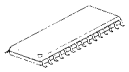
4CH VIDEO AMPLIFIER FOR SCART

■ GENERAL DESCRIPTION

The **NJM2582** is a 4ch video amplifier for SCART connecter. It can output DC that conforms to the SCART connector.

The **NJM2582** is suitable for the video application with the SCART connector.

■ PACKAGE OUTLINE

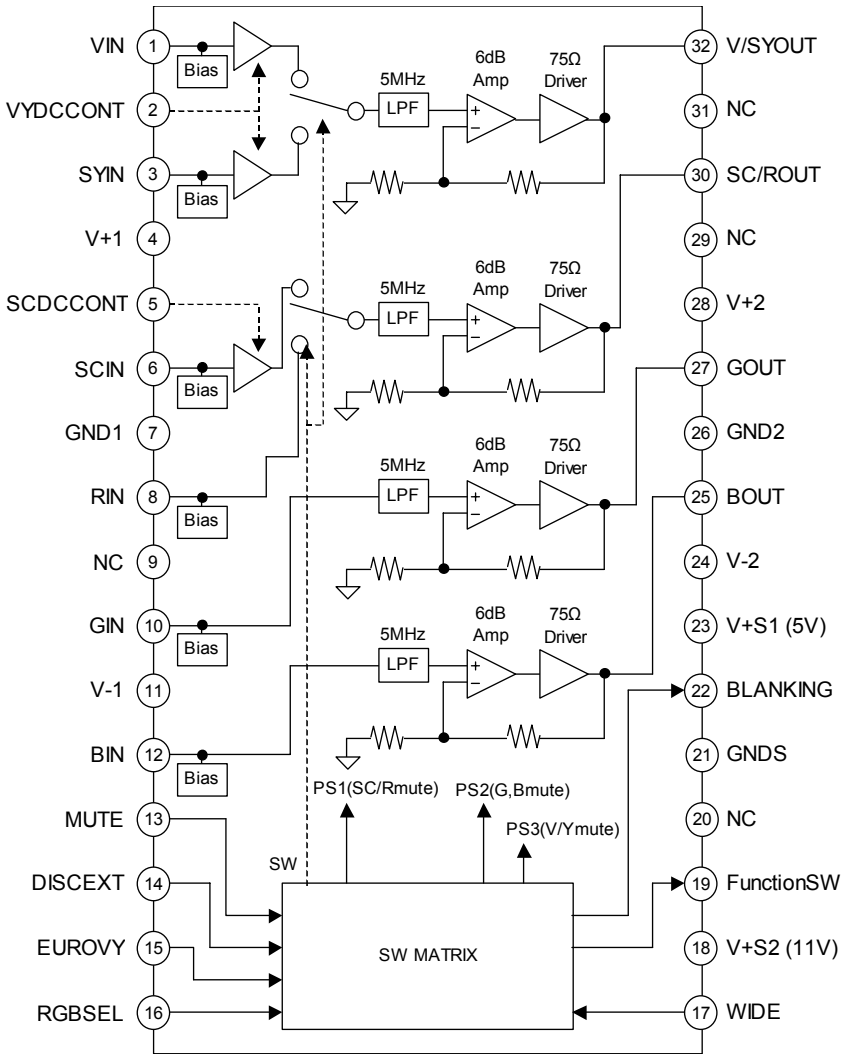


NJM2582V

■ FEATURES

- Operating Voltage ±5V, +5V, +11V
- 6input 4output
- 2input 1output Video SW
- Internal LPF
- 6dB Amplifier
- Internal 75Ω Driver Circuit
- DC output for SCART (FUNCTION SW, BLANKING)
- Power Save Circuit
- Bipolar Technology
- Package Outline SSOP32

■BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage1	V^+/V^-	±6.5	V
Supply Voltage2	V^+	+13	V
Power Dissipation	P_D	1250(Note1)	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +150	°C

(Note1) At on a board of EIA/JEDEC specification. (114.3 x 76.2 x 1.6mm Two layers, FR-4)

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage1	Vopr1	V+1, V+2, V+S1	4.5	5.0	5.5	V
Operating Voltage2	Vopr2	V-1, V-2	-5.5	-5.0	-4.5	V
Operating Voltage3	Vopr3	V+S2	10.5	11.0	11.5	V

■**ELECTRICAL CHARACTERISTICS** (Ta=25°C,V^+1 to V^+2=5V, V^-1 to V^-2=-5V, V^+S1=+5V,V^+S2=+11V, R_L=150Ω)

▪ Input signal condition

(SYIN, VIN, RIN, GIN, BIN) Video sync tip= 0V, Sine Signal Bottom= 0V (SCIN) Offset= 0.6V

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current1	$I_{CC}1$	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=L	-	45.0	60.0	mA
Operating Current2	$I_{ee}2$	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=L	-45.0	-35.0	-	mA
Operating Current3	$I_{CC}3$	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=H	-	45.0	60.0	mA
Operating Current4	$I_{ee}4$	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=H	-55.0	-40.0	-	mA
Operating Current at Power Save	Isave	(Note3) No Signal V+=5V	-	4.0	5.5	mA
Maximum Output Voltage Swing	Vom	(SYIN, VIN, RIN, GIN, BIN) Vin=100kHz, Sine Signal, THD=1%	3.0	4.0	-	Vp-p
Voltage Gain1	Gv1	(SYIN, VIN, RIN, GIN, BIN) Vin=1MHz, 1.0Vp-p, Sine Signal	5.6	6.0	6.4	dB
Voltage Gain2	Gv2	(SCIN) Vin=4.43MHz, 0.3Vp-p,Sine Signal	5.6	6.0	6.4	dB
Gain Difference Between channel	ΔGvI	(SYIN, VIN, RIN, GIN, BIN) Vin=1MHz, 1.0Vp-p,Sine Signal	-0.2	0	+0.2	dB
Low Pass Filter Characteristic 1	Gfy5M	(SYIN, VIN, RIN, GIN, BIN) 5MHz/1MHz, 1.0Vp-p, Sine Signal	-1.0	0	0.5	dB
	Gfy27M	(SYIN, VIN, RIN, GIN, BIN) 27MHz/1MHz, 1.0Vp-p, Sine Signal	-	-25.0	-14.0	dB
Low Pass Filter Characteristic 2	Gfc5M	(SCIN) 5MHz/4.43MHz, 0.3Vp-p, Sine Signal	-1.0	0	0.5	dB
	Gfc27M	(SCIN) 27MHz/4.43MHz, 0.3Vp-p, Sine Signal	-	-25.0	-14.0	dB

(Note2) MUTE, DISCEXT, EUROVY = H , WIDE, RGBSEL = L
(Note3) MUTE = L

■**ELECTRICAL CHARACTERISTICS** (Ta=25°C,V^+1 to V^+2=5V, V^-1 to V^-2=-5V, V^+S1=+5V,V^+S2=+11V, R_L=150Ω)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Group Delay	GD	5MHz/1MHz	-	8.0	-	nSec
Cross talk	CT	(SYIN, VIN, RIN, GIN, BIN) 4.43MHz, 1.0Vp-p, Sine Signal (SCIN) 4.43MHz, 0.3Vp-p, Sine Signal	-	-70	-	dB
Differential Gain	DG	(SYIN, VIN, RIN, GIN, BIN) Vin=1.0Vp-p, 10step Video Signal	-	0.3	-	%
Differential Phase	DP	(SYIN, VIN, RIN, GIN, BIN) Vin=1.0Vp-p, 10step Video Signal	-	0.3	-	deg
S/N Ratio	SN	(SYIN, VIN, RIN, GIN, BIN) Vin=1.0Vp-p,100% White video signal, RL=75Ω,100KHz to 6MHz	-	80	-	dB

■**ELECTRICAL CHARACTERISTICS** (Ta=25°C,V^+1 to V^+2=5V, V^-1 to V^-2=-5V, V^+S1=+5V,V^+S2=+11V, R_L=150Ω)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switch Change Voltage High Level	VthH	MUTE, DISCEXT, EUROVY, RGBSEL WIDE, VYDCCONT, SCDCCONT	2.5	-	V^+	V
Switch Change Voltage Low Level	VthL	MUTE, DISCEXT, EUROVY, RGBSEL WIDE, VYDCCONT, SCDCCONT	0	-	1.0	V
V/SY Output Voltage H	V_{SYH}	TP1, VYDCCONT=H	-0.4	-0.3	-0.2	V
V/SY Output Voltage L	V_{SYL}	TP1, VYDCCONT=L	-0.1	0.0	0.1	V
SC Output Voltage H	V_{SCH}	TP2, SCDCCONT=H	-0.7	-0.6	-0.5	V
SC Output Voltage L	V_{SCL}	TP2, SCDCCONT=L	-0.1	0.0	0.1	V
RGB Output Voltage	V_{RGB}	TP2, TP3, TP4	0.0	-	2.0	V
Function Switch Output Voltage H	V_{FH}	TP6	10.0	-	11.0	V
Function Switch Output Voltage M	V_{FM}	TP6	5.3	-	6.3	V
Function Switch Output Voltage L	V_{FL}	TP6	-	-	1.5	V
Blanking Output Voltage H	V_{BH}	TP5	1.5	-	2.5	V
Blanking Output Voltage L	V_{BL}	TP5	-	-	0.3	V
Switch inflow current High Level	I_{SWH}		-	-	120	uA
Switch inflow current Low Level	I_{SWL}		-	-	8	uA

■**LOGICAL TABLE**

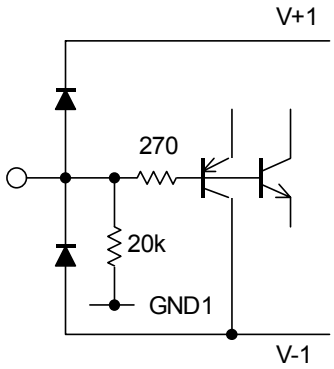
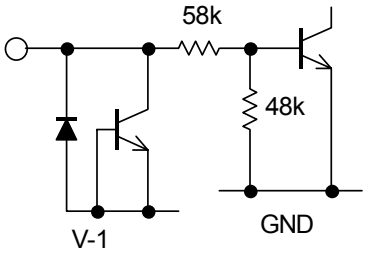
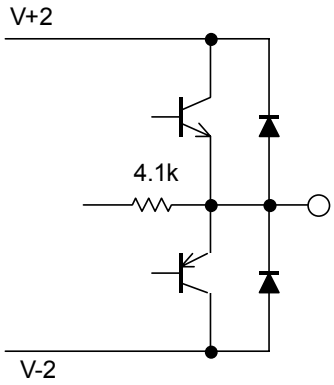
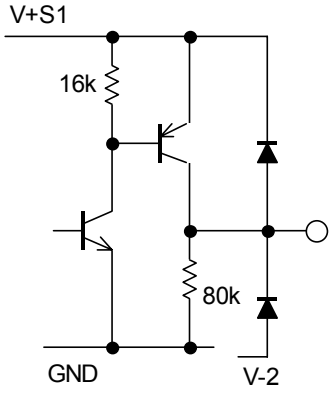
INPUT				4chAMP OUT	MONITOR	BLANKING	
MUTE	DISCEXT	EUROVY	RGBSEL				
H	H	H	H	V	V	L	
H	H	H	L	V, RGB	RGB	H	
H	H	L	H	SY	SY	L	
H	H	L	L	*	*	L	
H	L	H	H	V	TV Mode	L	
H	L	H	L	V, RGB		H	
H	L	L	H	SY		L	
H	L	L	L	*		L	
L	H	H	H	4ch OFF	OFF	L	No use
L	H	H	L			H	
L	H	L	H			L	
L	H	L	L			L	
L	L	H	H		TV Mode	L	
L	L	H	L			L	
L	L	L	H			L	
L	L	L	L	4ch OFF	TV Mode	L	

* No use

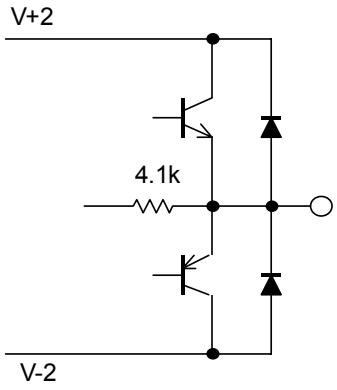
INPUT		OUTPUT	Mode
DISCEXT	WIDE	Function SW	
H	H	M	DVD
H	L	H	
L	H	L	TV
L	L	L	

MUTE	H	4chAMP ON
	L	4chAMP OFF
DISCEXT	H	DVD MODE
	L	TV MODE
EUROVY	H	V OUT
	L	SY/SC OUT
RGBSEL	H	RGB OFF
	L	RGB ON
WIDE	H	16: 9
	L	4: 3
VYDCCONT	H	-0.3V
	L	0V
SCDCCONT	H	-0.6V
	L	0V

■EQUIVALENT CIRCUIT

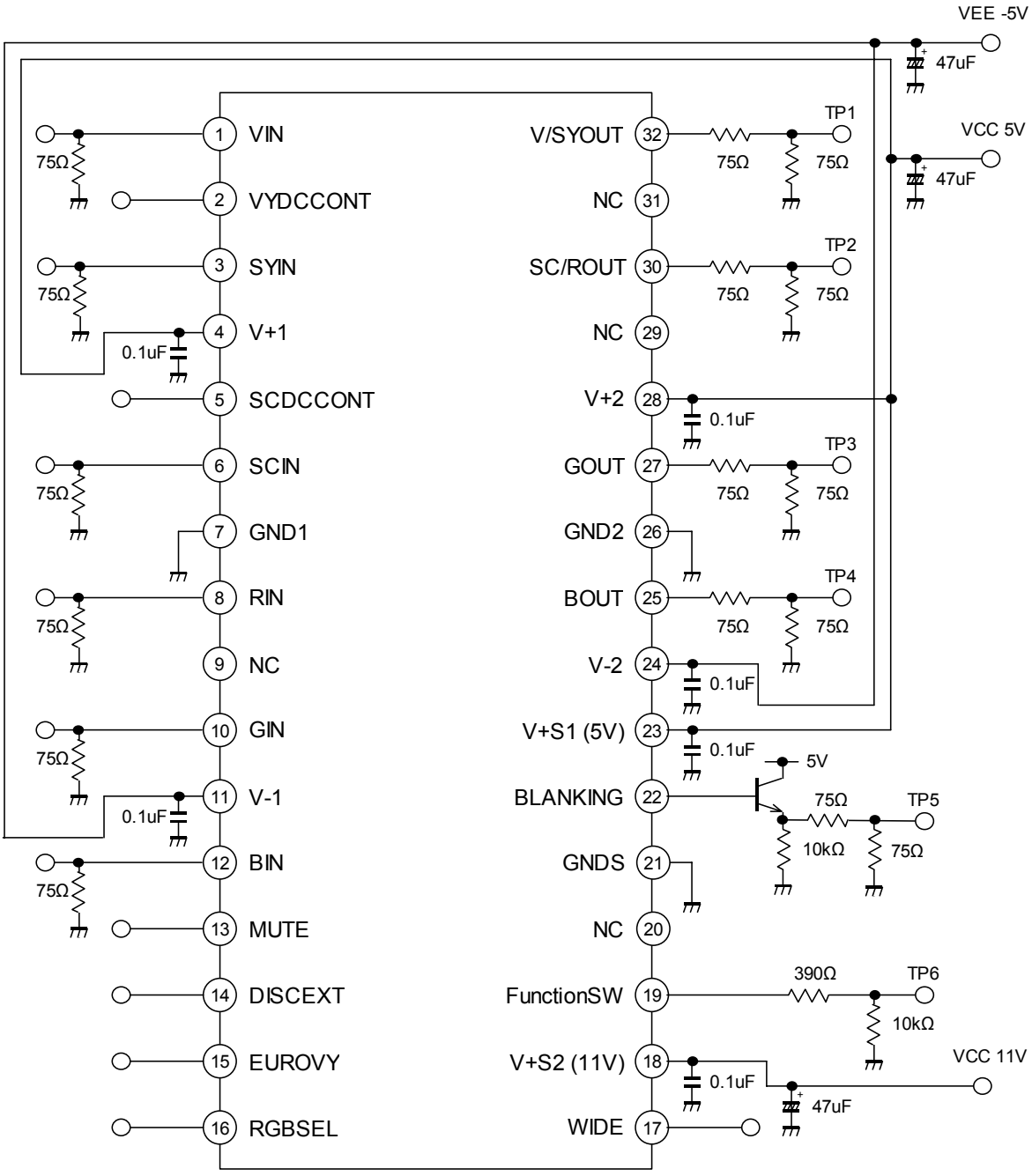
PIN No.	PIN NAME	EQUIVALENT CIRCUIT	DC VOLTAGE	NOTE
1 3 6 8 10 12	VIN SYIN SCIN RIN GIN BIN		0V	
2 5 13 14 15 16 17	VYDCCONT SCDCCONT MUTE DISCEXT EUROVY RGBSEL WIDE		0V	
19	FunctionSW		0V 6V 10.5V	
22	Blanking		0V 2.1V	

■**EQUIVALENT CIRCUIT**

PIN No.	PIN NAME	EQUIVALENT CIRCUIT	DC VOLTAGE	NOTE
25	BOUT		0.1V	
27	GOUT		0.1V	
30	SCROUT		0V, -1.2V, 0.1V	
32	VSYOUT		0V, -0.6V	

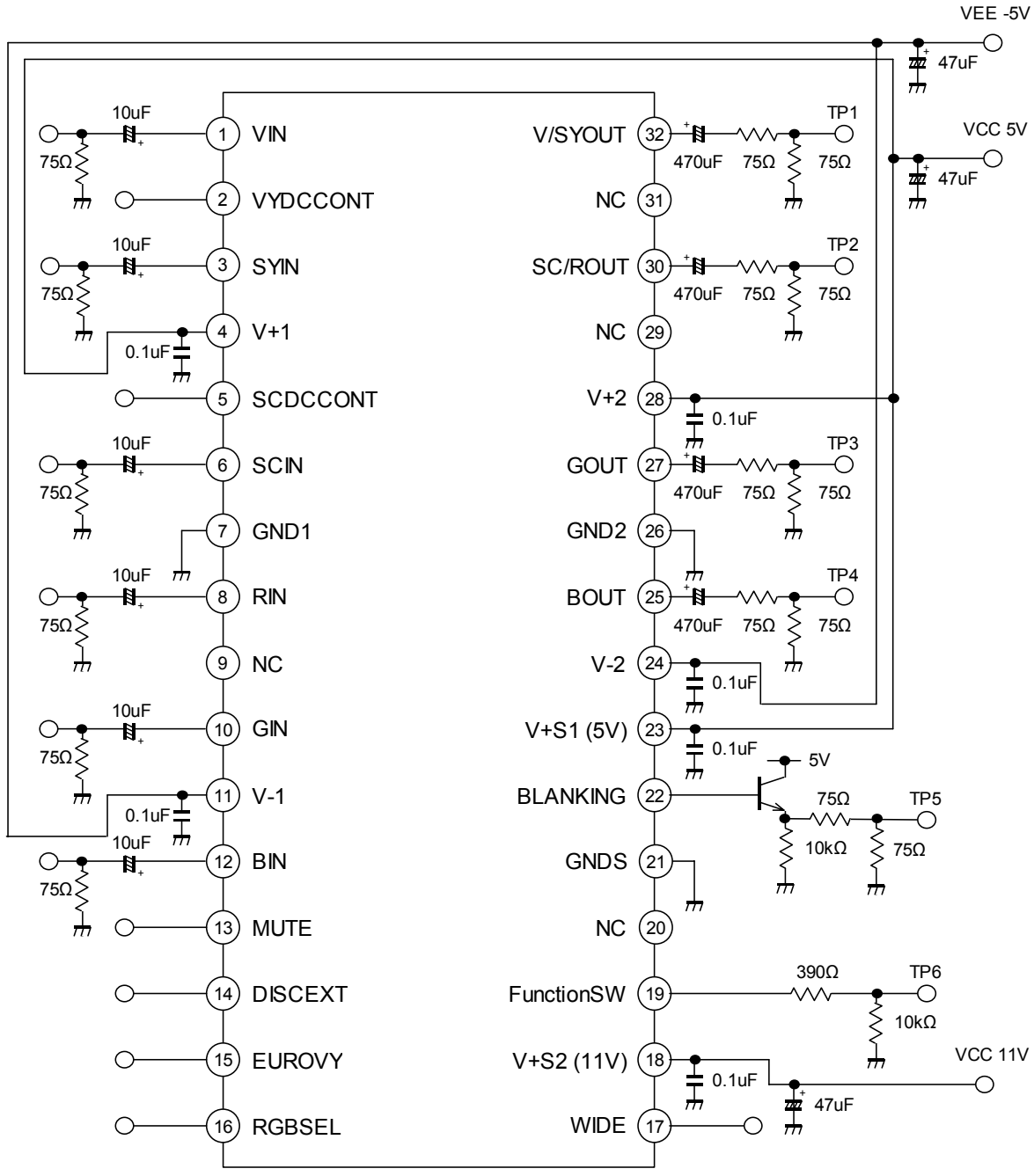
■**TEST CIRCUIT 1**

VYDCCONT, SCDCCONT=H

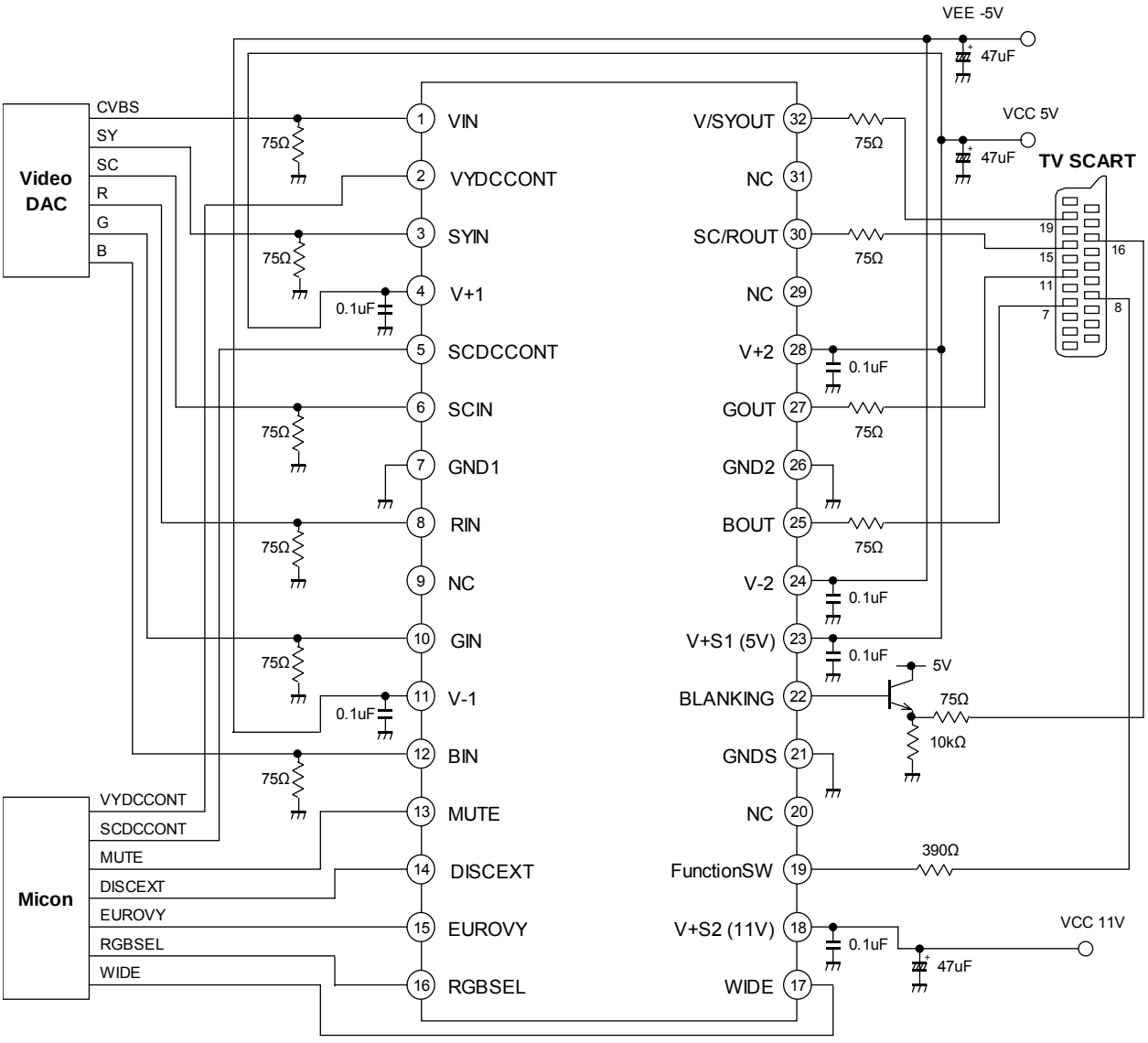


■**TEST CIRCUIT 2**

VYDCCONT, SCDCCONT=L



■APPLICATION CIRCUIT



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