

# Nutube 6P1 Evaluation Board

## Specifications

**Power supply:** DC12V adapter  or external power supply (+5V~+30V)

※If you use AC adapter, please connect to “J4”.

※If you use external power supply, please connect to “TM1/2”.

TM1(RED): +5V~+30V

TM2(BLACK): GND

※There is not power switch. When you supply voltage, the power is on.

**Connections:** In L/R(RCA Jack), Out L/R(RCA Jack)、Phones Out (Stereo mini jack)

※In L/R input impedance : 100k $\Omega$

※Out L/R output impedance : 1k $\Omega$

※Out L/R recommended load impedance : over 47k $\Omega$

**Controls:** Phones Out Volume, VR2/3(adjusting bias voltage)

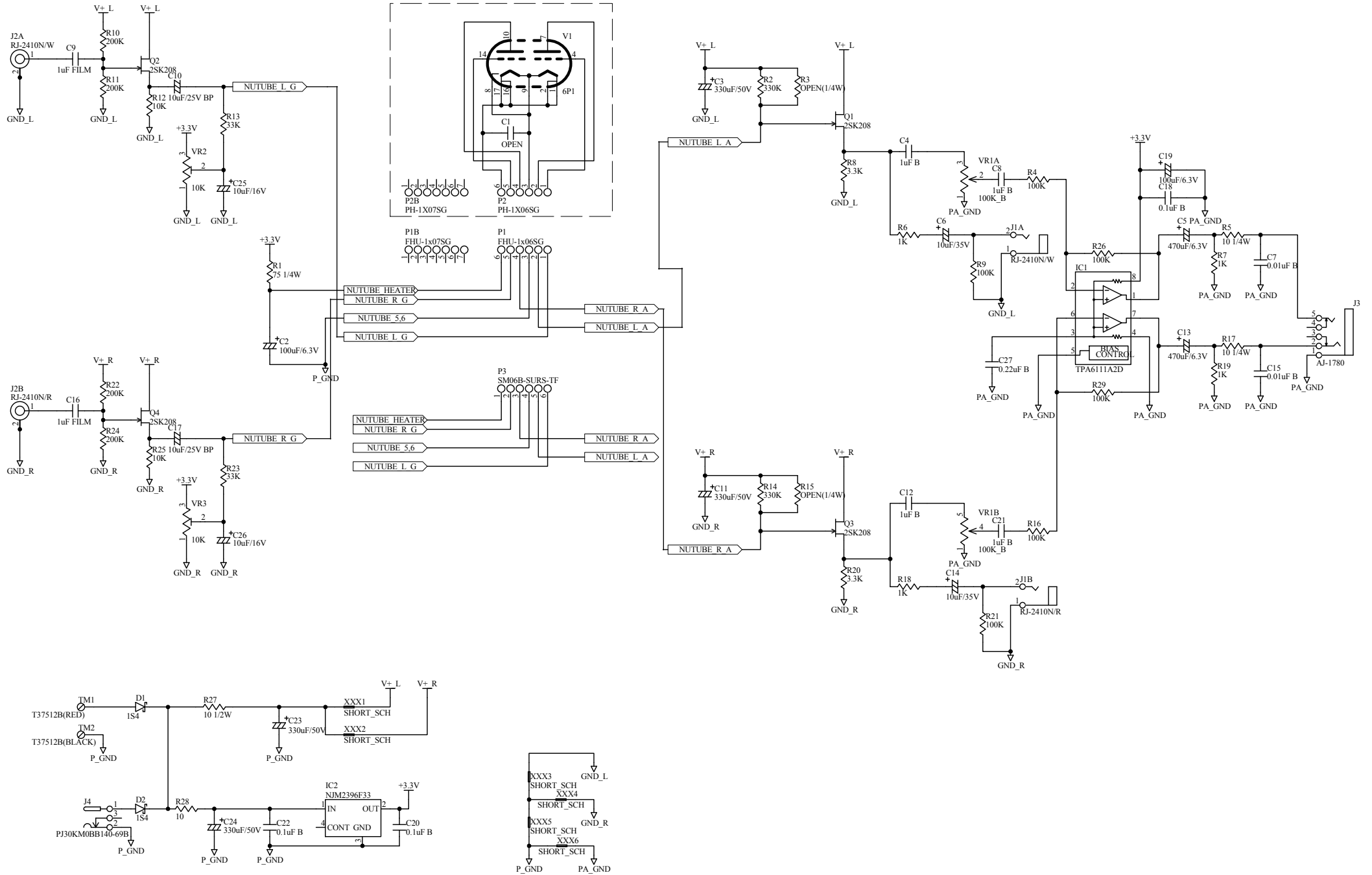
※VR2 is for L ch, VR3 is for R ch. You can adjust the bias voltage for Nutube.

**Included items:** Nutube PCB(pitch conversion: 2.00 mm to 2.54 mm)

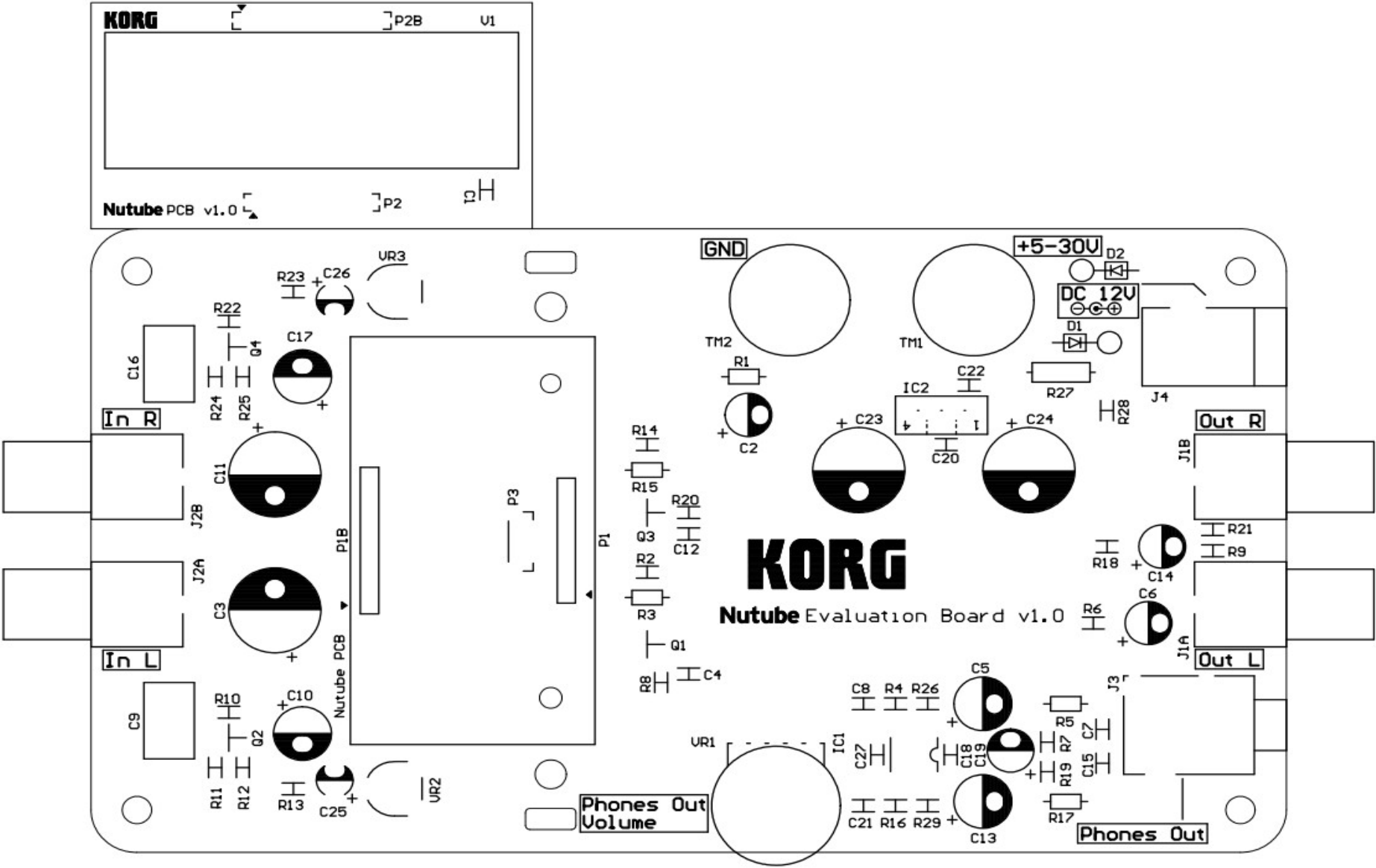
※Please connect to P1.

※P1B is dummy.

# Schematic

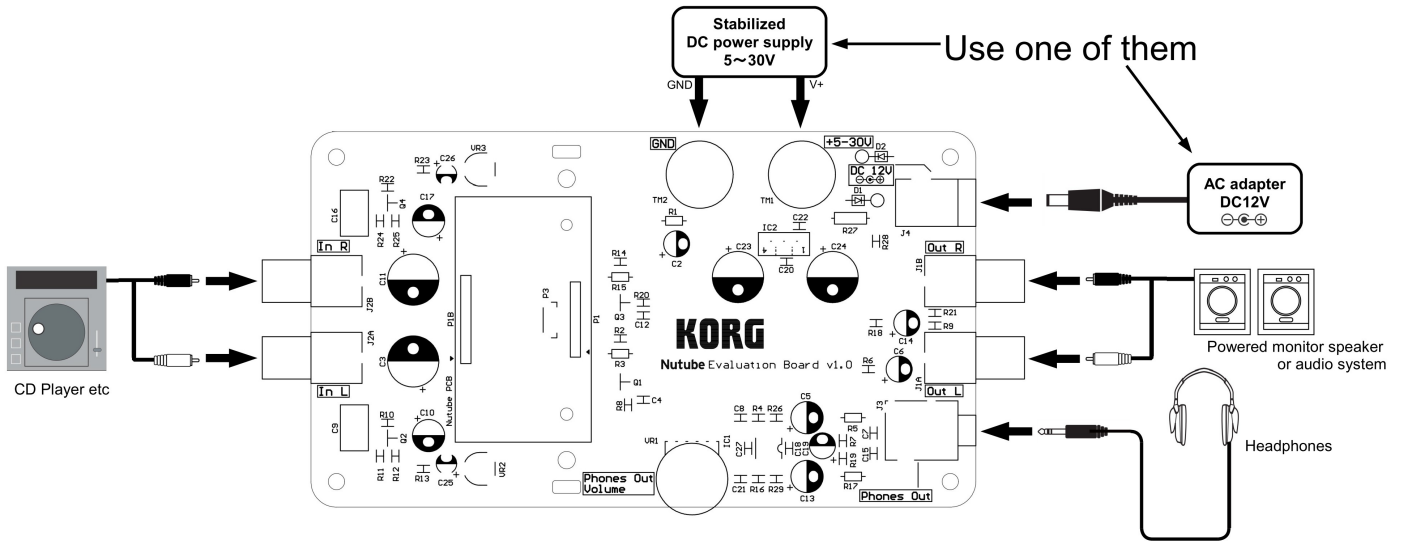


# PCB layout



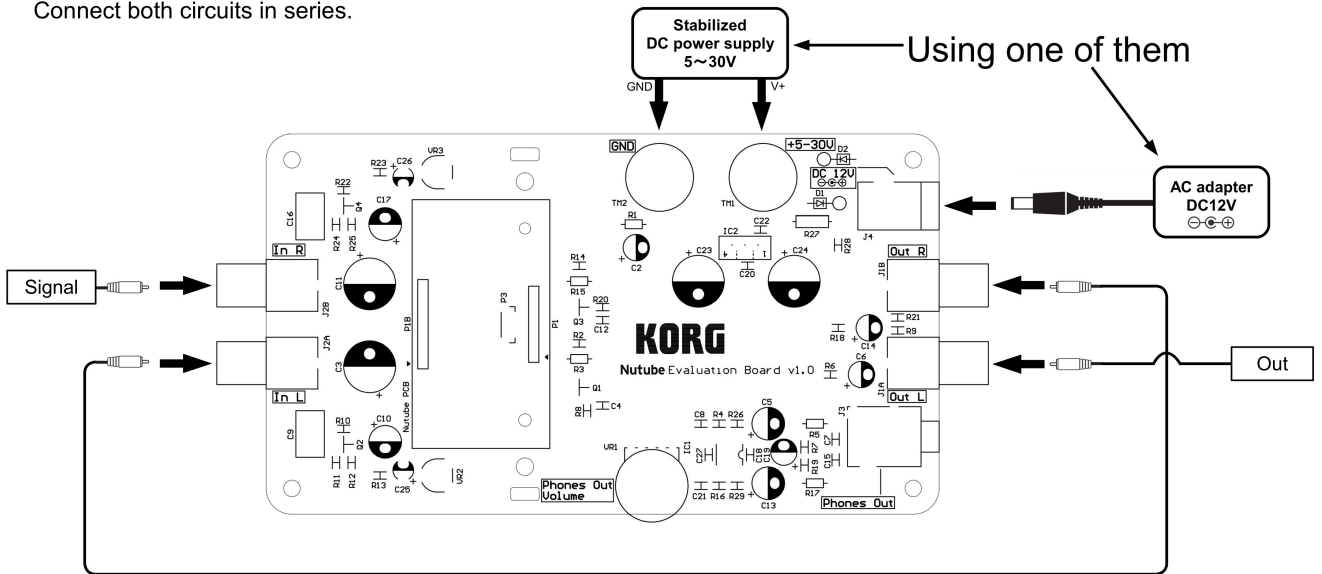
# Connection Example ①

Use one circuit for "L" and the other for "R" for stereo connection.



# Connection Example ②

Connect both circuits in series.



# Parts List

Category	Part Name	Manufacture	Specification	Qty	Designator
LDO	NJM2396F33	JRC	NJM2396F33	1	IC2
OP AMP	TPA6111A2D	TI	TPA6111A2D	1	IC1
J_FET	2SK208-Y	Tohshiba	2SK208	4	Q1,Q2,Q3,Q4
SBD	1S4	PANJIT	1S4	2	D1,D2
Chip C	GRM188B11H103KA01D	Murata	0.01uF B	2	C7,C15
Chip C	GRM188B31H104KA92D	Murata	0.1uF B	3	C18,C20,C22
Chip C	GRM188B31E224KA87D	Murata	0.22uF B	1	C27
Chip C	GRM188B31E105KA75D*	Murata	1uF B	4	C4,C8,C12,C21
Film C	TS03Q02A105JSB0B0R	SUNTAN TEC	1uF FILM	2	C9,C16
AEC	RC2-16V100MF1#	ELNA	10uF/16V	2	C25,C26
AEC(BP)	RB2-25V100ME1#	ELNA	10uF/25V BP	2	C10,C17
AEC	RC2-35V100ME1#	ELNA	10uF/35V	2	C6,C14
AEC	RC2-6V101ME1#	ELNA	100uF/6.3V	2	C2,C19
AEC	RE3-50V331M	ELNA	330uF/50V	4	C3,C11,C23,C24
AEC	RE3-6V471M	ELNA	470uF/6.3V	2	C5,C13
Chip C			OPEN	1	C1
Chip R	RPC05	Taiyo	10	1	R28
Resistor(lead)	RD50SJ10Ω	Takman	10 1/2W	1	R27
Resistor(lead)	RD25SJ10Ω	Takman	10 1/4W	2	R5,R17
Resistor(lead)	RD25SJ75Ω	Takman	75 1/4W	1	R1
Chip R	RPC05	Taiyo	1K	4	R6,R7,R18,R19
Chip R	RPC05	Taiyo	3.3K	2	R8,R20
Chip R	RPC05	Taiyo	10K	2	R12,R25
Chip R	RPC05	Taiyo	33K	2	R13,R23
Chip R	RPC05	Taiyo	100K	6	R4,R9,R16,R21,R26, R29
Chip R	RPC05	Taiyo	200K	4	R10,R11,R22,R24
Chip R	RPC05	Taiyo	330K	2	R2,R14
Resistor(lead)			OPEN(1/4W)	2	R3,R15
PhoneJACK	AJ-1780	UNITEDAU_VI	AJ-1780	1	J3
DC JACK	PJ30KM0BB140-69B	WELL LONG	PJ30KM0BB140-69B	1	J4
RCAJACK	RJ-2410N/R	UNITEDAU_VI	RJ-2410N/R	2	J1B,J2B
RCAJACK	RJ-2410N/W	UNITEDAU_VI	RJ-2410N/W	2	J1A,J2A
Connector	FHU-1x42SG		FHU-1x06SG	6/42	P1
Connector	FHU-1x42SG		FHU-1x07SG	7/42	P1B
Connector	PH-1X40SG	USECONN ELE	PH-1X06SG	6/40	P2
Substitute	C00167				
Connector	PH-1X40SG	USECONN ELE	PH-1X07SG	7/40	P2B
Substitute	C00167	Akidsuki			
Connector	SM06B-SURS-TF	JST	SM06B-SURS-TF	1	P3
Terminal	T37512B(BLACK)	AITENDO	T37512B(BLACK)	1	TM2
Terminal	T37512B(RED)	AITENDO	T37512B(RED)	1	TM1
Tube	6P1	KORG	6P1	1	V1
Trimmer	RH0615C14J	Alps	10K	2	VR2,VR3
Substitute	F655 M10K JC	Polyshine			
VR	F-1001GP-6_R T1.0 x 14/B7 B100K	PS	100K B	1	VR1