

AN5635N, AN5635NS

Chrominance Signal Processing ICs for SECAM System Color TV

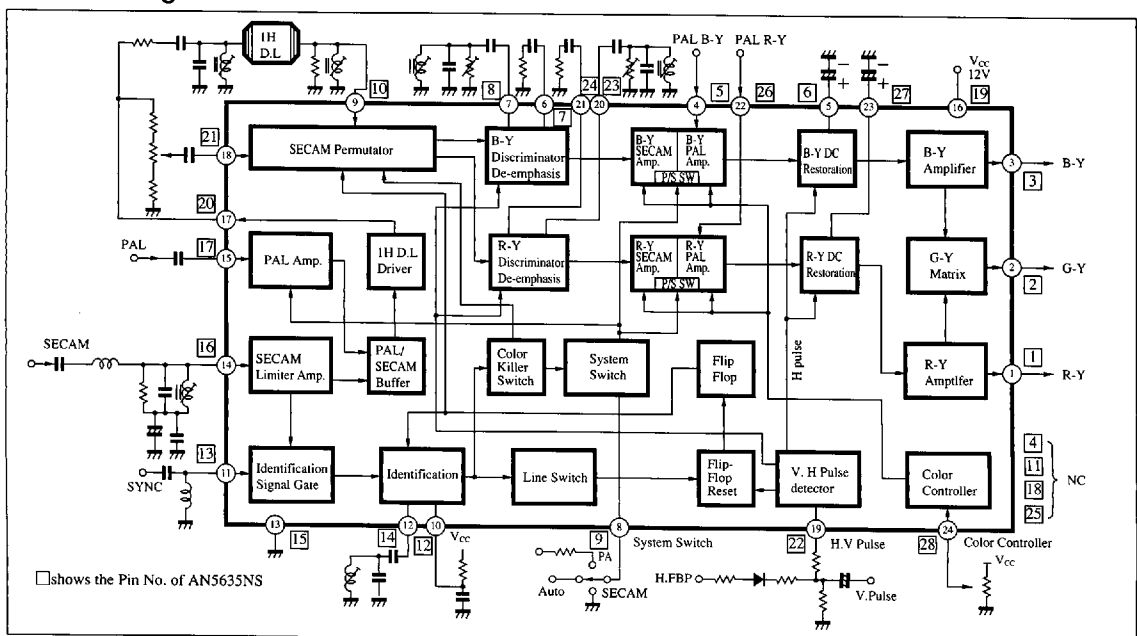
Overview

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

Features

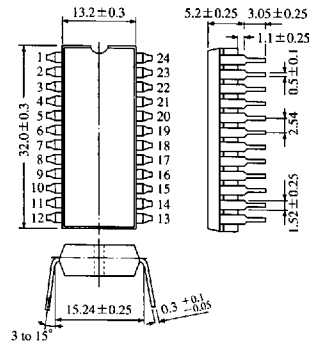
- Incorporates all chrominance signal processing circuits for SECAM system color TV receiver, on a single chip
- By incorporating color matrix circuit, color difference signals are provided
- Built-in color control circuit
- Built-in PAL/SECAM system switch
- Includes color killer function

Block Diagram



AN5635N

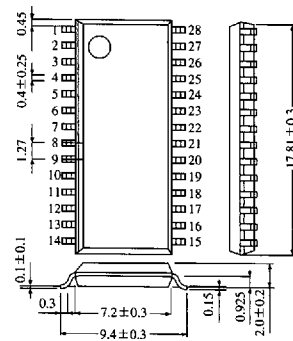
Unit : mm



24-Pin DIL Plastic Package (DIP024-P-0600B)

AN5635NS

Unit : mm



28-Pin PANAFLAT Package (SO-28D) (SOP028-P-0375A)

ICs for TV

6932852 0014388 79T

Panasonic

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 (Ta=25℃)

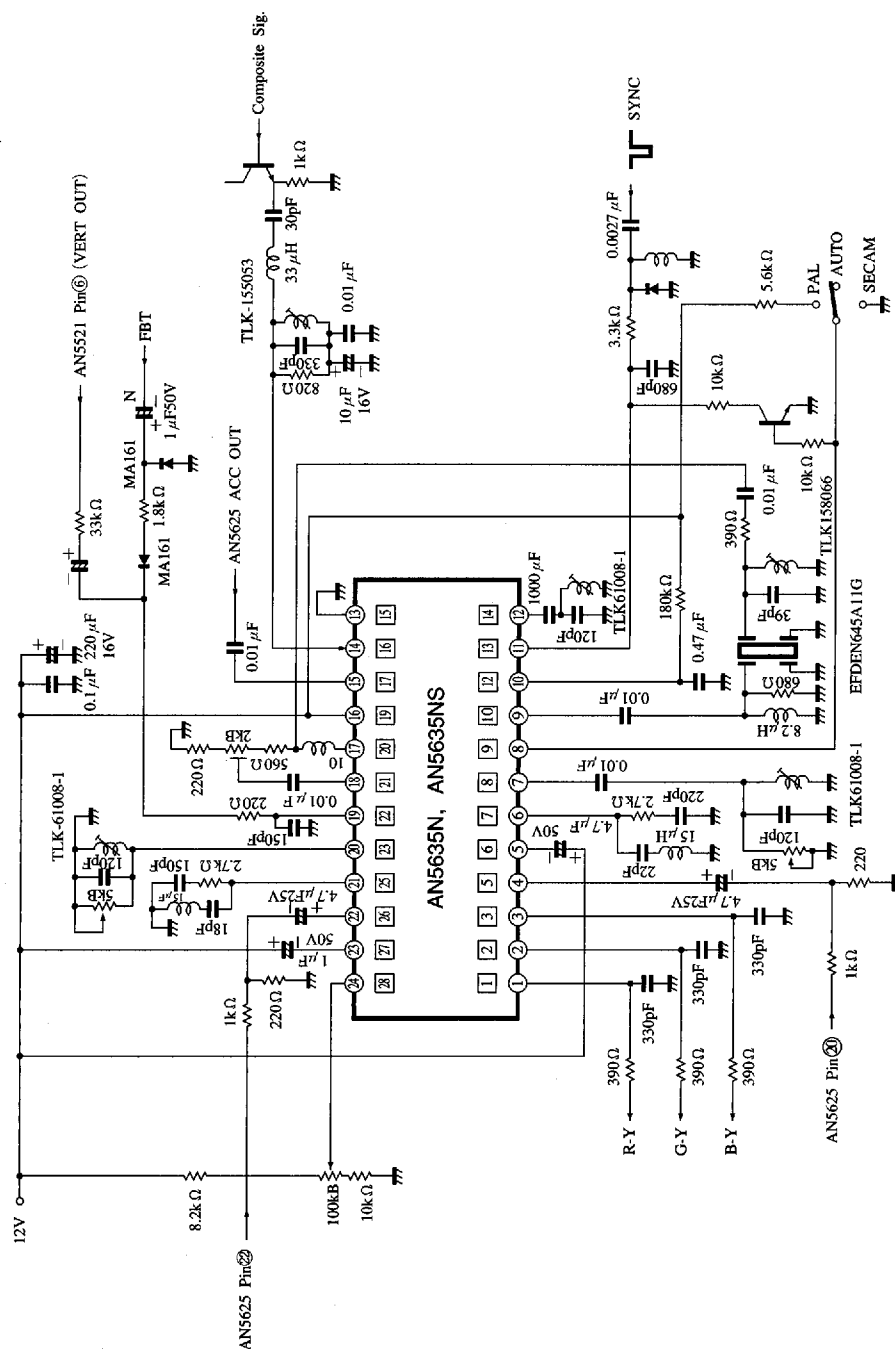
Parameter		Symbol	Rating		Unit
Supply voltage	AN5635N	V _{CC} (V ₁₆₋₁₃)	14.4		V
	AN5635NS	V _{CC} (V ₁₉₋₁₃)	12.0		
Circuit voltage (AN5635N)		V _{8, 11-13}	0	V ₁₆₋₁₃	V
		V _{19, 24-13}	-0.4	V ₁₆₋₁₃	V
		V _{4, 9, 14, 15, 18, 22-13}	0	9	V
Circuit voltage (AN5635NS)		V _{9, 13-15}	0	V ₁₉₋₁₅	V
		V _{22, 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		℃
Storage temperature	AN5635N	T _{stg}	-55 to +150		℃
	AN5635NS		-55 to +125		

■ Electrical Characteristics (Ta=25°C)

Parameter		Symbol	Condition	min	typ	max	Unit
Total circuit current		I_{tot}	$V_{\text{CC}}=12.0\text{V}$	49	58	67	mA
Circuit voltage	AN5635N	$V_{9,14,18-13}$	$V_{\text{CC}}=12.0\text{V}$	1.7	2.4	3.1	V
	AN5635NS	$V_{10,16,21-15}$					
	AN5635N	V_{15-13}	$V_{\text{CC}}=12.0\text{V}$	2.7	3.4	4.1	V
	AN5635NS	V_{17-15}					
	AN5635N	V_{17-13}	$V_{\text{CC}}=12.0\text{V}$, Pin⑰ 3k Ω GND	6.6	7.3	8.0	V
	AN5635NS	V_{20-15}					
Limiter amp. output voltage 1		$e_{\text{lim-1}}$	Sine wave 4.4MHz 100mV _{P-P} (0dB)	2.1	2.6	3.1	V _{P-P}
Limiter amp. output voltage 2		$e_{\text{lim-2}}$	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		$e_{\text{01R-Y}}$	Color bar input standard 100mV _{P-P}	4.1	5.2	6.2	V _{P-P}
SECAM output G-Y		$e_{\text{01G-Y}}$		1.7	2.2	2.6	V _{P-P}
SECAM output B-Y		$e_{\text{01B-Y}}$		3.7	4.6	5.5	V _{P-P}
Color control TYP		e_{0typ}	6V radio for eol B-Y Pin⑳ 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		$A_{\text{vR-Y,B-Y}}$	Sine wave 10kHz 500mV _{P-P}	7.2	9.0	10.8	times
Residual color difference output		e_{04}	Color-bar input standard Pin㉑=1.5V	—	—	60	mV _{P-P}
Demodulation DC output voltage		$E_{\text{O(DC)}}$	Non-input signal	6.7	7.1	7.6	V
E_{O} (DC) supply voltage dependency		$\Delta E_{\text{O(DC)}/V_{\text{CC}}}$	$V_{\text{CC}}=12\text{V} \pm 20\%$	0.4	0.55	0.7	V/V
$\Delta E_{\text{x-y}}$ supply voltage dependency		$\Delta E_{\text{x-y}}$	Non-input signal	—	—	± 300	mV
Output DC differential voltage $\Delta E_{\text{x-y}}$		$\Delta E_{\text{x-y}(V_{\text{CC}})}$	$V_{\text{CC}}=12\text{V} \pm 20\%$	—	—	± 100	mV
$\Delta E_{\text{x-y}}$ color change		$\Delta E_{\text{x-y}(C)}$	Color min. to max.	—	—	± 70	mV
$E_{\text{x-y}}$ system SW change		$\Delta E_{\text{x-y}(SW)}$	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		$V_{\text{F.F}}$	F. F. reverse pulse voltage	5.5	—	10	V
Blanking voltage range		V_{BLK}	Blanking operating pulse voltage	1.5	—	4.5	V

 ICs for
TV

■ Application Circuit



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