

AN5635N, AN5635NS

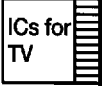
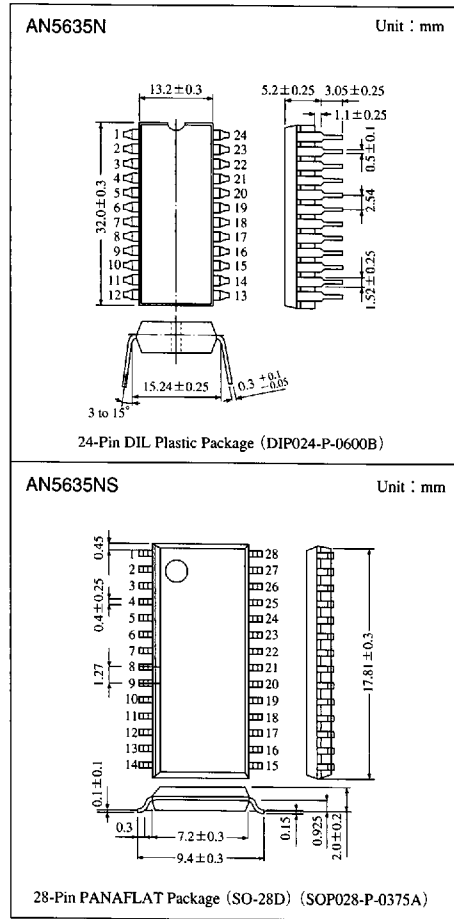
Chrominance Signal Processing ICs for SECAM System Color TV

Overview

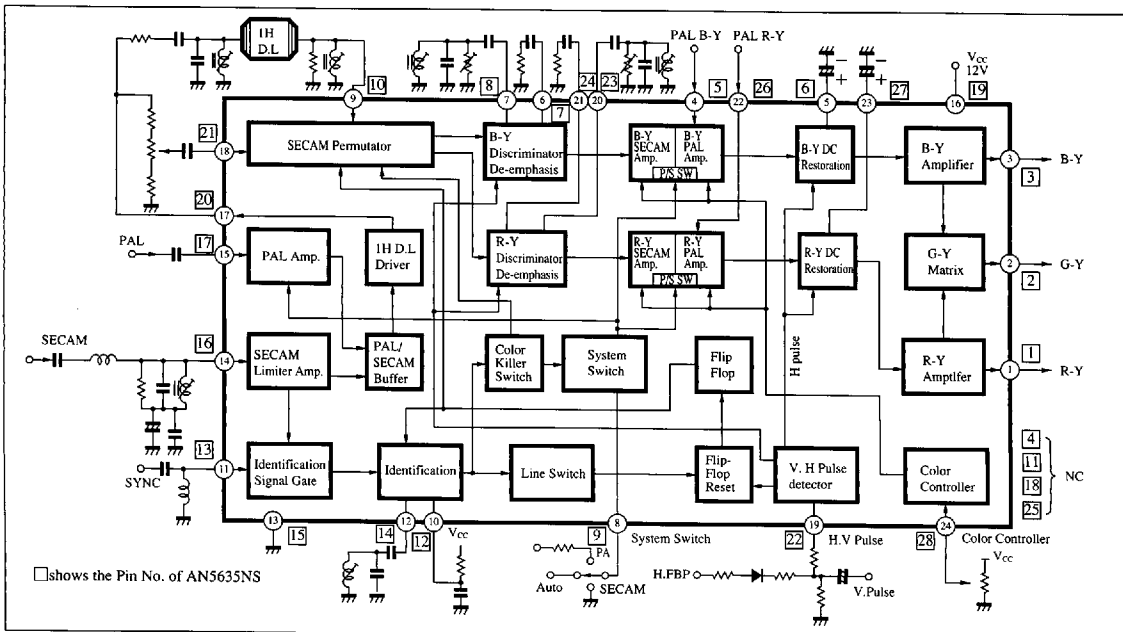
The AN5635N and the AN5635NS are integrated circuits designed for SECAM system color TV chrominance signal processing circuit.

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



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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 |
| | | I _{5, 6, 21, 23} | -5 | 10 | mA |
| Circuit current (AN5635N) | | I ₁₀ | -10 | 10 | mA |
| | | I ₁₇ | -25 | 0 | mA |
| | | I _{6, 7, 24, 27} | -5 | 10 | mA |
| Circuit current (AN5635NS) | | 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 | | |

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Electrical Characteristics (Ta=25°C)

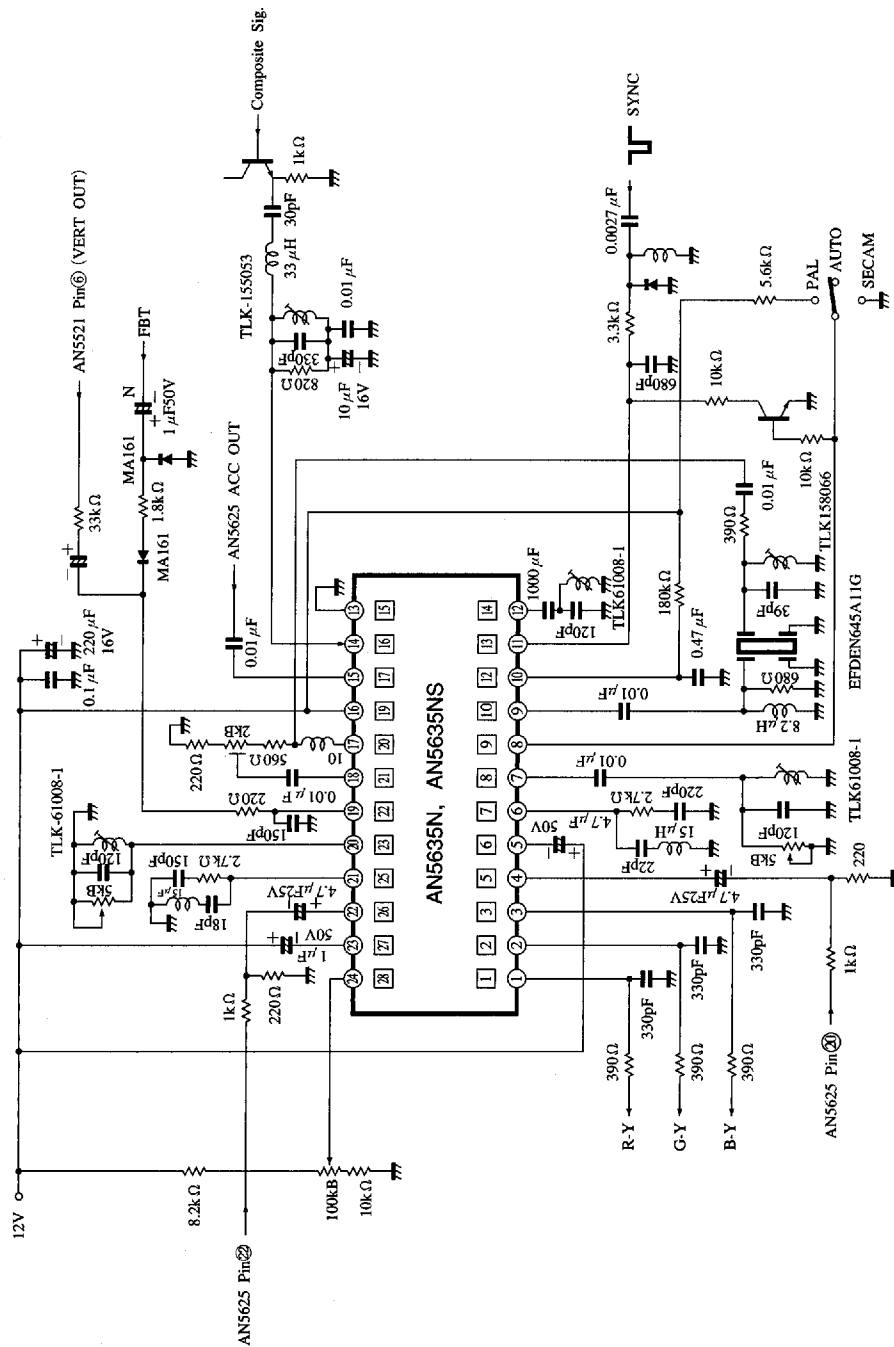
| Parameter | Symbol | Condition | min | typ | max | Unit |
|--|---------------------------|--|-----|------|-----------|-------------------|
| Total circuit current | I_{tot} | $V_{CC}=12.0V$ | 49 | 58 | 67 | mA |
| Circuit voltage | AN5635N | $V_{9, 14, 18-13}$ | 1.7 | 2.4 | 3.1 | V |
| | AN5635NS | $V_{10, 16, 21-15}$ | | | | |
| | 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} | | | | |
| 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} | 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} | | | | |
| PAL R-Y/B-Y amp. gain | $A_{R-Y, B-Y}$ | Sine wave 10kHz 500mV _{P,P} | 7.2 | 9.0 | 10.8 | times |
| Residual color difference output | e_{04} | Color-bar input standard Pin②=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_{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

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■ Application Circuit



□ shows the Pin No. of AN5635NS (Pin No. 4, 11, 12, 25 are NC)

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