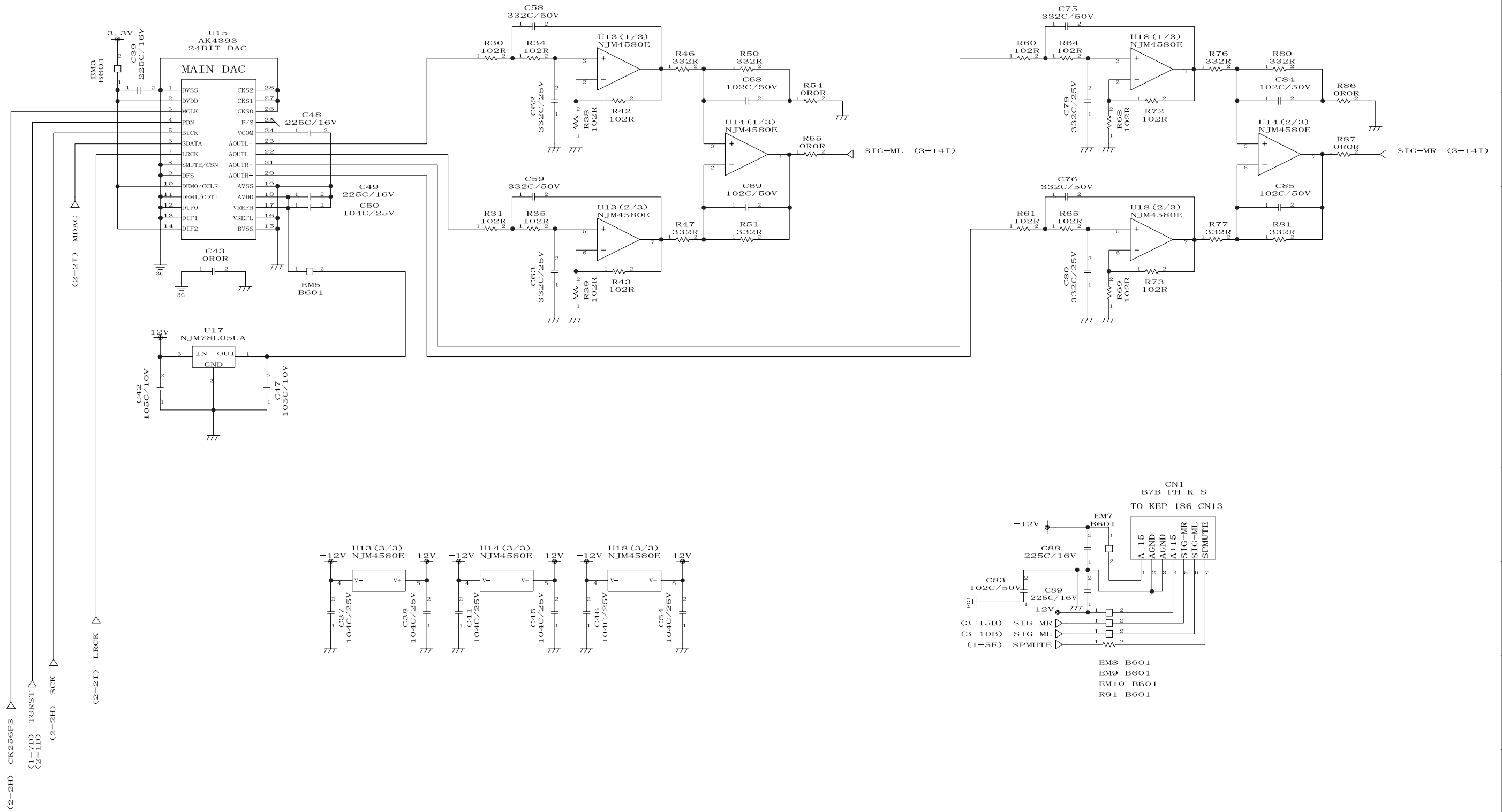
# P.W.B. KEP-126 Circuit 1/4



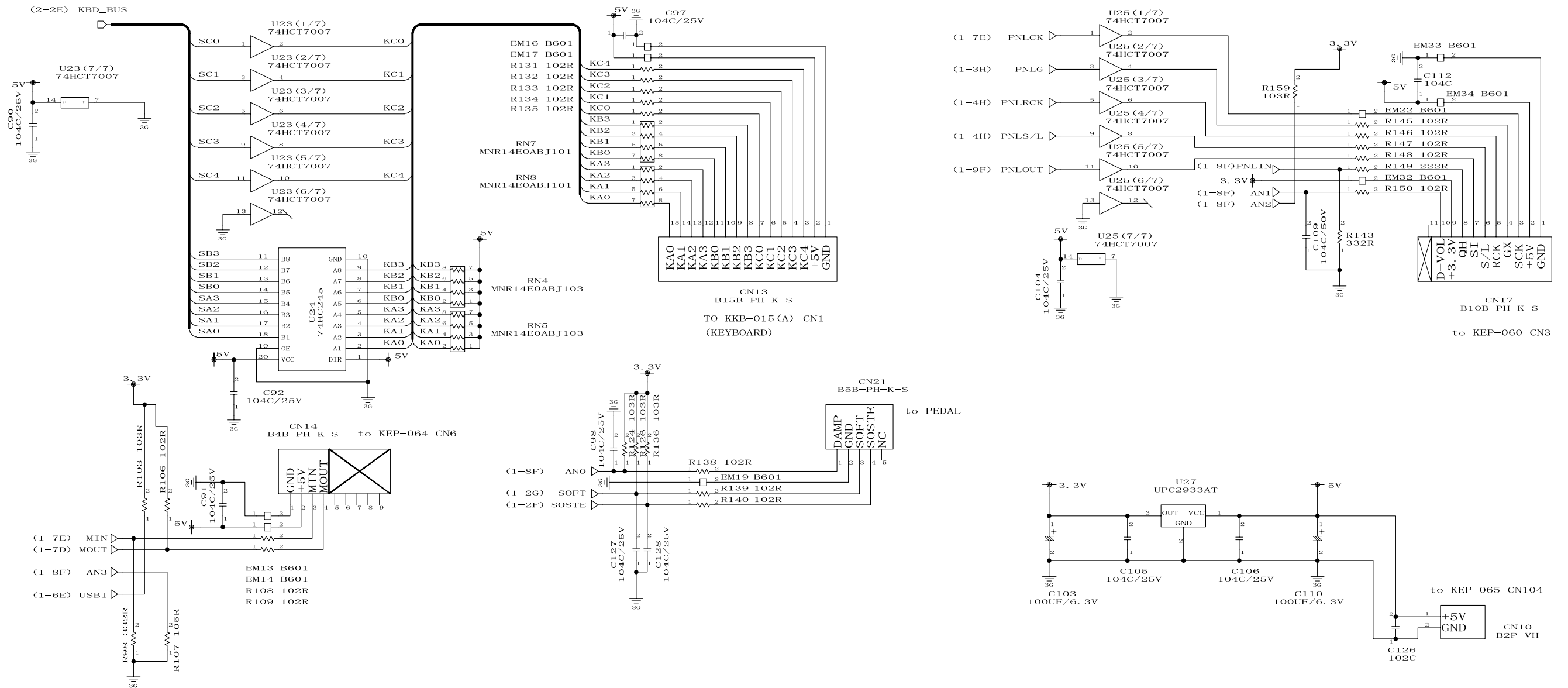
# P.W.B. KEP-126 Circuit 2/4



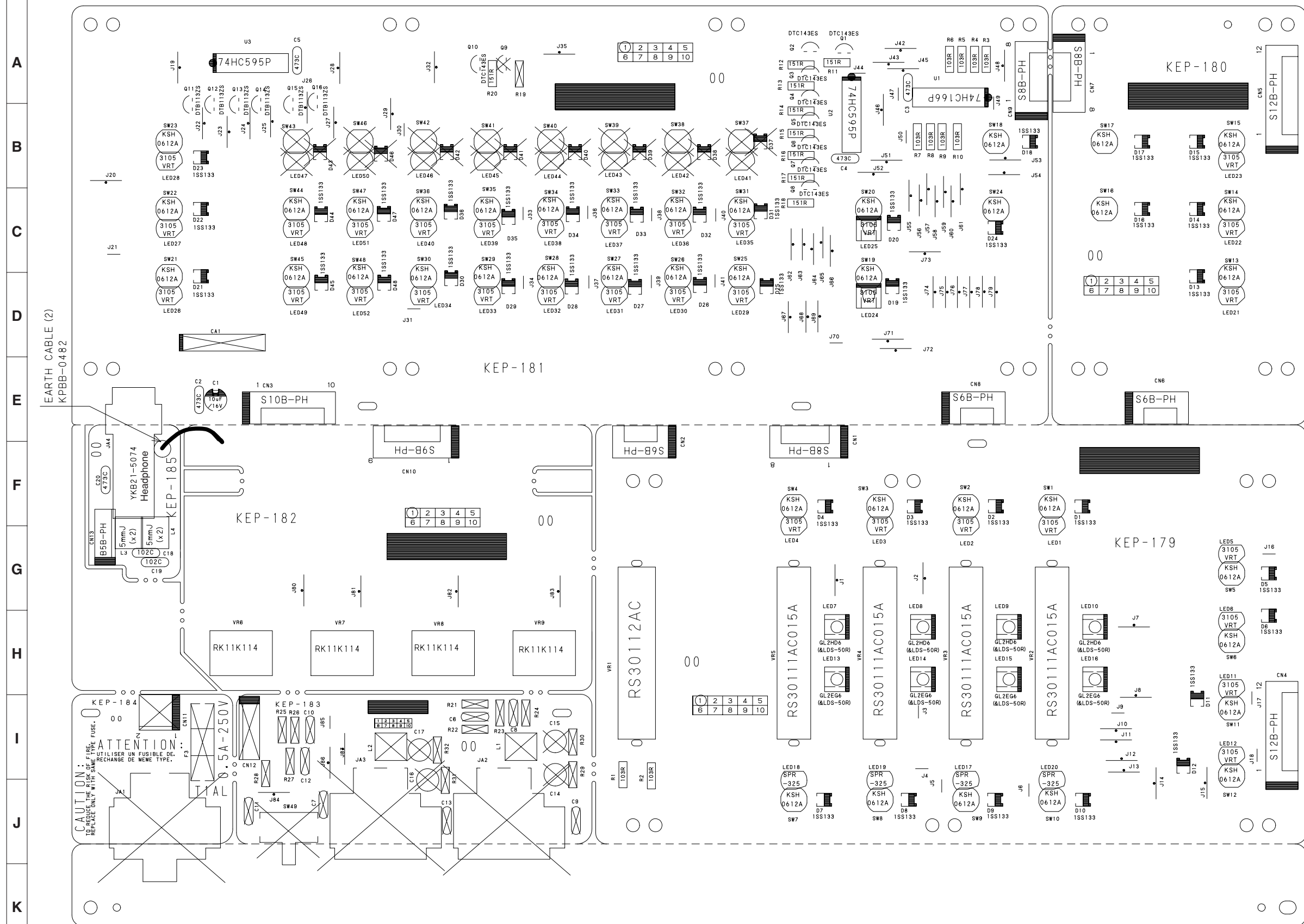
# P.W.B. KEP-126 Circuit 3/4



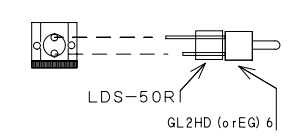
# ■ P.W.B. KEP-126 Circuit 4/4



# P.W.B. KEP-179 – 185 (1) Assembly

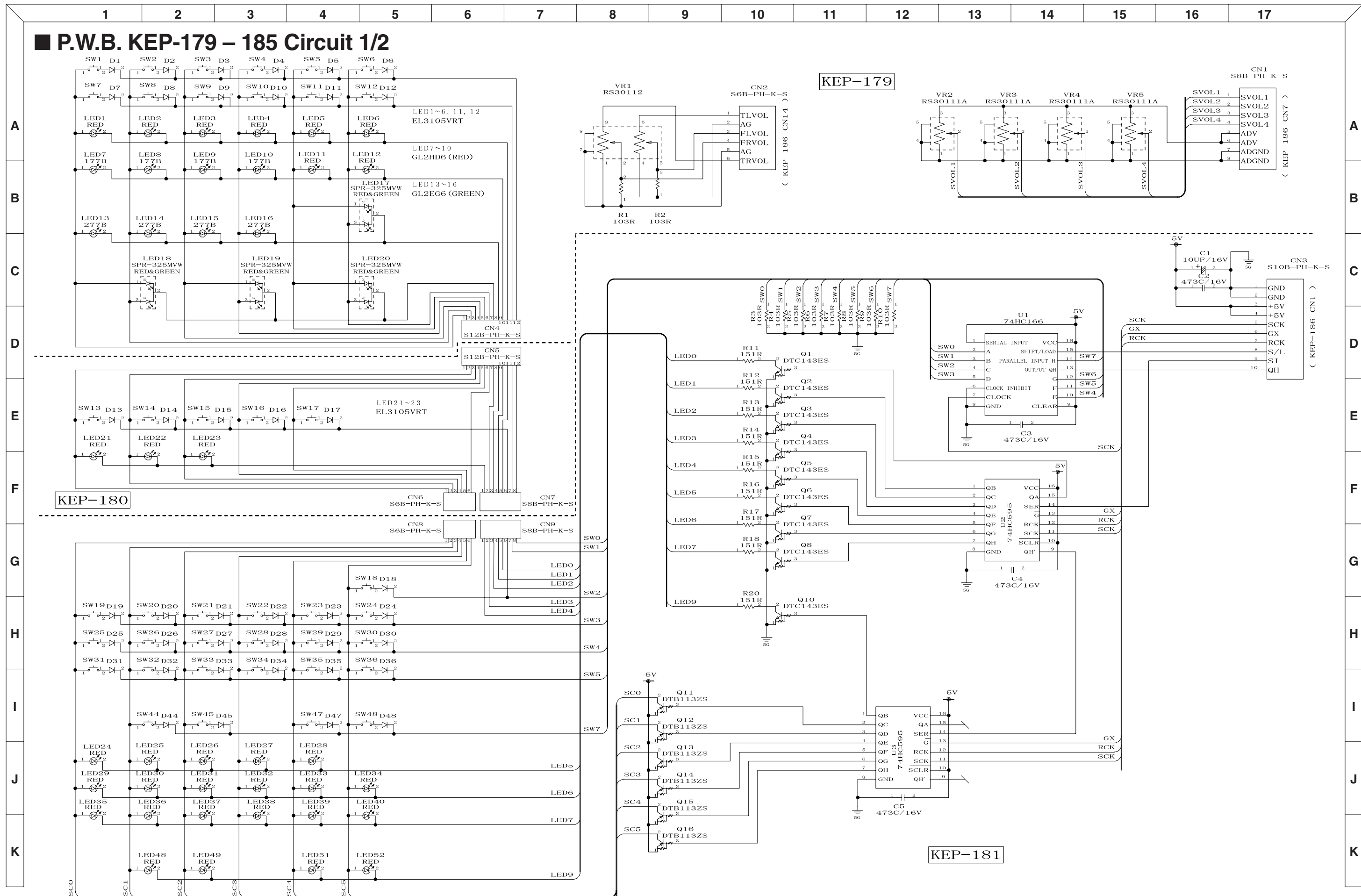


No.	Name
KEP-179	
SW1	ZONE SELECT 4
SW2	ZONE SELECT 3
SW3	ZONE SELECT 2
SW4	ZONE SELECT 1
SW5	EFFECT
SW6	EQ
SW7	ZONE ON/OFF 1
SW8	ZONE ON/OFF 2
SW9	ZONE ON/OFF 3
SW10	ZONE ON/OFF 4
SW11	TONE MODIFY
SW12	MIDI CC#
KEP-180	
SW13	SW
SW14	EFX
SW15	REVERB
SW16	MENU UP
SW17	MENU DOWN
KEP-181	
SW18	VALUE DOWN
SW19	SOUND
SW20	SETUP
SW21	STORE
SW22	SYSTEM
SW23	TRANSPOSE
SW24	VALUE UP
SW25	PIANO
SW26	E.PIANO 1
SW27	E.PIANO 2/MALLET
SW28	ORGAN 1
SW29	ORGAN 2/HARPSI
SW30	STRINGS/BRASS
SW31	SOUND SELECT 1
SW32	SOUND SELECT 2
SW33	SOUND SELECT 3
SW34	SOUND SELECT 4
SW35	SOUND SELECT 5
SW36	SOUND SELECT 6
SW44	SOUND SELECT 8
SW45	BASS
SW47	SOUND SELECT 7
SW48	VOCAL/PAD



X : Not Mounted

# P.W.B. KEP-179 – 185 Circuit 1/2

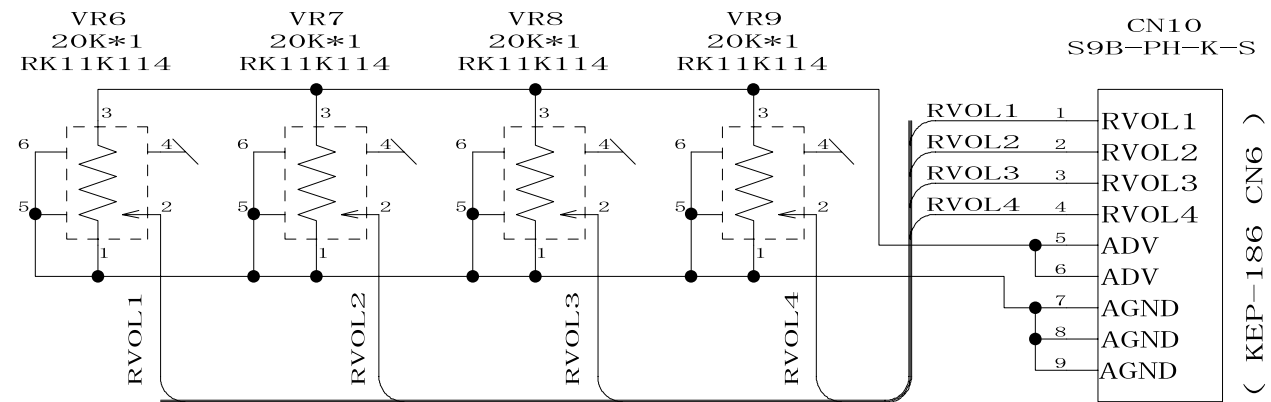
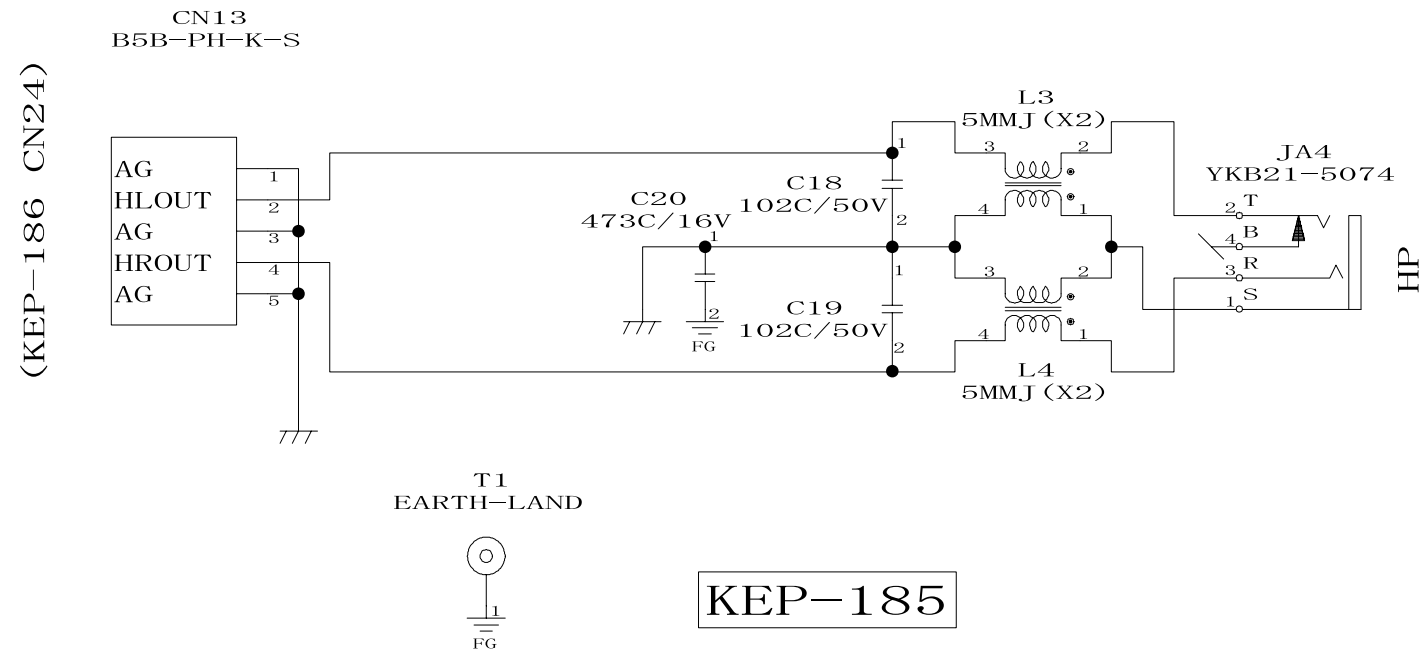


KEP-179

KEP-180

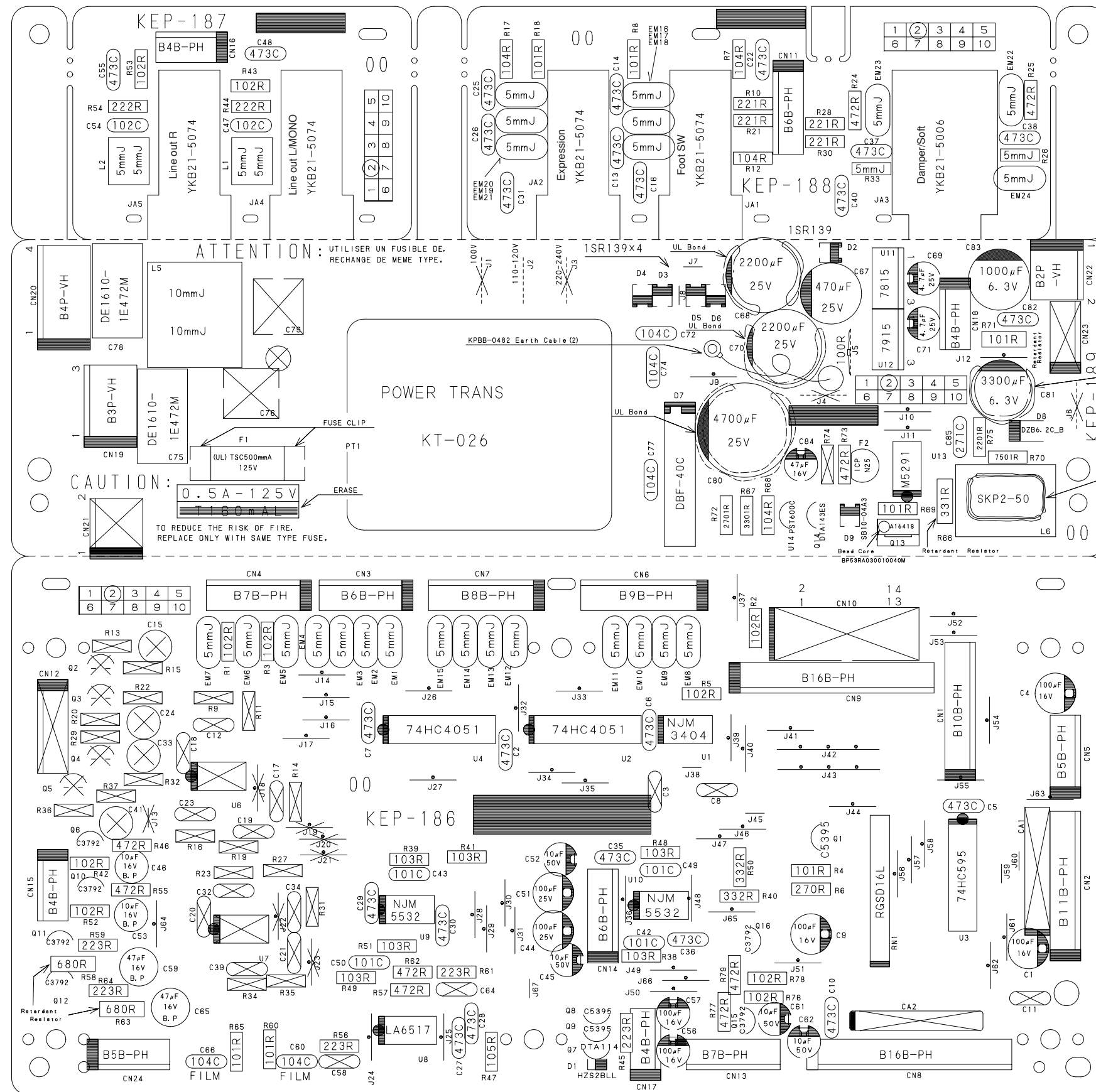
KEP-181

■ P.W.B. KEP-179 – 185 Circuit 2/2





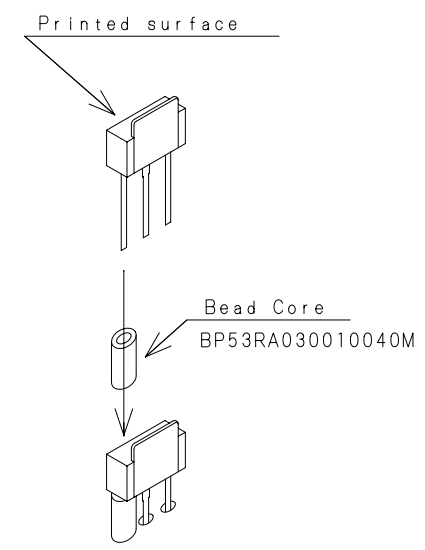
# P.W.B. KEP-186 – 189 (2) Assembly



UL Bond

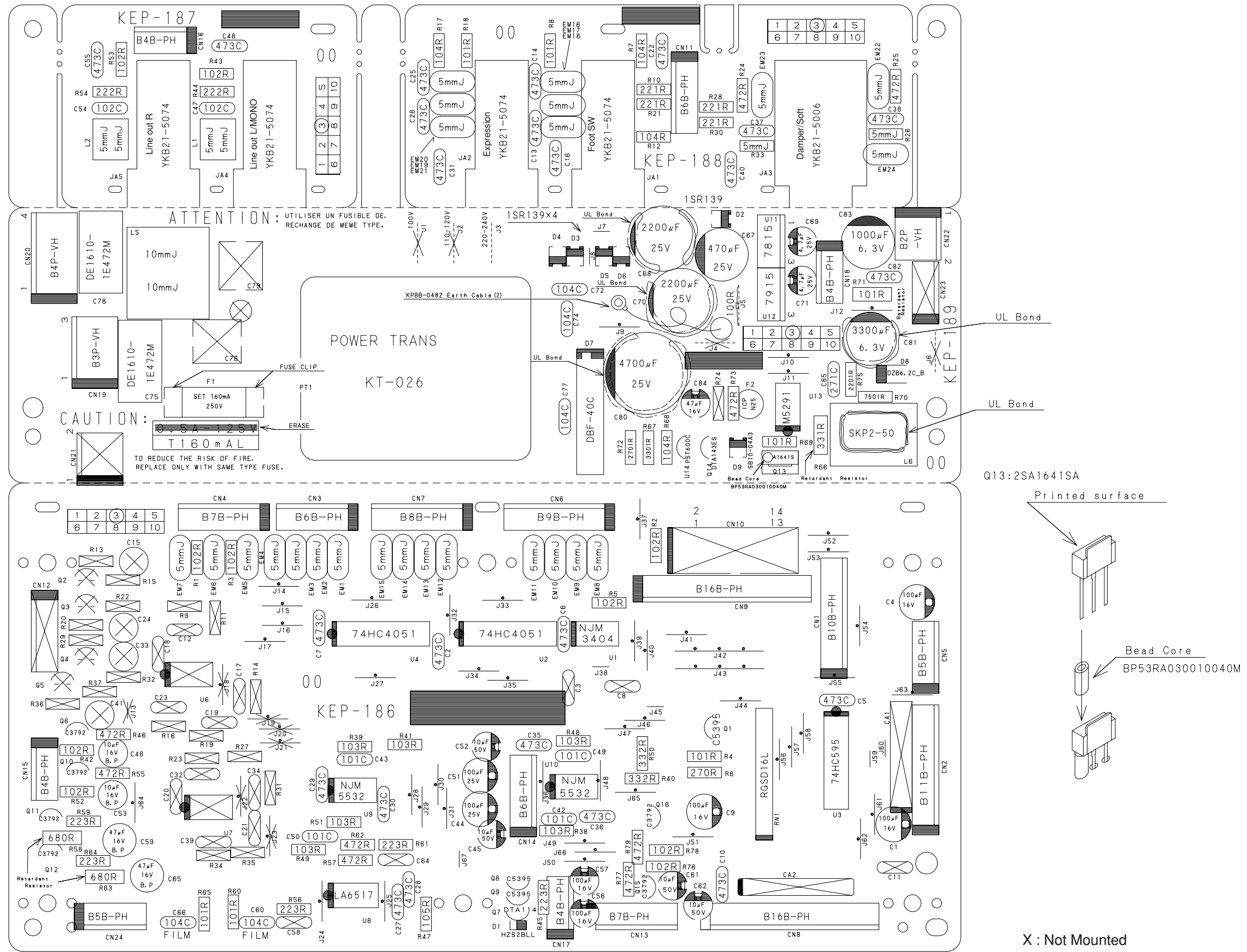
UL Bond

Q13: 2SA1641SA



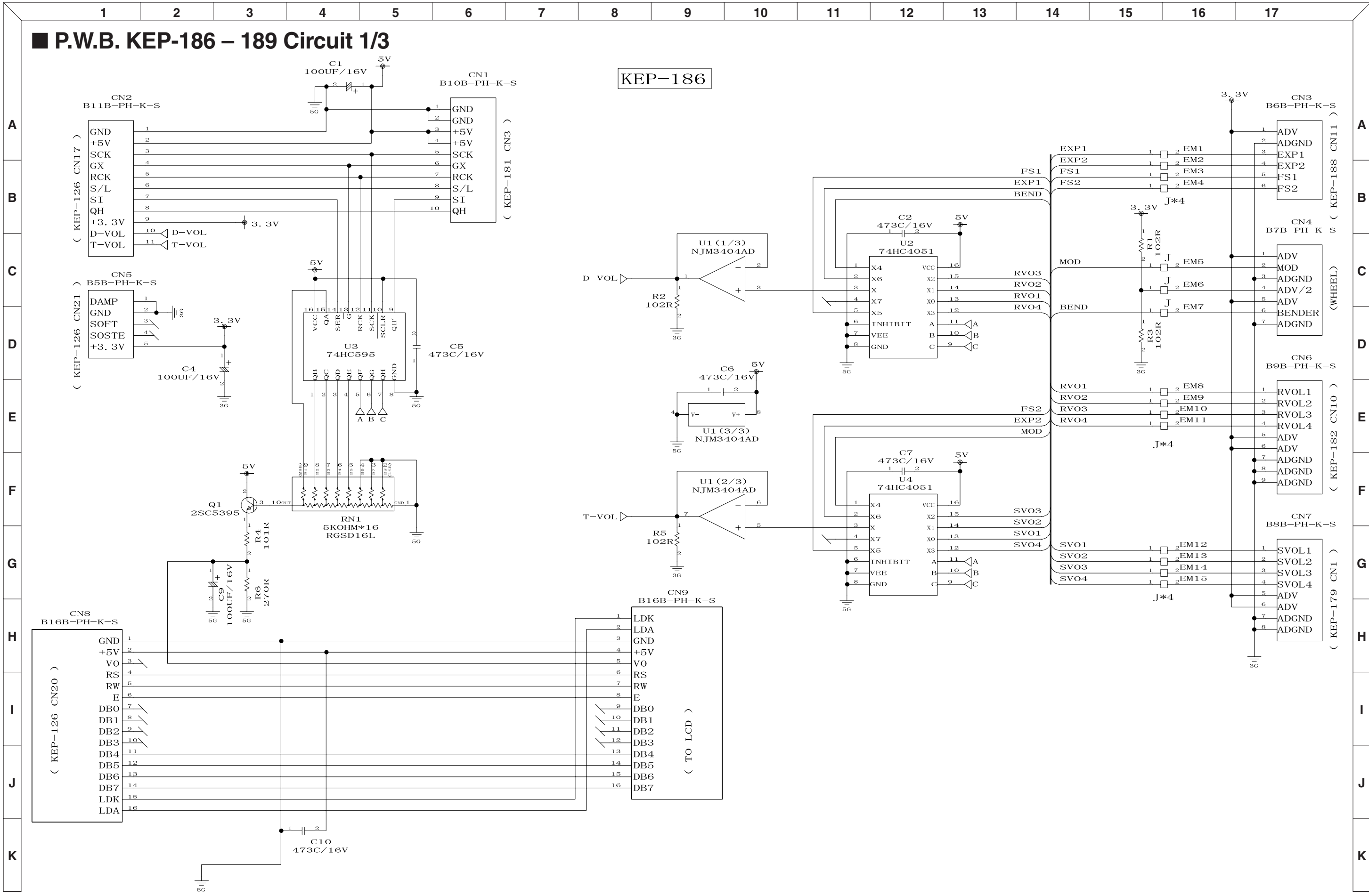
X : Not Mounted

# P.W.B. KEP-186 – 189 (3) Assembly

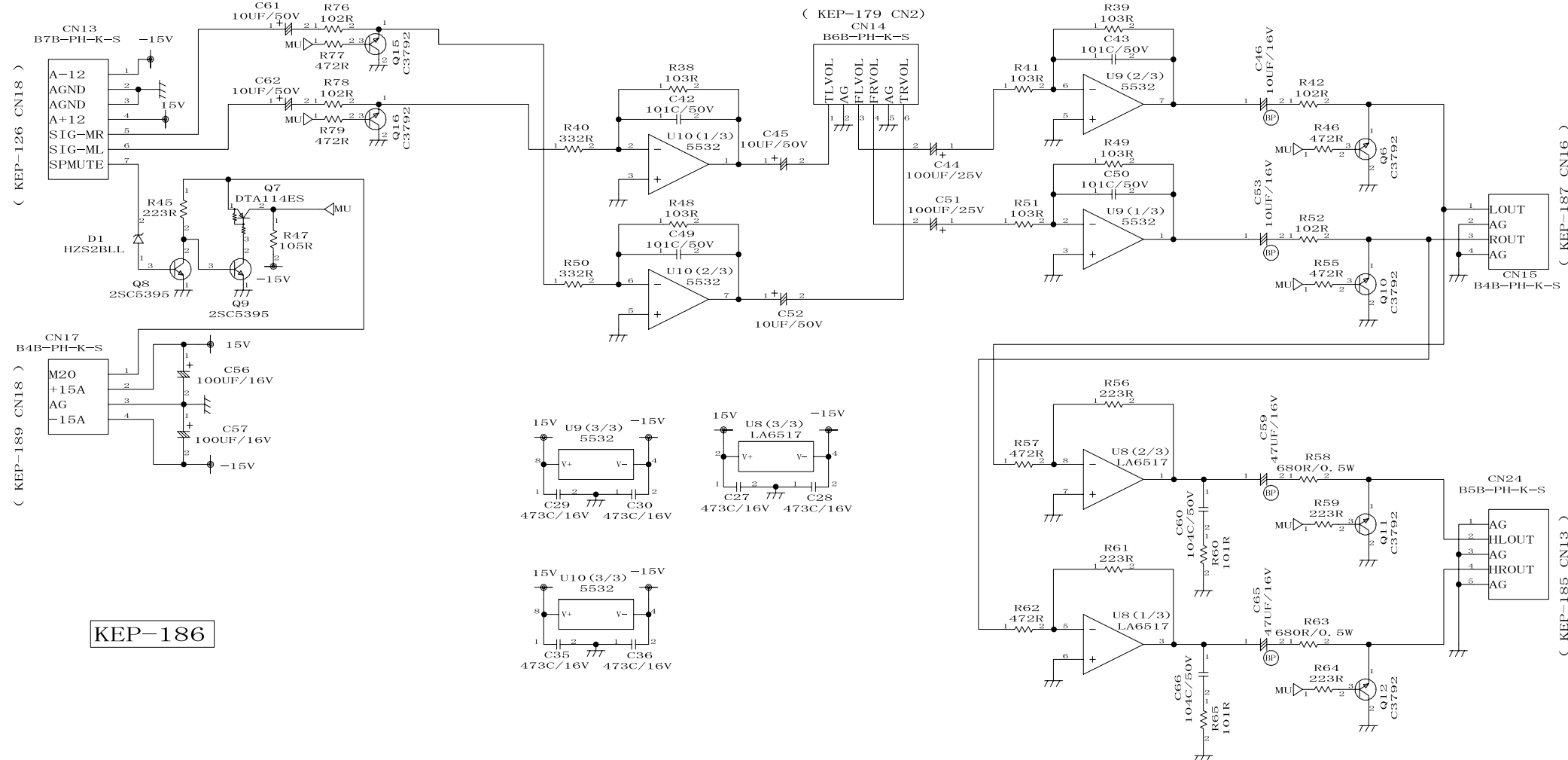
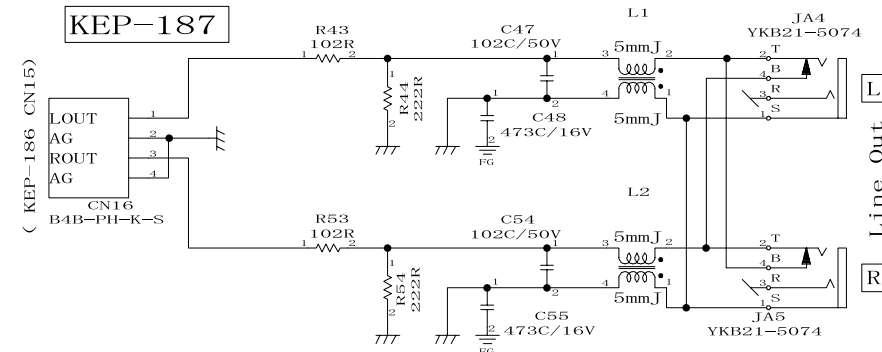
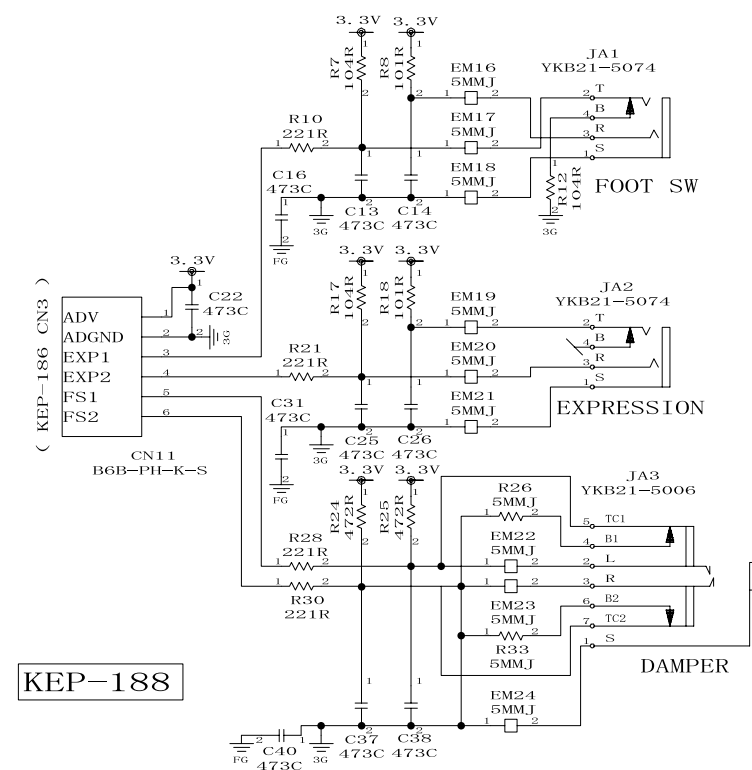


# P.W.B. KEP-186 – 189 Circuit 1/3

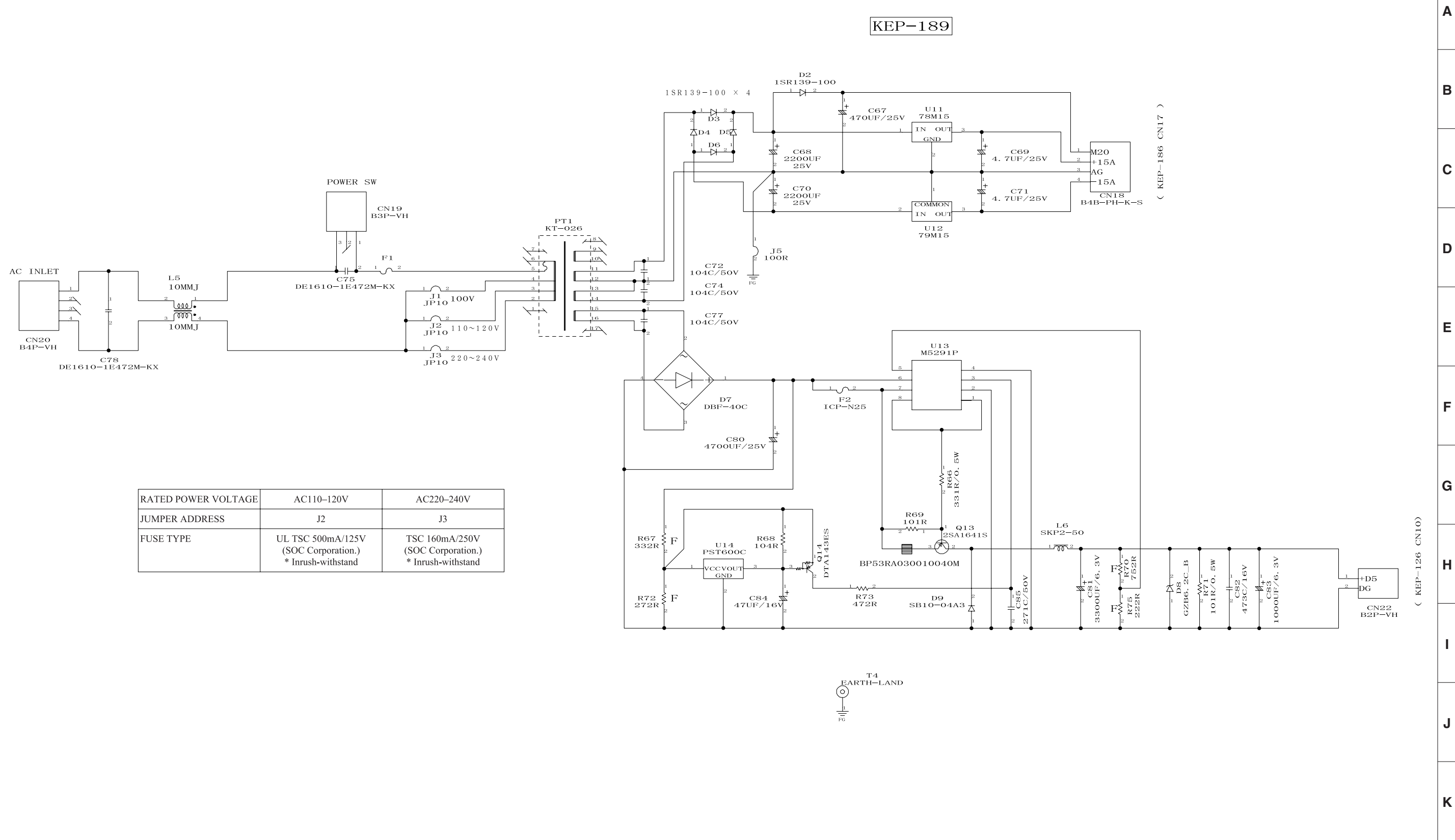
KEP-186



# ■ P.W.B. KEP-186 – 189 Circuit 2/3

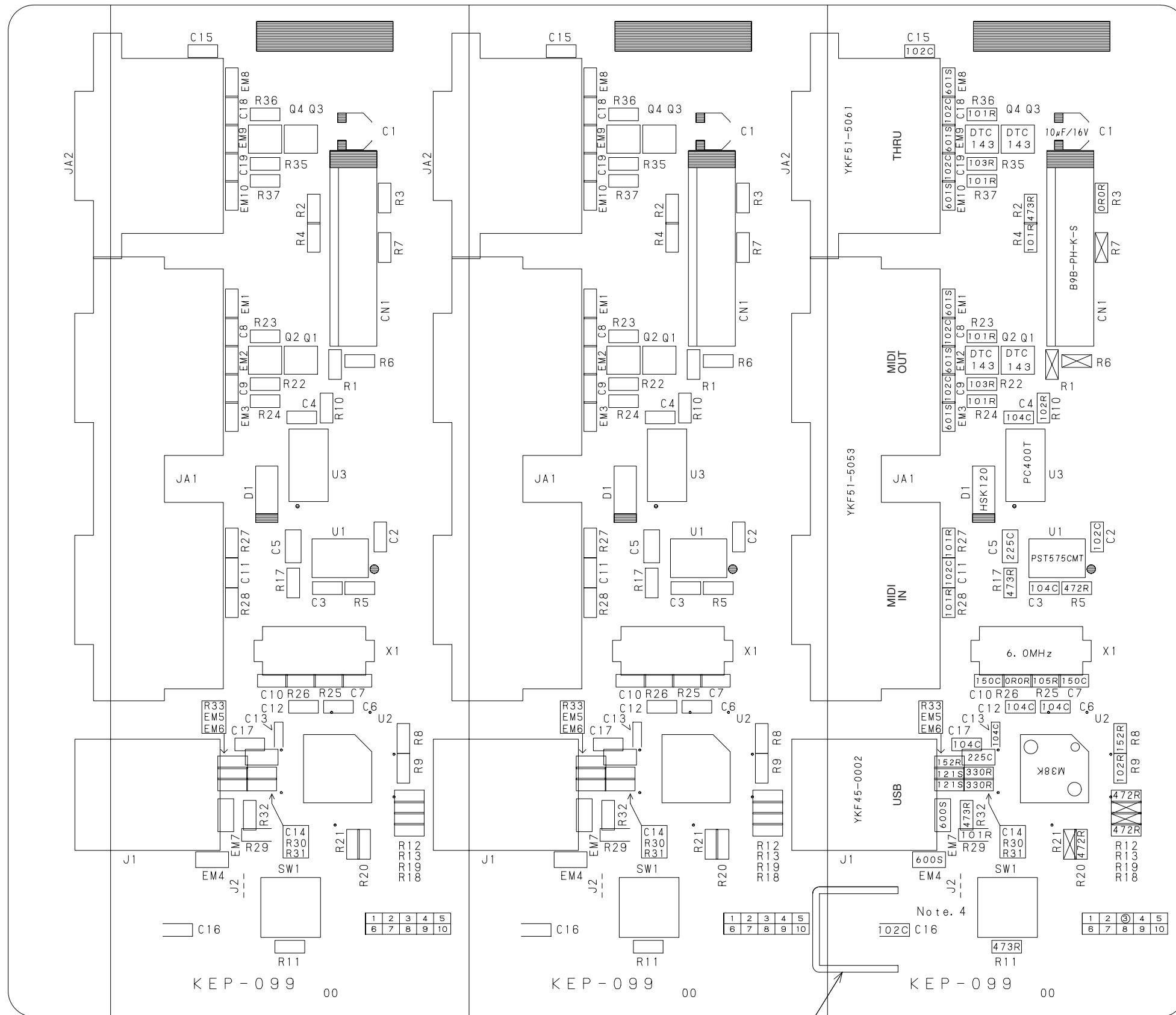


# ■ P.W.B. KEP-186 – 189 Circuit 3/3



RATED POWER VOLTAGE	AC110-120V	AC220-240V
JUMPER ADDRESS	J2	J3
FUSE TYPE	UL TSC 500mA/125V (SOC Corporation.) * Inrush-withstand	TSC 160mA/250V (SOC Corporation.) * Inrush-withstand

# P.W.B. KEP-099 (3) Assembly

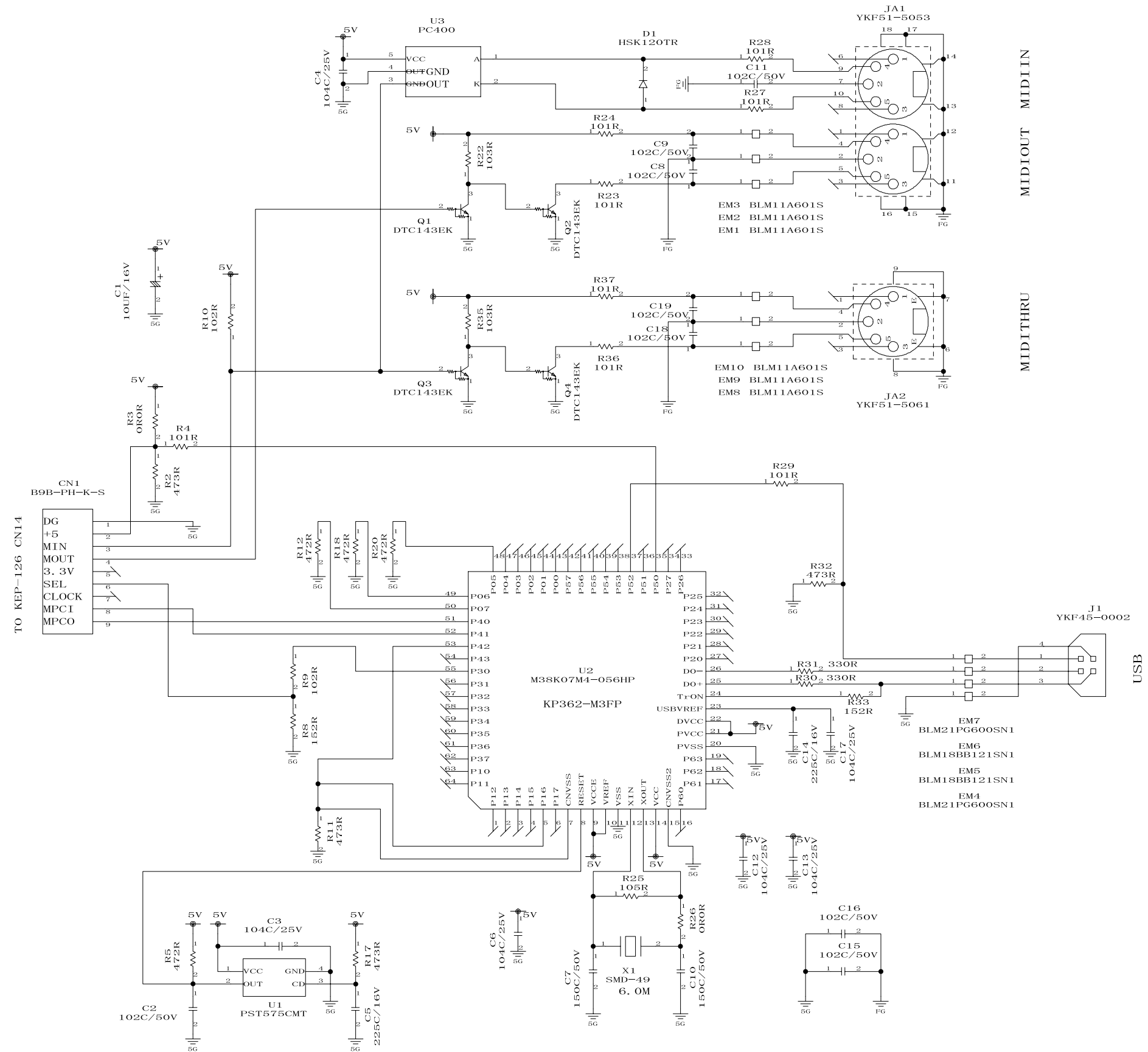


- Note/
1. 601S:BLM11A601S.
  2. 600S:BLM21PG600SN1.
  3. 121S:BLM18BB121SN1.
  4. Remove after acceptance test. (J2)

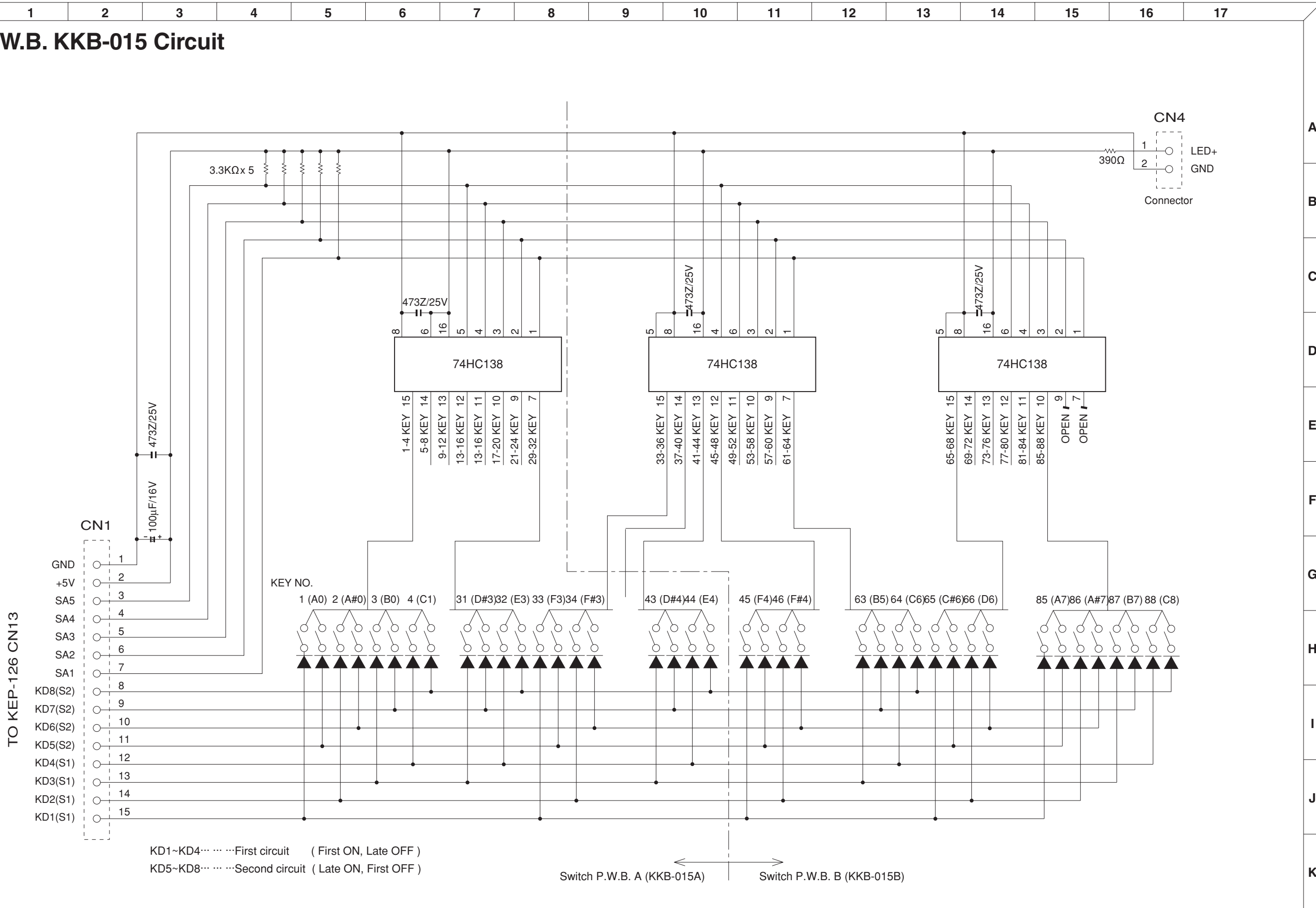
Screw Terminal:TP00799-23

X : Not Mounted

# ■ P.W.B. KEP-099 Circuit



# ■ P.W.B. KKB-015 Circuit



KD1~KD4... First circuit (First ON, Late OFF)  
 KD5~KD8... Second circuit (Late ON, First OFF)

← Switch P.W.B. A (KKB-015A)      → Switch P.W.B. B (KKB-015B)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>A</b>	<b>■ Key Switch Matrix</b>																
<b>B</b>																	
<b>C</b>																	
<b>D</b>																	
<b>E</b>																	
<b>F</b>																	
<b>G</b>																	
<b>H</b>																	
<b>I</b>																	
<b>J</b>																	
<b>K</b>																	

KEY	NOTE	IC-PIN	S1	S2	KEY	NOTE	IC-PIN	S1	S2	KEY	NOTE	IC-PIN	S1	S2	KEY	NOTE	IC-PIN	S1	S2
1	A0	U1-15	KD1	KD5	25	A2	U1-9	KD1	KD5	49	A4	U2-11	KD1	KD5	73	A6	U3-13	KD1	KD5
2	A#0	U1-15	KD2	KD6	26	A#2	U1-9	KD2	KD6	50	A#4	U2-11	KD2	KD6	74	A#6	U3-13	KD2	KD6
3	B0	U1-15	KD3	KD7	27	B2	U1-9	KD3	KD7	51	B4	U2-11	KD3	KD7	75	B6	U3-13	KD3	KD7
4	C1	U1-15	KD4	KD8	28	C3	U1-9	KD4	KD8	52	C5	U2-11	KD4	KD8	76	C7	U3-13	KD4	KD8
5	C#1	U1-14	KD1	KD5	29	C#3	U1-7	KD1	KD5	53	C#5	U2-10	KD1	KD5	77	C#7	U3-12	KD1	KD5
6	D1	U1-14	KD2	KD6	30	D3	U1-7	KD2	KD6	54	D5	U2-10	KD2	KD6	78	D7	U3-12	KD2	KD6
7	D#1	U1-14	KD3	KD7	31	D#3	U1-7	KD3	KD7	55	D#5	U2-10	KD3	KD7	79	D#7	U3-12	KD3	KD7
8	E1	U1-14	KD4	KD8	32	E3	U1-7	KD4	KD8	56	E5	U2-10	KD4	KD8	80	E7	U3-12	KD4	KD8
9	F1	U1-13	KD1	KD5	33	F3	U2-15	KD1	KD5	57	F5	U2-9	KD1	KD5	81	F7	U3-11	KD1	KD5
10	F#1	U1-13	KD2	KD6	34	F#3	U2-15	KD2	KD6	58	F#5	U2-9	KD2	KD6	82	F#7	U3-11	KD2	KD6
11	G1	U1-13	KD3	KD7	35	G3	U2-15	KD3	KD7	59	G5	U2-9	KD3	KD7	83	G7	U3-11	KD3	KD7
12	G#1	U1-13	KD4	KD8	36	G#3	U2-15	KD4	KD8	60	G#5	U2-9	KD4	KD8	84	G#7	U3-11	KD4	KD8
13	A1	U1-12	KD1	KD5	37	A3	U2-14	KD1	KD5	61	A5	U2-7	KD1	KD5	85	A7	U3-10	KD1	KD5
14	A#1	U1-12	KD2	KD6	38	A#3	U2-14	KD2	KD6	62	A#5	U2-7	KD2	KD6	86	A#7	U3-10	KD2	KD6
15	B1	U1-12	KD3	KD7	39	B3	U2-14	KD3	KD7	63	B5	U2-7	KD3	KD7	87	B7	U3-10	KD3	KD7
16	C2	U1-12	KD4	KD8	40	C4	U2-14	KD4	KD8	64	C6	U2-7	KD4	KD8	88	C8	U3-10	KD4	KD8
17	C#2	U1-11	KD1	KD5	41	C#4	U2-13	KD1	KD5	65	C#6	U3-15	KD1	KD5					
18	D2	U1-11	KD2	KD6	42	D4	U2-13	KD2	KD6	66	D6	U3-15	KD2	KD6					
19	D#2	U1-11	KD3	KD7	43	D#4	U2-13	KD3	KD7	67	D#6	U3-15	KD3	KD7					
20	E2	U1-11	KD4	KD8	44	E4	U2-13	KD4	KD8	68	E6	U3-15	KD4	KD8					
21	F2	U1-10	KD1	KD5	45	F4	U2-12	KD1	KD5	69	F6	U3-14	KD1	KD5					
22	F#2	U1-10	KD2	KD6	46	F#4	U2-12	KD2	KD6	70	F#6	U3-14	KD2	KD6					
23	G2	U1-10	KD3	KD7	47	G4	U2-12	KD3	KD7	71	G6	U3-14	KD3	KD7					
24	G#2	U1-10	KD4	KD8	48	G#4	U2-12	KD4	KD8	72	G#6	U3-14	KD4	KD8					