

4CH VIDEO AMPLIFIER FOR SCART

■ GENERAL DESCRIPTION

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

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

■ PACKAGE OUTLINE

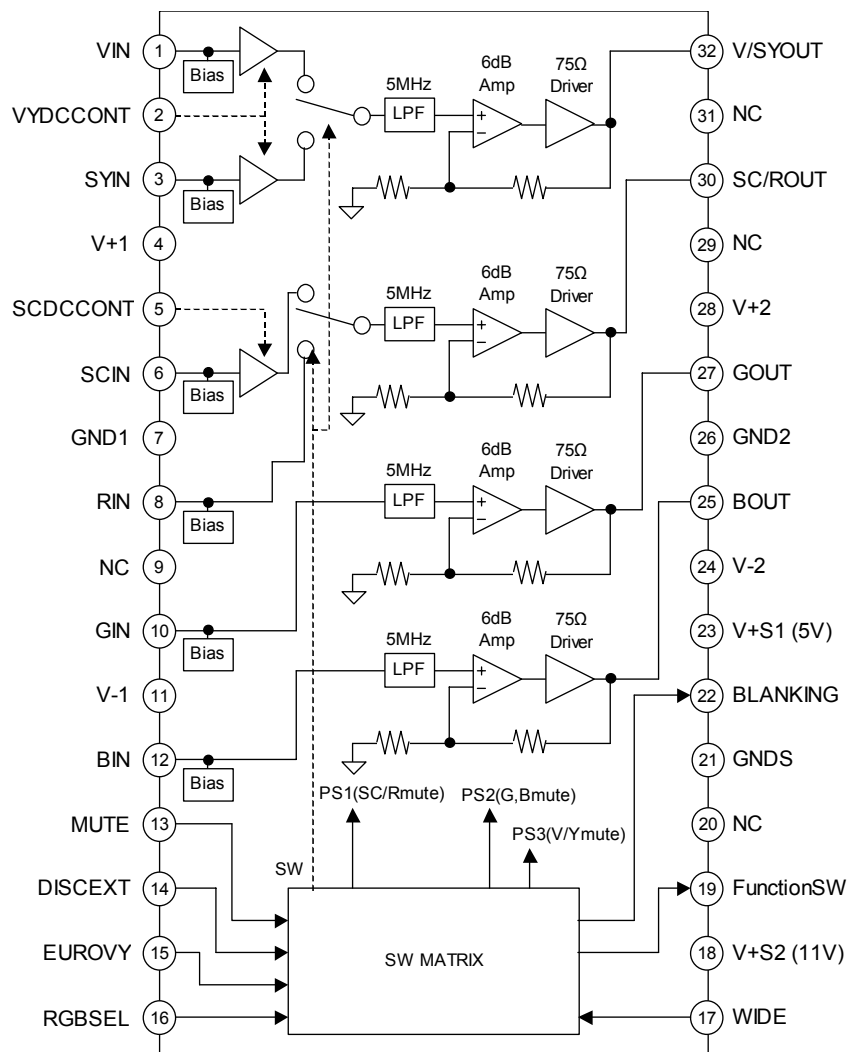


NJM2582V

■ FEATURES

- Operating Voltage $\pm 5V, +5V, +11V$
- 6input 4output
- 2input 1output Video SW
- Internal LPF
- 6dB Amplifier
- Internal 75 Ω 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 OPERATING 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 _{cc1}	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=L	-	45.0	60.0	mA
Operating Current2	I _{ee2}	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=L	-45.0	-35.0	-	mA
Operating Current3	I _{cc3}	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=H	-	45.0	60.0	mA
Operating Current4	I _{ee4}	(Note2) No Signal V+=5V, V-=-5V, VYDCCONT=H	-55.0	-40.0	-	mA
Operating Current at Power Save	I _{save}	(Note3) No Signal V+=5V	-	4.0	5.5	mA
Maximum Output Voltage Swing	V _{om}	(SYIN, VIN, RIN, GIN, BIN) Vin=100kHz, Sine Signal, THD=1%	3.0	4.0	-	Vp-p
Voltage Gain1	G _{v1}	(SYIN, VIN, RIN, GIN, BIN) Vin=1MHz, 1.0Vp-p, Sine Signal	5.6	6.0	6.4	dB
Voltage Gain2	G _{v2}	(SCIN) Vin=4.43MHz, 0.3Vp-p, Sine Signal	5.6	6.0	6.4	dB
Gain Difference Between channel	ΔG _{vl}	(SYIN, VIN, RIN, GIN, BIN) Vin=1MHz, 1.0Vp-p, Sine Signal	-0.2	0	+0.2	dB
Low Pass Filter Characteristic 1	G _{fy5M}	(SYIN, VIN, RIN, GIN, BIN) 5MHz/1MHz, 1.0Vp-p, Sine Signal	-1.0	0	0.5	dB
	G _{fy27M}	(SYIN, VIN, RIN, GIN, BIN) 27MHz/1MHz, 1.0Vp-p, Sine Signal	-	-25.0	-14.0	dB
Low Pass Filter Characteristic 2	G _{fc5M}	(SCIN) 5MHz/4.43MHz, 0.3Vp-p, Sine Signal	-1.0	0	0.5	dB
	G _{fc27M}	(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	V _{thH}	MUTE, DISCEXT, EUROVY, RGBSEL WIDE, VYDCCONT, SCDCCONT	2.5	-	V ⁺	V
Switch Change Voltage Low Level	V _{thL}	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		L		
L	L	H	L		L		
L	L	L	H		L		
L	L	L	L	4ch OFF	TV Mode	L	

* No use

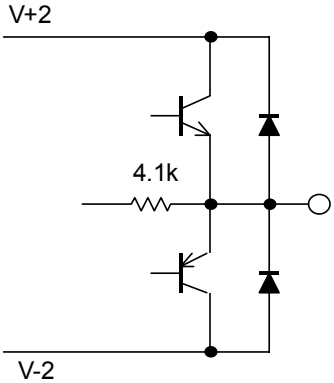
INPUT		OUTPUT	Mode
DISCEXT	WIDE	Function SW	
H	H	M	DVD
H	L	H	
L	H	L	TV
L	L	L	

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

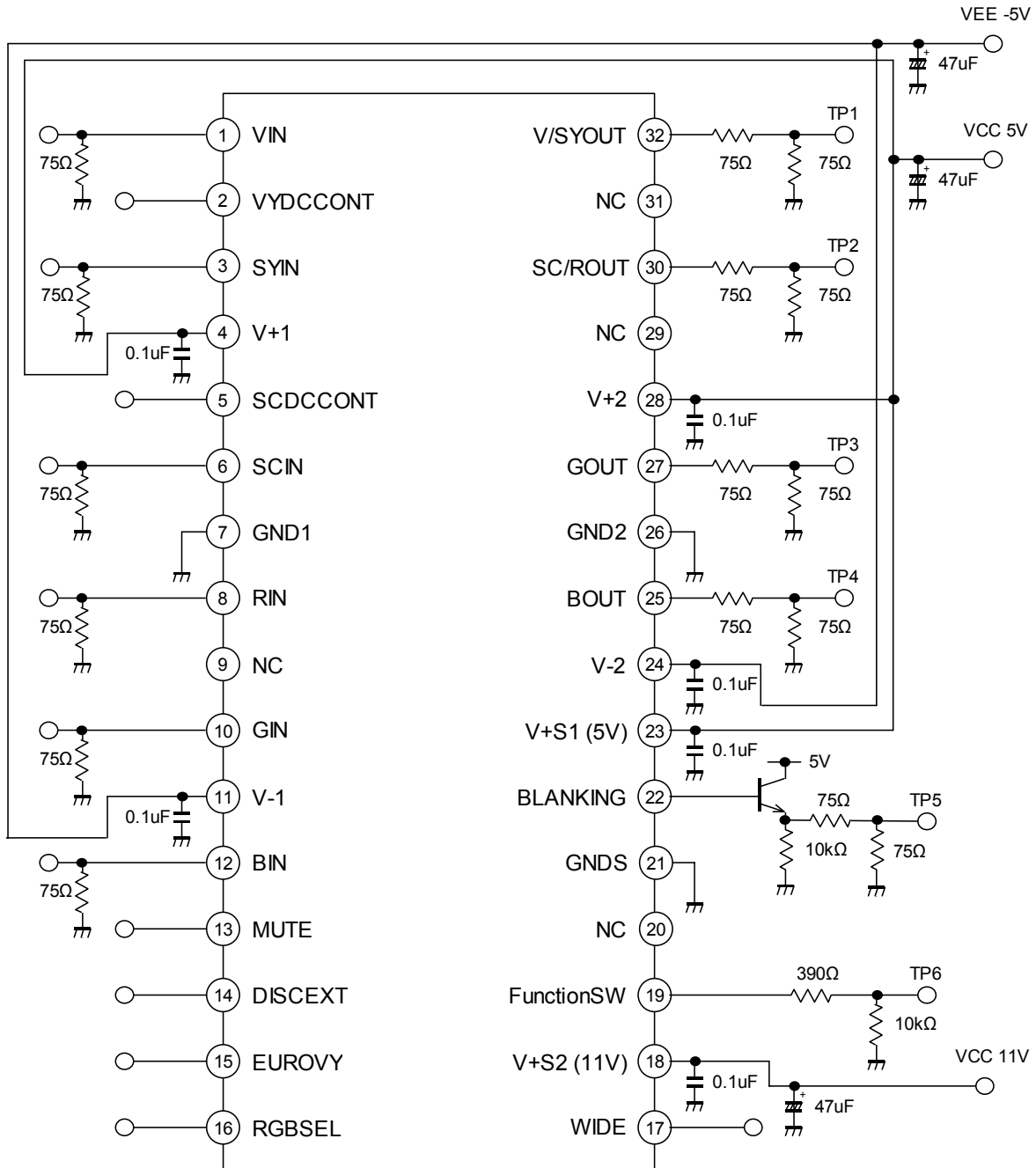
PIN No.	PIN NAME	EQUIVALENT CIRCUIT	DC VOLTAGE	NOTE
1 3 6 8 10 12	VIN SYIN SCIN RIN GIN BIN		0V	
2 5 13 14 15 16 17	VYDCCONT SCDCCONT MUTE DISCEXT EUROVY RGBSEL WIDE		0V	
19	FunctionSW		0V 6V 10.5V	
22	Blanking		0V 2.1V	

■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	

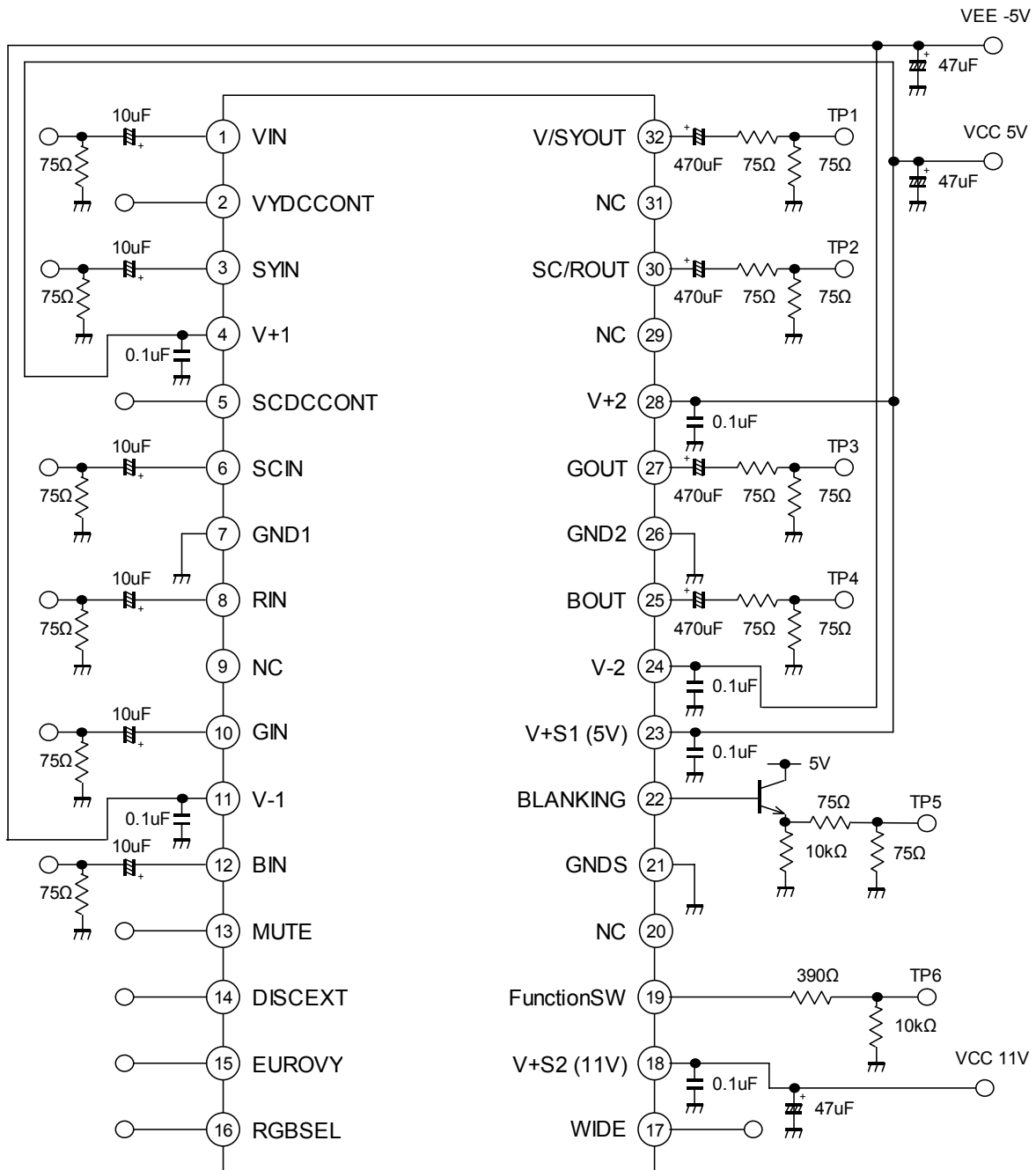
TEST CIRCUIT 1

VYDCCONT, SCDCCONT=H

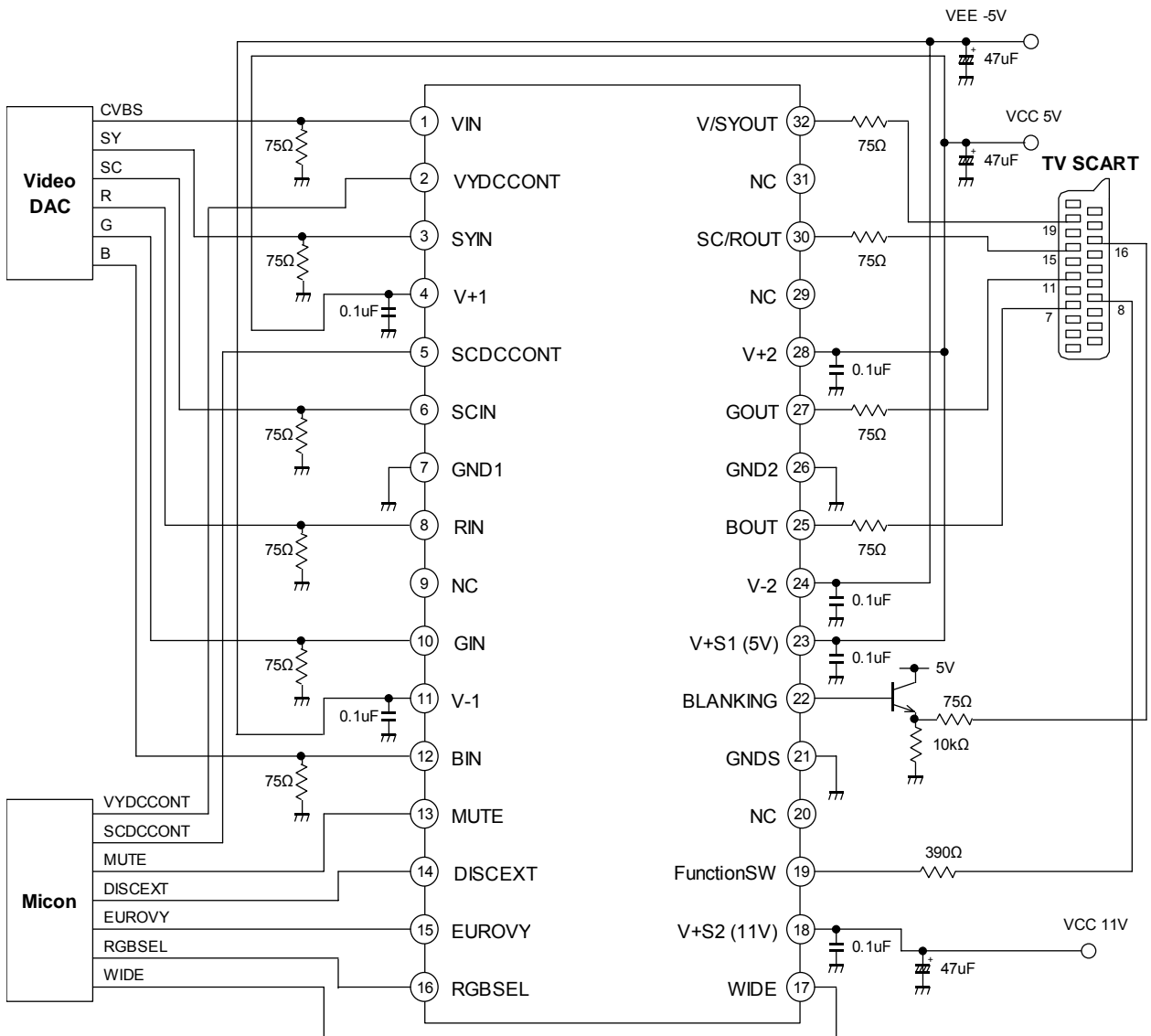


TEST CIRCUIT 2

VYDCCONT, SCDCCONT=L



APPLICATION CIRCUIT



[CAUTION]
 The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.