

M51386L

COMB FILTER SIGNAL PROCESSOR

DESCRIPTION

The M51386L is a semiconductor integrated circuit designed to serve as a comb filter signal processing unit, using a glass delay line. The circuit consists of buffer circuit, adding circuit and subtracting circuit.

The circuits are housed in a 8-pin plastic SIL package.

FEATURES

- Buffer circuit
- Low power consumption(140mW typ)
- Wide buffer input dynamic range
- Attenuation amplifier with glass delay line(20dB typ)

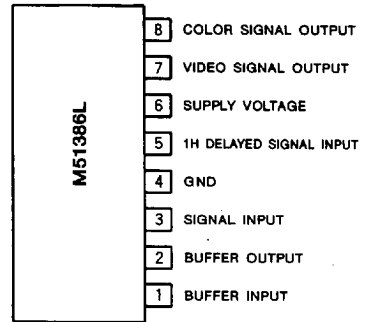
APPLICATION

Color TV receiver

RECOMMENDED OPERATING CONDITION

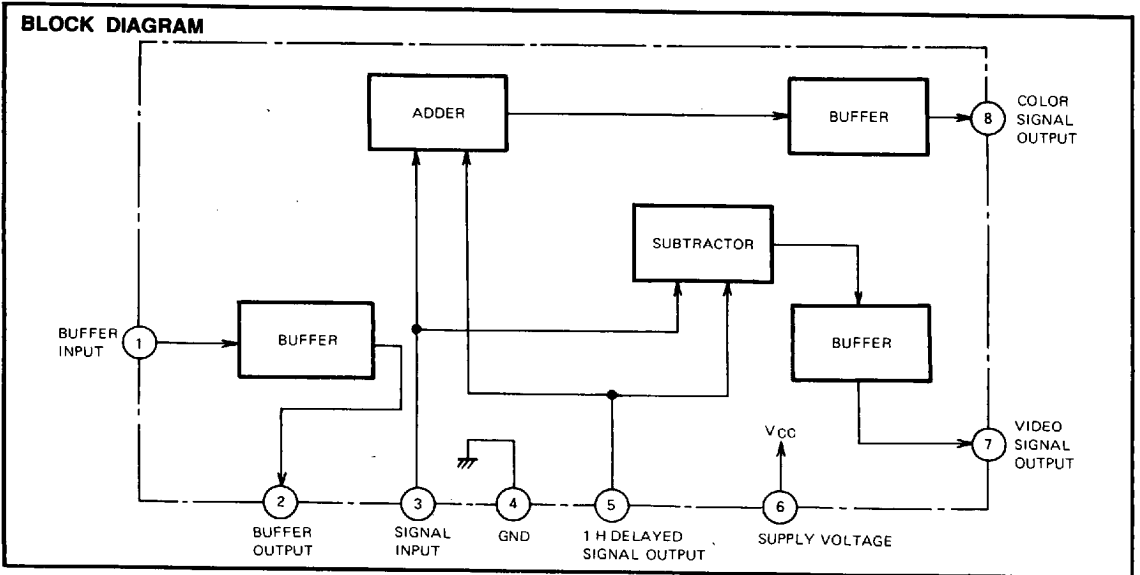
Supply voltage range.....11 - 13V
 Rated supply voltage.....12V

PIN CONFIGURATION (TOP VIEW)



Outline 8P5

BLOCK DIAGRAM



■ 6249826 0021070 83T ■



COMB FILTER SIGNAL PROCESSOR

ABSOLUTE MAXIMUM RATINGS

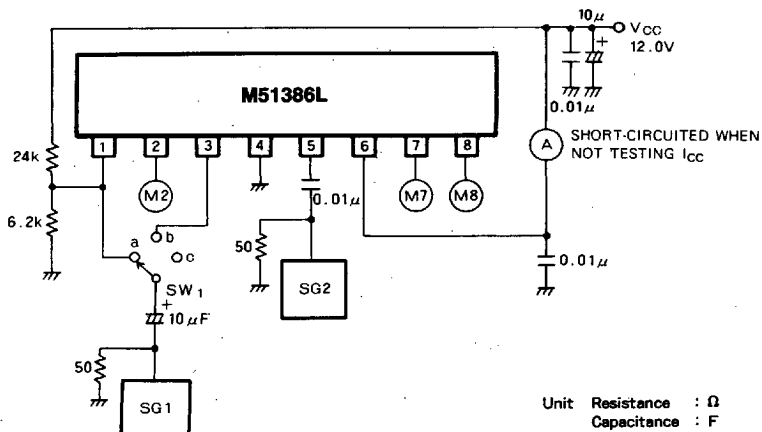
| Symbol | Parameter | Rated | Unit |
|------------------|-----------------------|---------|------|
| V _{cc} | Supply voltage | 14 | V |
| P _d | Power dissipation | 0.69 | W |
| T _{opr} | Operating temperature | -20~75 | °C |
| T _{stg} | Storage temperature | -40~125 | °C |

ELECTRICAL CHARACTERISTICS (T_a=25°C, unless otherwise noted)

| Symbol | Parameter | Test point | Test conditions | Limits | | | Unit | |
|------------------------|----------------------------------|-------------------------------|--|--|------|------|------------------|---|
| | | | | Min. | Typ. | Max. | | |
| I _{cc} | Circuit current | A | SW ₁ =c | 7.5 | 11 | 16 | mA | |
| V _o (B) I | Buffer output voltage | M2 | SW ₁ =a SG1=200kHz Sine wave 1.5V _{p-p} | 1.3 | 1.5 | 1.7 | V _{p-p} | |
| V _o (B) | Buffer frequency characteristics | M2 | SW ₁ =a SG1=200kHz Sine wave 1.0V _{p-p} | 0.9 | 1.0 | 1.1 | V _{p-p} | |
| ΔG _v (B) I | | | SW ₁ =a SG1=2MHz Sine wave 1.0V _{p-p} | -2 | 0 | +2 | *dB | |
| ΔG _v (B) II | | | SW ₁ =a SG1=4MHz Sine wave 1.0V _{p-p} | -2 | 0 | +2 | *dB | |
| V _o (Y) I | Adder/subtractor output voltage | M7 | SW ₁ =b SG1=200kHz Sine wave 1.5V _{p-p} | 1.2 | 1.5 | 1.8 | V _{p-p} | |
| V _o (Y) I | | M8 | SG1=200kHz Sine wave 1.0V _{p-p} | 0.8 | 1.0 | 1.2 | V _{p-p} | |
| V _o (Y) | Adder/subtractor frequency | M7 | SW ₁ =b SG1=200kHz Sine wave 1.0V _{p-p} | -2 | 0 | +2 | *dB | |
| ΔG _v (Y) I | | | SW ₁ =b SG1=2MHz Sine wave 1.0V _{p-p} | | | | | |
| ΔG _v (Y) I | | M8 | SW ₁ =b SG1=200kHz Sine wave 1.0V _{p-p} | -2 | 0 | +2 | *dB | |
| ΔG _v (Y) II | | | SW ₁ =b SG1=4MHz Sine wave 1.0V _{p-p} | | | | | |
| V _o (C) I | | Color signal output voltage 1 | M7 | SW ₁ =c | 1.05 | 1.5 | 2.1 | V _{p-p} |
| V _o (C) I | | | M8 | SG2=3.58MHz Sine wave 0.15V _{p-p} | | | | |
| V _o (C) | Color signal output voltage 1 | M7 | SW ₁ =c | 0.7 | 1.0 | 1.4 | V _{p-p} | |
| V _o (C) | | | M8 | | | | | SG2=3.58MHz Sine wave 0.1V _{p-p} |
| THD(B) | Distortion factor I | M2 | SW ₁ =a SG1=200kHz Sine wave 1.0V _{p-p} | - | - | 3 | % | |
| THD(Y) | Distortion factor II 1 | M7 | SW ₁ =b SG1=200kHz Sine wave 1.0V _{p-p} | - | - | 3 | % | |
| THD(C) | Distortion factor III 1 | M8 | SW ₁ =b SG1=200kHz Sine wave 1.0V _{p-p} | - | - | 3 | % | |

*dB is indicated as amount of change from 200kHz.

TEST CIRCUIT



Unit Resistance : Ω
Capacitance : F

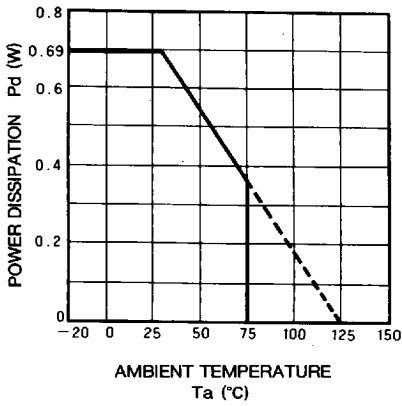
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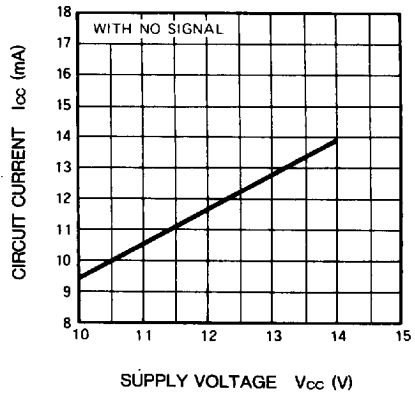
COMB FILTER SIGNAL PROCESSOR

TYPICAL CHARACTERISTICS

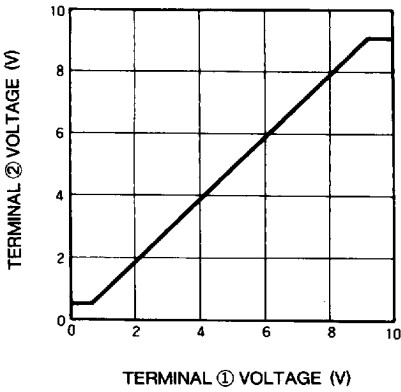
THERMAL DERATING (MAXIMUM RATING)



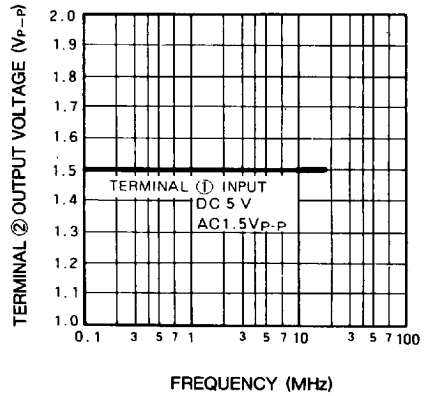
CIRCUIT CURRENT/SUPPLY VOLTAGE CHARACTERISTICS



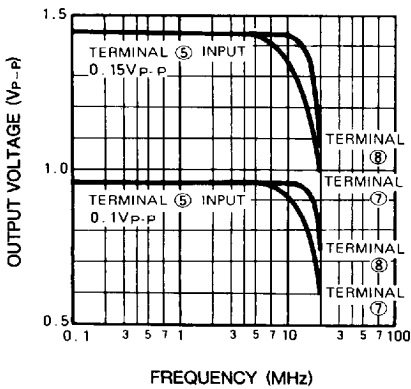
BUFFER INPUT/OUTPUT CHARACTERISTICS



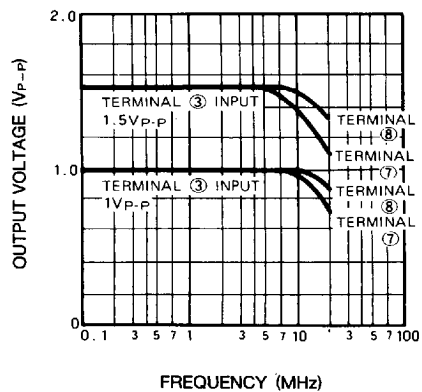
BUFFER FREQUENCY CHARACTERISTICS



FREQUENCY CHARACTERISTICS II



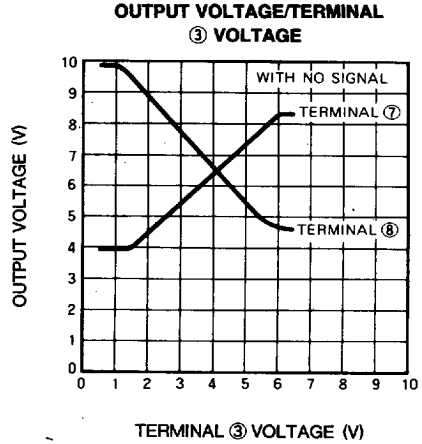
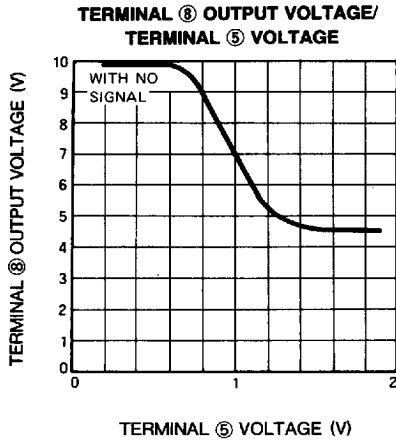
FREQUENCY CHARACTERISTICS I



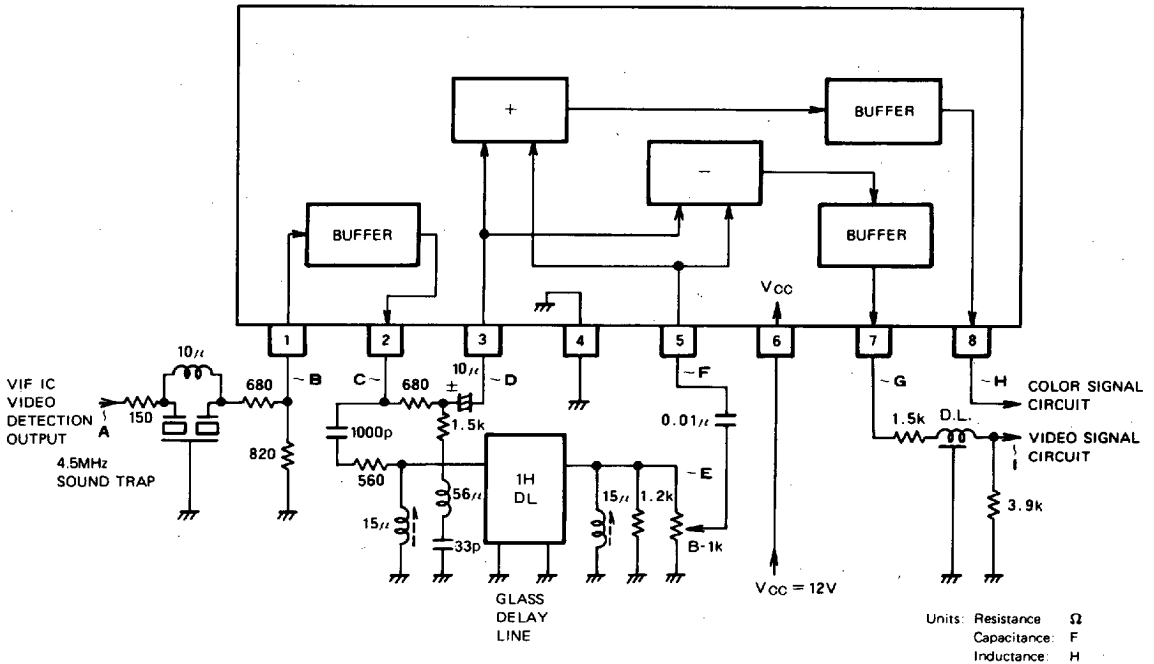
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COMB FILTER SIGNAL PROCESSOR



APPLICATION EXAMPLE



| Signal level | A | B | C | D | E | F | G | H | I | Unit |
|--------------|----|----|----|-----|-------|-----|---|---|-----|------------------|
| Video signal | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0.5 | V _{P-P} |
| Color signal | 0* | -6 | -6 | -12 | -16** | -22 | - | 0 | - | dB |

*0dB : Standard chroma signal level

** : Inverted color signal

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