

AN5635N, AN5635NS

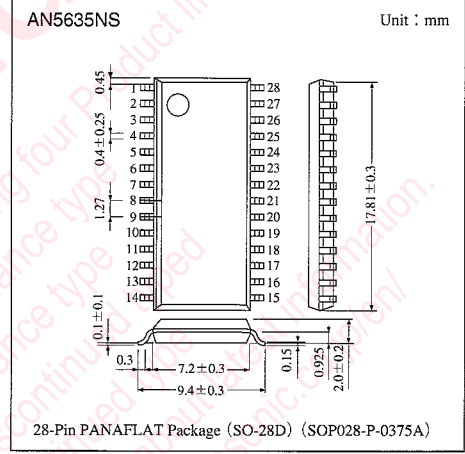
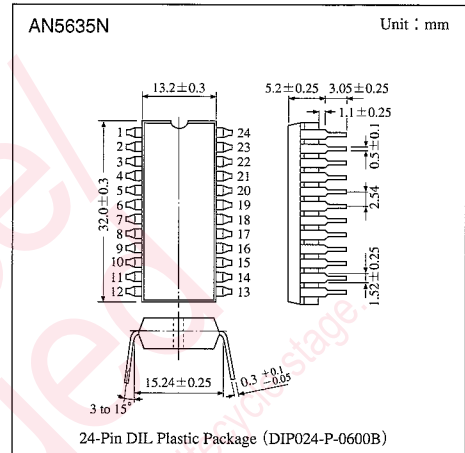
Chrominance Signal Processing ICs for SECAM System Color TV

Overview

The AN5635N and the AN5635NS are integrated circuits designed for SECAM system color TV chrominance signal processing circuit.

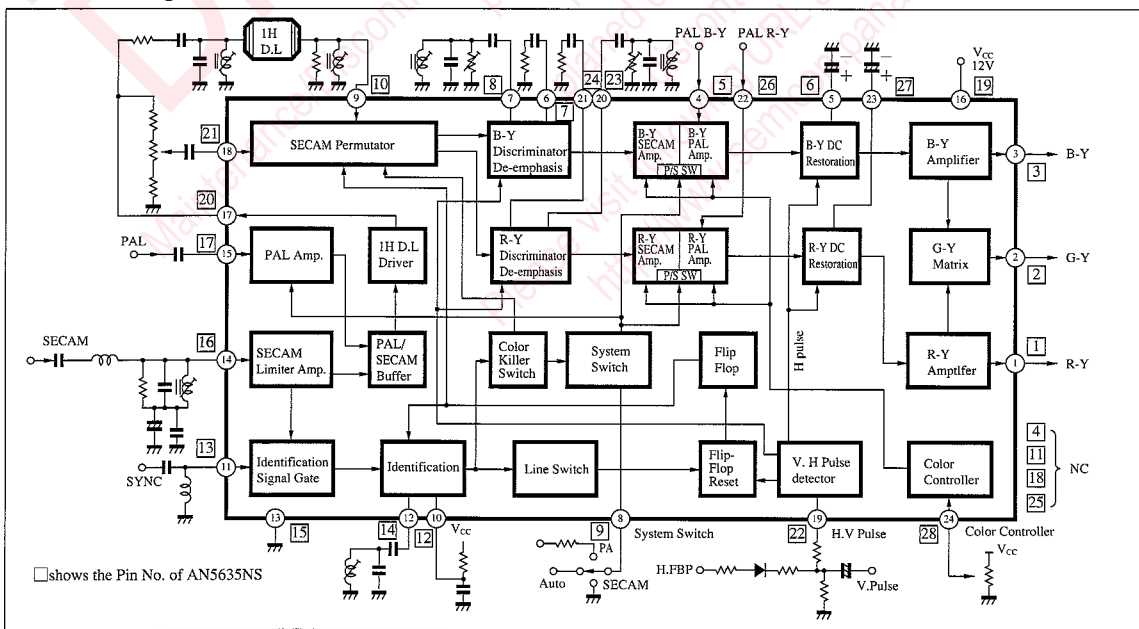
Features

- Incorporates all chrominance signal processing circuits for SECAM system color TV receiver, on a single chip
- By incorporating color matrix circuit, color difference signals are provided
- Built-in color control circuit
- Built-in PAL/SECAM system switch
- Includes color killer function



ICs for TV

Block Diagram



Pin Descriptions () shows the Pin No. of AN5635NS

Pin No.	Pin name	Pin No.	Pin name
1 (1)	R-Y signal output	13(15)	GND
2 (2)	G-Y signal output	14(16)	SECAM signal input
3 (3)	B-Y signal output	15(17)	PAL signal input
4 (5)	PAL B-Y demodulated sig. input	16(19)	V _{CC}
5 (6)	B-Y clamp capacitor	17(20)	Chrominance signal output
6 (7)	B-Y de-emphasis	18(21)	Permutator input (direct)
7 (8)	B-Y discriminator	19(22)	H-V pulse input
8 (9)	System ident. switch	20(23)	R-Y discriminator
9(10)	Permutator input (1H delayed)	21(24)	R-Y de-emphasis
10(12)	System ident. capacitor	22(26)	PAL R-Y demodulated sig. input
11(13)	Gate pulse input	23(27)	R-Y clamp capacitor
12(14)	System ident. discriminator	24(28)	Color control

In case of AN5635NS, No.④, ⑪, ⑱, ⑳, are NC

Absolute Maximum Ratings (T_a = 25°C)

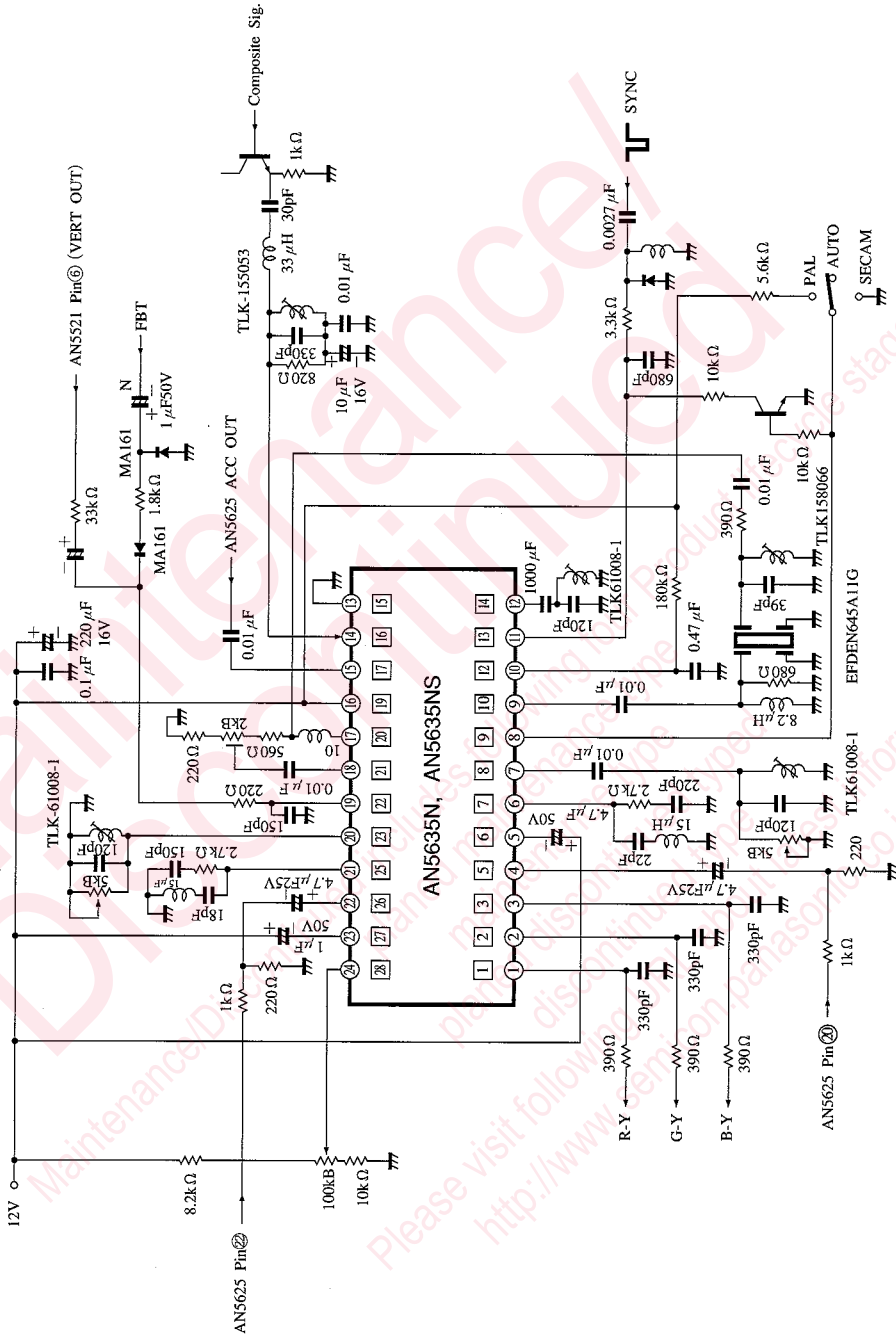
Parameter		Symbol	Rating		Unit
Supply voltage	AN5635N	V _{CC} (V ₁₆₋₁₃)	14.4		V
	AN5635NS	V _{CC} (V ₁₉₋₁₃)	12.0		
Circuit voltage (AN5635N)		V _{8, 11-13}	0	V ₁₆₋₁₃	V
		V _{19, 24-13}	-0.4	V ₁₆₋₁₃	V
		V _{4, 9, 14, 15, 18, 22-13}	0	9	V
Circuit voltage (AN5635NS)		V _{9, 13-15}	0	V ₁₉₋₁₅	V
		V _{22, 28-15}	-0.4	V ₁₉₋₁₅	V
		V _{5, 10, 16, 17, 21, 26-15}	0	9	V
Circuit current		I _{1, 2, 3}	-25	10	mA
Circuit current (AN5635N)		I _{5, 6, 21, 23}	-5	10	mA
		I ₁₀	-10	10	mA
		I ₁₇	-25	0	mA
Circuit current (AN5635NS)		I _{6, 7, 24, 27}	-5	10	mA
		I ₁₂	-10	10	mA
		I ₂₀	-25	0	mA
Power dissipation	AN5635N	P _D	1159		mW
	AN5635NS	P _D	567		
Operating ambient temperature		T _{opr}	-20 to +70		°C
Storage temperature	AN5635N	T _{stg}	-55 to +150		°C
	AN5635NS		-55 to +125		

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	min	typ	max	Unit	
Total circuit current	I_{tot}	$V_{CC}=12.0V$	49	58	67	mA	
Circuit voltage	AN5635N	$V_{9,14,18-13}$	$V_{CC}=12.0V$	1.7	2.4	3.1	V
	AN5635NS	$V_{10,16,21-15}$					
	AN5635N	V_{15-13}	$V_{CC}=12.0V$	2.7	3.4	4.1	V
	AN5635NS	V_{17-15}					
	AN5635N	V_{17-13}					
AN5635NS	V_{20-15}	$V_{CC}=12.0V, Pin⑩ 3k\Omega GND$	6.6	7.3	8.0	V	
Limiter amp. output voltage 1	e_{lim-1}	Sine wave 4.4MHz 100mV _{P-P} (0dB)	2.1	2.6	3.1	V _{P-P}	
Limiter amp. output voltage 2	e_{lim-2}	Sine wave 4.4MHz 5mV _{P-P} (-26dB)	0.55	1.05	1.55	V _{P-P}	
PAL amp. gain	A_{vPAL}	Sine wave 4.4MHz 300mV _{P-P}	0.75	1.0	1.25	—	
SECAM output R-Y	e_{01R-Y}	Color bar input standard 100mV _{P-P}	4.1	5.2	6.2	V _{P-P}	
SECAM output G-Y	e_{01G-Y}		1.7	2.2	2.6	V _{P-P}	
SECAM output B-Y	e_{01B-Y}		3.7	4.6	5.5	V _{P-P}	
Color control TYP	e_{01TYP}	6V radio for eol B-Y Pin⑭ 12V	0.18	0.28	0.38	times	
Color killer level	e_k	Input at killer operating time (100mV _{P-P}=0dB)}	-46	-39	-32	dB	
System discrimination 1	AN5635N	V_{8-13}	Color-bar input -52dB	1.1	1.3	1.5	V
	AN5635NS	V_{9-15}					
System discrimination 2	AN5635N	V_{8-13}	Color-bar input -26dB	0	0.15	0.3	V
	AN5635NS	V_{9-15}					
System discrimination 3	AN5635N	V_{8-13}	PAL input-burst 100mV _{P-P}	1.1	1.3	1.5	V
	AN5635NS	V_{9-15}					
PAL R-Y/B-Y amp. gain	$A_{vR-Y, B-Y}$	Sine wave 10kHz 500mV _{P-P}	7.2	9.0	10.8	times	
Residual color difference output	e_{04}	Color-bar input standard Pin⑭=1.5V	—	—	60	mV _{P-P}	
Demodulation DC output voltage	$E_{O(DC)}$	Non-input signal	6.7	7.1	7.6	V	
E_O (DC) supply voltage dependency	$\Delta E_{O(DC)}/V_{CC}$	$V_{CC}=12V\pm 20\%$	0.4	0.55	0.7	V/V	
ΔE_{x-y} supply voltage dependency	ΔE_{x-y}	Non-input signal	—	—	± 300	mV	
Output DC differential voltage ΔE_{x-y}	$\Delta E_{x-y}(V_{CC})$	$V_{CC}=12V\pm 20\%$	—	—	± 100	mV	
ΔE_{x-y} color change	$\Delta E_{x-y}(C)$	Color min. to max.	—	—	± 70	mV	
E_{x-y} system SW change	$\Delta E_{x-y}(SW)$	System SW change from PAL to SECAM	—	—	± 50	mV	
System discrimination sampling pulse voltage range	V_{SIG}	Sampling pulse voltage for system discrimination operation	1.5	—	2.4	V	
F. F. gate voltage range	V_{FF}	F. F. reverse pulse voltage	5.5	—	10	V	
Blanking voltage range	V_{BLK}	Blanking operating pulse voltage	1.5	—	4.5	V	

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■ Application Circuit



□ shows the Pin No. of AN5635NS (Pin No. 4, 11, 19, 25 are NC)

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