Designated client product

This product will be discontinued its production in the near term.
And it is provided for customers currently in use only, with a time limit.
It can not be available for your new project. Please select other new or existing products.
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New Japan Radio Co.,Ltd.

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4CH VIDEO AMPLIFIER WITH SW&SD/ HD LPF

■ GENERAL DESCRIPTION

The **NJM2525** is 4ch video amplifier with SD/HD LPF.

The **NJM2525** includes 2in-1out selector for the composite and component signal. The isolation amplifier eliminates the common mode noise from external equipment.

The **NJM2525** is suitable for the AV equipment such as the home theater systems and AV receivers that switch the internal Video signal and the external Video signal.

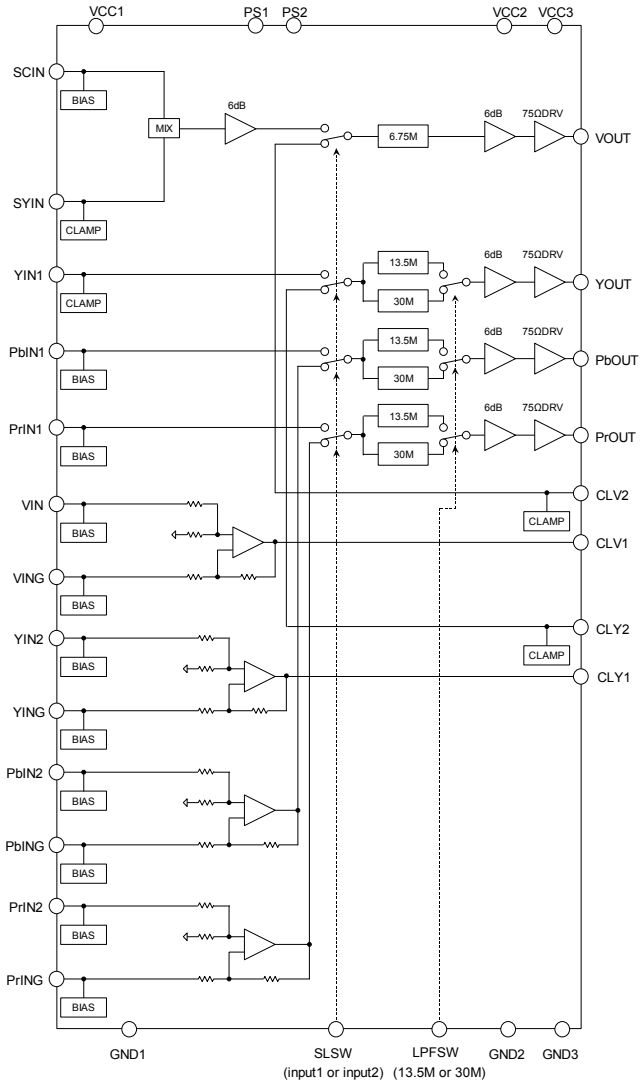
■ PACKAGE OUTLINE

NJM2525V

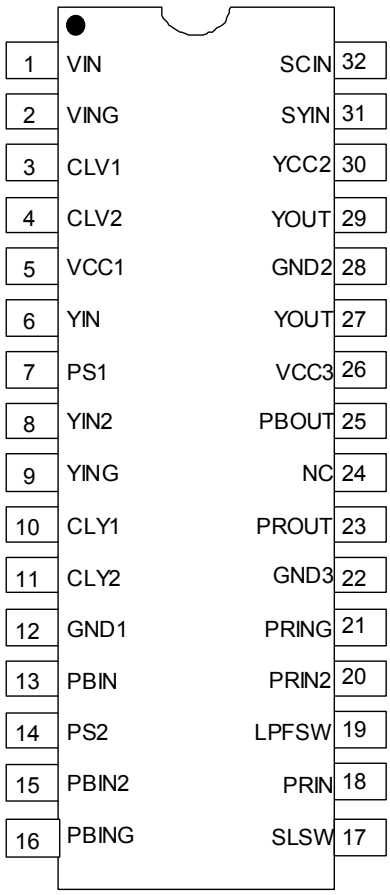
■ FEATURES

- Operating Voltage 4.5 to 5.5V
- SD/ HD LPF 6.75MHz/ 13.5MHz/ 30MHz
- 6dB amplifier
- 75Ω Driver Circuit
- Y/C MIX Circuit
- Isolation amplifier
- Power Save Circuit
- Bipolar Technology
- Package Outline SSOP32

■ BLOCK DIAGRAM



■ PIN CONFIGURATION (SSOP32)



No.	Symbol	Function	No.	Symbol	Function
1	VIN	V input	17	SLSW	Input control switch
2	VING	VGND input	18	PRIN	PR input
3	CLV1	V isolation output	19	LFPSW	LPF control switch
4	CLV2	V isolation input	20	PRIN2	PR input 2
5	VCC1	Power Supply Terminal 1	21	PRING	PRGND input
6	YIN	Y input	22	GND3	GND 3
7	PS1	Power Save 1	23	PROUT	PR output
8	YIN2	Y input 2	24	NC	No Connection
9	YING	YGND input	25	PBOUT	PB output
10	CLY1	Y isolation output	26	VCC3	Power Supply Terminal 3
11	CLY2	Y isolation input	27	YOUT	Y output
12	GND1	GND 1	28	GND2	GND 2
13	PBIN	PB input	29	VOUT	V output
14	PS2	Power Save 2	30	VCC2	Power Supply Terminal 2
15	PBIN2	PB input 2	31	SYIN	SY input
16	PBING	PBGND input	32	SCIN	SC input

■ **ABSOLUTE MAXIMUM RATINGS** (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	10.0	V
Power Dissipation	P_D	1250 (Note)	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +150	°C

(Note) At on a board of EIA/JEDEC specification. (114.3 x 76.2 x 1.6mm 2 layers, FR-4)

■ **RECOMMENDED OPEARATING CONDITION** (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		4.5	5.0	5.5	V

■ **ELECTRICAL CHARACTERISTICS** (Ta=25°C, V^+=5V, R_L=150Ω)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I_{CC}	No Signal	-	50	65	mA
Operating Current at Power Save	Isave	Power Save Mode	-	0.6	1.2	mA
Maximum Output Voltage Swing	Vom	Vin=100kHz, Sine Signal, THD=1%	2.2	-	-	Vp-p
Voltage Gain1	Gv1	(Note 7)Vin=1MHz, 1.0Vp-p, Sine Signal	5.6	6.1	6.6	dB
Voltage Gain2	Gv2	(Note 3)Vin=3.58MHz,0.3Vpp,Sine Signal	5.6	6.1	6.6	dB
Gain Difference Between channel	ΔGvI	(Note 1) Vin=1MHz, 1.0Vp-p,Sine Signal	-0.2	0	+0.2	dB
Low Pass Filter Characteristic 1	Gfy6.75M	(Note 2) 6.75MHz/1MHz, 1.0Vp-p Sine Signal	-1.0	0	1.0	dB
	Gfy108M	(Note 2) 108MHz/1MHz, 1.0Vp-p Sine Signal	-	-40.0	-24.0	dB
Low Pass Filter Characteristic 2	Gfc6.75M	(Note 3)6.75MHz/3.58MHz, 0.3Vp-p Sine Signal	-1.0	0	1.0	dB
	Gfc108M	(Note 3) 108MHz/3.58MHz, 0.3Vp-p Sine Signal	-	-40.0	-24.0	dB
Low Pass Filter Characteristic 3	Gf_{SD}13.5M	(Note 4) 13.5MHz/1MHz, 1.0Vp-p, Sine Signal	-1.0	0	1.0	dB
	Gf_{SD}108M	(Note 4) 108MHz/1MHz, 1.0Vp-p, Sine Signal	-	-40.0	-24.0	dB
Low Pass Filter Characteristic 4	Gf_{HD}30M	(Note 4) 30MHz/1MHz, 1.0Vp-p, Sine Signal	-1.0	0	1.0	dB
	Gf_{HD}148M	(Note 4) 148MHz/1MHz, 1.0Vp-p, Sine Signal	-	-40.0	-24.0	dB
Differential Gain	DG	(Note 5) Vin=1.0Vp-p, 10step Video Signal	-	0.5	-	%
Differential Phase	DP	(Note 5) Vin=1.0Vp-p, 10step Video Signal	-	0.5	-	deg
S/N Ratio1	SN1	(Note 2) Vin=1.0Vp-p, 100% White video signal, RL=75Ω, 100KHz to 6MHz	-	70	-	dB
S/N Ratio2	SN2	(Note 4) Vin=1.0Vp-p, 100% White video signal, RL=75Ω, 100KHz to 6MHz,	-	80	-	dB
S/N Ratio3	SN3	(Note 6) Vin=1.0Vp-p, 100% White video signal, RL=75Ω, 100KHz to 6MHz,	-	75	-	dB
Common Mode Noise Rejection Ratio	CMR	(Note 4) Vin=20KHz,Vin=1Vp-p,Sine Signal	-	-55	-	dB
Cross Talk	CT	Vin=4.43MHz,Vin=1Vp-p,Sine Signal	-	-60	-	dB

(Note 1) YOUT/ PbOUT/ PrOUT (Note 2) SCIN,SYIN-VOUT
(Note 3) SCIN – VOUT (Note 4) YIN-YOUT,PbIN-PbOUT,PrIN-PrOUT

(Note 5) SYIN – VOUT, YIN – YOUT (Note 6)VIN-VOUT,YIN2-YOUT,PbIN2-PbOUT,PrIN2-PrOUT
(Note 7) SYIN/VIN - VOUT,YIN1/YIN2 - YOUT,PbIN1/PbIN2 - PbOUT,PrIN1/PrIN2 - PrOUT

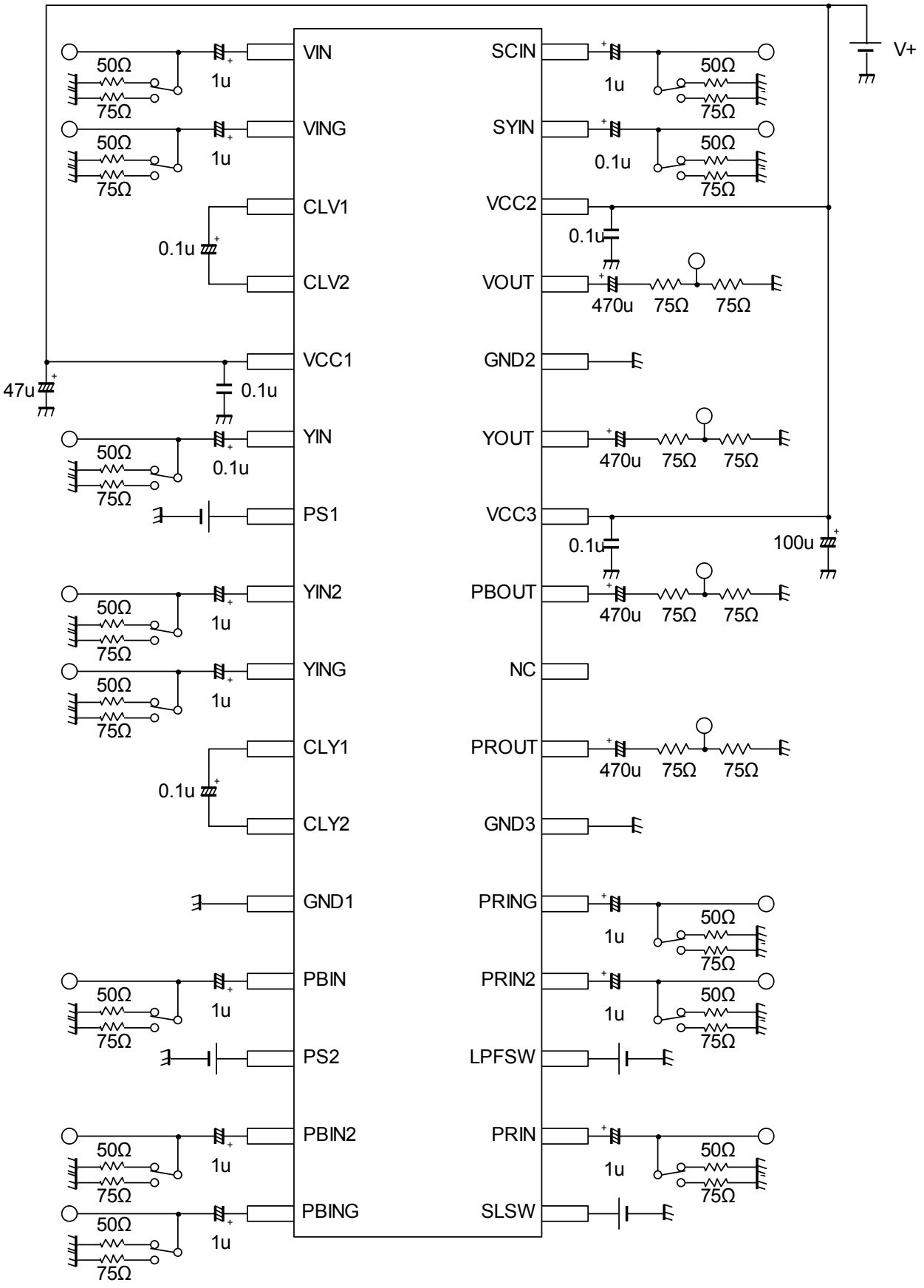
■ **ELECTRICAL CHARACTERISTICS** (Ta=25°C, V^+= 5V, R_L=150Ω)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
SW Voltage High Level	VthH		2.0	-	V^+	V
SW Voltage Low Level	VthL		0	-	1.0	V
Switch inflow current High Level	IthH	V_{SLSW}=V_{LPFSW}=V_{PS}1=V_{PS2}=5V	-	-	120	μA
Switch inflow current Low Level	IthL	V_{SLSW}=V_{LPFSW}=V_{PS}1=V_{PS2}=0.3V	-	-	8.0	μA

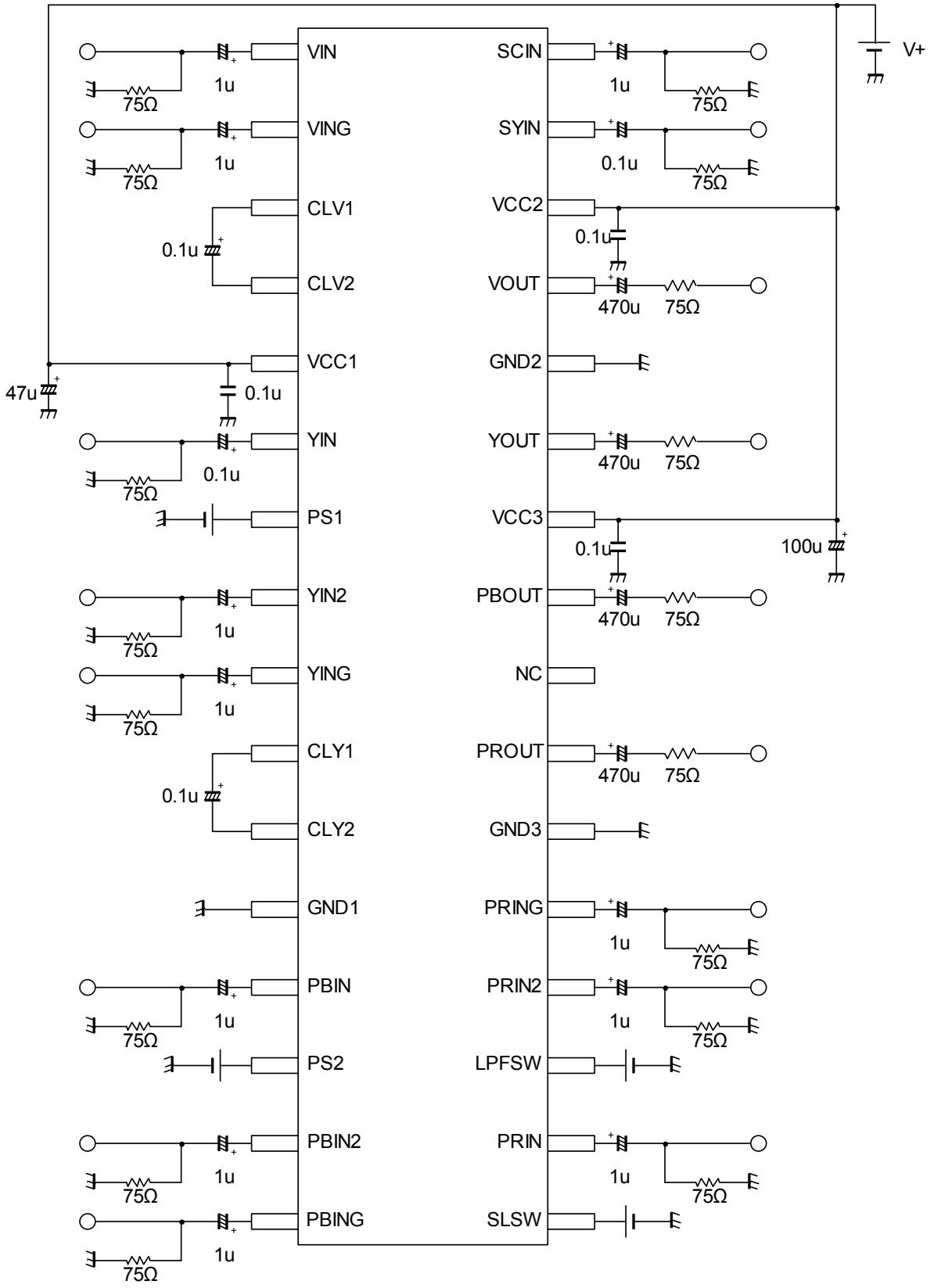
■ **CONTROL TERMINAL**

PARAMETER	STATUS	NOTE
PS1 (Power Save1)	H	(SY, V, SC) Power Save: OFF, Active
	L	(SY, V, SC) Power Save: ON, Mute
	OPEN	(SY, V, SC) Power Save: ON, Mute
PS2 (Power Save2)	H	(Y, Pb, Pr) Power Save: OFF, Active
	L	(Y, Pb, Pr) Power Save: ON, Mute
	OPEN	(Y, Pb, Pr) Power Save: ON, Mute
SLSW (Y/PbPrOUT)	H	YIN2/PbIN2/PrIN2/VIN
	L	YIN1/PbIN1/PrIN1/SCIN/SYIN
	OPEN	YIN1/PbIN1/PrIN1/SCIN/SYIN
LPFSW (LPF)	H	30MHz LPF
	L	13.5MHz LPF
	OPEN	13.5MHz LPF

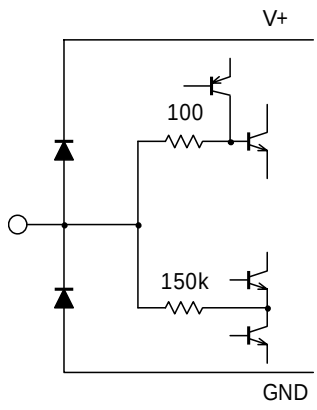
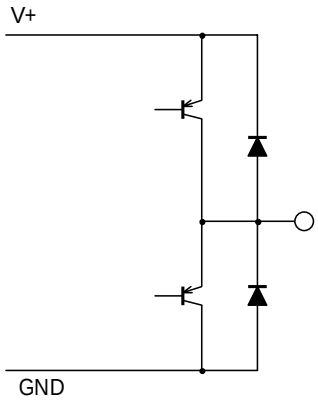
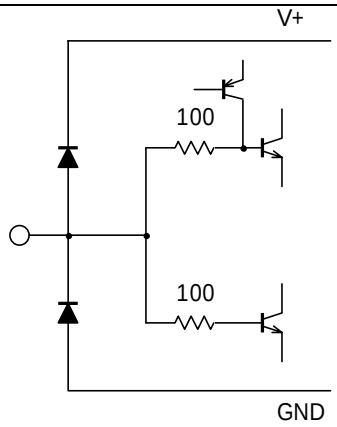
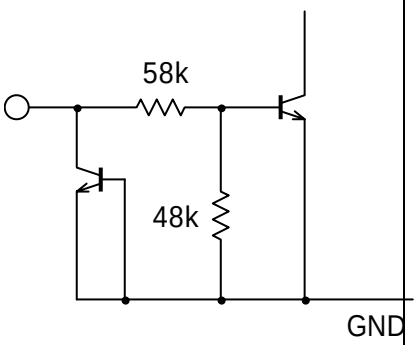
■MEASUREMENT CIRCUIT

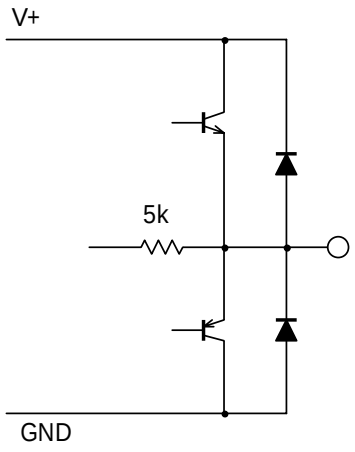


■APPLICATION CIRCUIT



■**TERMINAL DESCRIPTION**

PIN No.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT	TERMINAL VOLTAGE
1 2 8 9 13 15 16 18 20 21 32	VIN VING YIN2 YING PBIN PBIN2 PBING PRIN PRIN2 PRING SCIN	V input VGND input Y input 2 YGND input PB input PB input2 PBGND input PR input PR input 2 PRGND input SC input		2.5V
3 10	CLV1 CLY1	V isolation output Y isolation output		2.5V
4 6 11 31	CLV2 YIN CLY2 SYIN	V isolation input Y input Y isolation input SY input		1.7V
7 14 17 19	PS1 PS2 SLSW LPFSW	Power Save 1 Power Save 2 Input control switch LPF control switch		-

PIN No.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT	TERMINAL VOLTAGE
23	PROUT	PR output		2.5V
25	PBOUT	PB output		2.5V
27	YOUT	Y output		1.4V
29	VOUT	V output		1.4V