

# AN5635N, AN5635NS

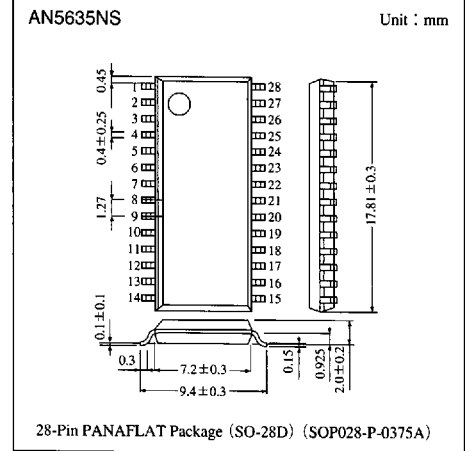
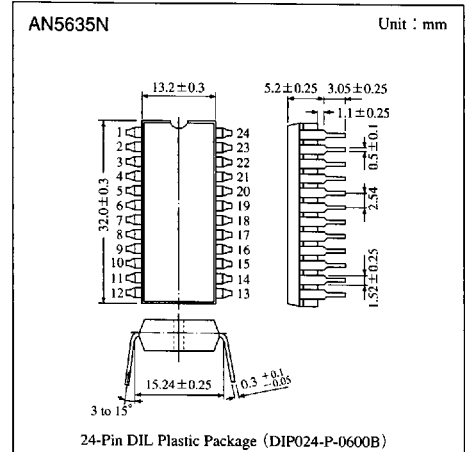
## Chrominance Signal Processing ICs for SECAM System Color TV

### Overview

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

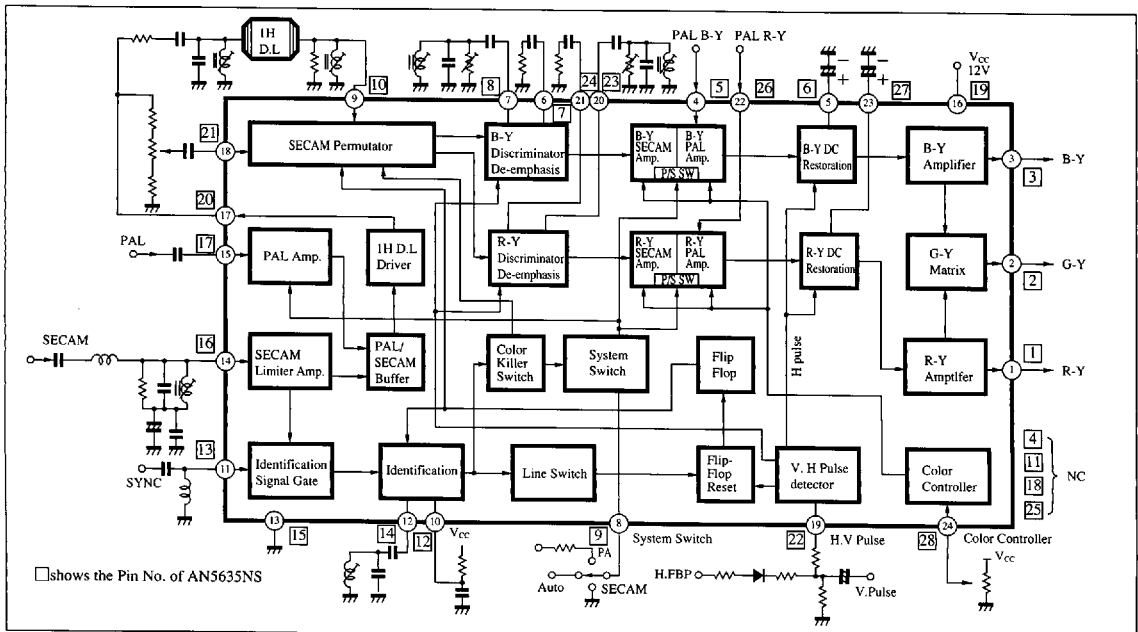
### Features

- 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



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 <sub>CC</sub>
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<sub>a</sub> = 25°C)

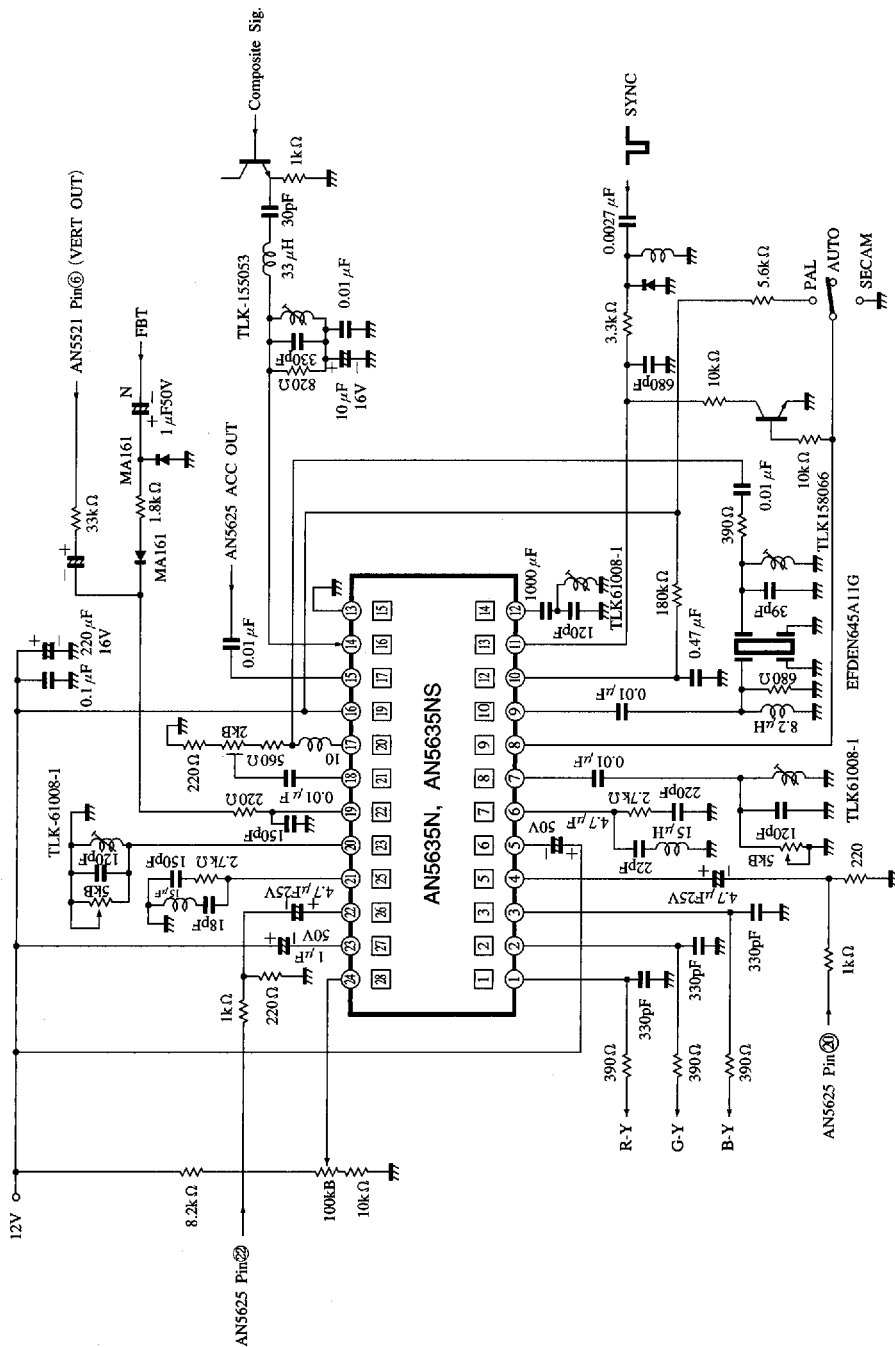
Parameter		Symbol	Rating		Unit
Supply voltage	AN5635N	V <sub>CC</sub> (V <sub>16-13</sub> )	14.4		V
	AN5635NS	V <sub>CC</sub> (V <sub>19-13</sub> )	12.0		
Circuit voltage (AN5635N)		V <sub>8, 11-13</sub>	0	V <sub>16-13</sub>	V
		V <sub>19, 24-13</sub>	-0.4	V <sub>16-13</sub>	V
		V <sub>4, 9, 14, 15, 18, 22-13</sub>	0	9	V
Circuit voltage (AN5635NS)		V <sub>9, 13-15</sub>	0	V <sub>19-15</sub>	V
		V <sub>22, 28-15</sub>	-0.4	V <sub>19-15</sub>	V
		V <sub>5, 10, 16, 17, 21, 26-15</sub>	0	9	V
Circuit current		I <sub>1, 2, 3</sub>	-25	10	mA
Circuit current (AN5635N)		I <sub>5, 6, 21, 23</sub>	-5	10	mA
		I <sub>10</sub>	-10	10	mA
		I <sub>17</sub>	-25	0	mA
Circuit current (AN5635NS)		I <sub>6, 7, 24, 27</sub>	-5	10	mA
		I <sub>12</sub>	-10	10	mA
		I <sub>20</sub>	-25	0	mA
Power dissipation	AN5635N	P <sub>D</sub>	1159		mW
	AN5635NS	P <sub>D</sub>	567		
Operating ambient temperature		T <sub>opr</sub>	-20 to +70		°C
Storage temperature	AN5635N	T <sub>stg</sub>	-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	$V_{9,14,18-13}$	1.7	2.4	3.1	V
	AN5635NS	$V_{10,16,21-15}$				
	AN5635N	$V_{15-13}$	2.7	3.4	4.1	V
	AN5635NS	$V_{17-15}$				
	AN5635N	$V_{17-13}$	6.6	7.3	8.0	V
	AN5635NS	$V_{20-15}$				
Condition		$V_{CC}=12.0V$				
Condition		$V_{CC}=12.0V$				
Condition		$V_{CC}=12.0V$				
Condition		$V_{CC}=12.0V, Pin\textcircled{17} 3k\Omega GND$				
Limiter amp. output voltage 1	$e_{lim-1}$	Sine wave 4.4MHz 100mV <sub>P-P</sub> (0dB)	2.1	2.6	3.1	V <sub>P-P</sub>
Limiter amp. output voltage 2	$e_{lim-2}$	Sine wave 4.4MHz 5mV <sub>P-P</sub> (-26dB)	0.55	1.05	1.55	V <sub>P-P</sub>
PAL amp. gain	$A_{vPAL}$	Sine wave 4.4MHz 300mV <sub>P-P</sub>	0.75	1.0	1.25	—
SECAM output R-Y	$e_{01R-Y}$	Color bar input standard 100mV <sub>P-P</sub>	4.1	5.2	6.2	V <sub>P-P</sub>
SECAM output G-Y	$e_{01G-Y}$		1.7	2.2	2.6	V <sub>P-P</sub>
SECAM output B-Y	$e_{01B-Y}$		3.7	4.6	5.5	V <sub>P-P</sub>
Color control TYP	$e_{01typ}$	6V radio for eol B-Y Pin $\textcircled{24}$ 12V	0.18	0.28	0.38	times
Color killer level	$e_k$	Input at killer operating time (100mV <sub>P-P</sub> =0dB)	-46	-39	-32	dB
System discrimination 1	AN5635N	$V_{8-13}$	1.1	1.3	1.5	V
	AN5635NS	$V_{9-15}$				
System discrimination 2	AN5635N	$V_{8-13}$	0	0.15	0.3	V
	AN5635NS	$V_{9-15}$				
System discrimination 3	AN5635N	$V_{8-13}$	1.1	1.3	1.5	V
	AN5635NS	$V_{9-15}$				
Condition		Color-bar input -52dB				
Condition		Color-bar input -26dB				
Condition		PAL input-burst 100mV <sub>P-P</sub>				
PAL R-Y/B-Y amp. gain	$A_{vR-Y,B-Y}$	Sine wave 10kHz 500mV <sub>P-P</sub>	7.2	9.0	10.8	times
Residual color difference output	$e_{04}$	Color-bar input standard Pin $\textcircled{24}$ =1.5V	—	—	60	mV <sub>P-P</sub>
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
$\Delta E_{x-y}$ supply voltage dependency	$\Delta E_{x-y}$	Non-input signal	—	—	$\pm 300$	mV
Output DC differential voltage $\Delta E_{x-y}$	$\Delta E_{x-y(VCC)}$	$V_{CC}=12V \pm 20\%$	—	—	$\pm 100$	mV
$\Delta E_{x-y}$ color change	$\Delta E_{x-y(C)}$	Color min. to max.	—	—	$\pm 70$	mV
$E_{x-y}$ system SW change	$\Delta E_{x-y(SW)}$	System SW change from PAL to SECAM	—	—	$\pm 50$	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	$V_{F.F}$	F. F. reverse pulse voltage	5.5	—	10	V
Blanking voltage range	$V_{BLK}$	Blanking operating pulse voltage	1.5	—	4.5	V

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Application Circuit



□ shows the Pin No. of AN5635NS (Pin No. 4, 11, 19, 23 are NC)

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