

62E D ■ 6249826 0016568 344 ■ MIT2

查询M51286FP供应商

捷多邦 专业PCB打样工厂 24小时
加急出货

MITSUBISHI ICs (TV)

MITSUBISHI ELEK (LINEAR)

M51286FP/M51291FP

NTSC VIDEO CHROMA SIGNAL PROCESSOR

DESCRIPTION

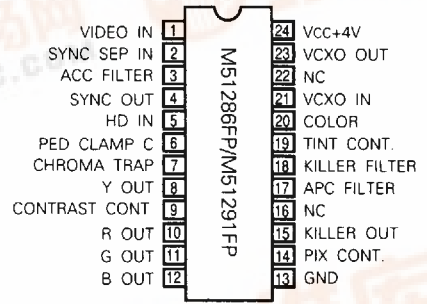
The M51286FP/M51291FP are video signal processing integrated circuits developed for an NTSC system color LCD TV.

These ICs have a built-in luminance signal processing circuit and color signal processing circuit, which convert a composite video signal to an RGB signal.

FEATURES

- Low voltage, low power dissipation design
- The number of peripheral parts used is reduced by a built-in Y/C separation circuit.
- Sync separation circuit built in these ICs
- Provided with Y-signal blanking function by HD pulse
- R.G.B signal output
- Tint, contrast, picture quality (PIX) and color controls linearly adjustable
- 24-pin shrink flat package adopted
- Same package as in PAL system video chroma IC M51289FP, pins perfectly compatible with each other
- M51286FP: C-signal blanked by HD pulse
- M51291FP: No C-signal blanked by HD pulse

PIN CONFIGURATION (TOP VIEW)



Outline 24P2Q-A

NC: No connection

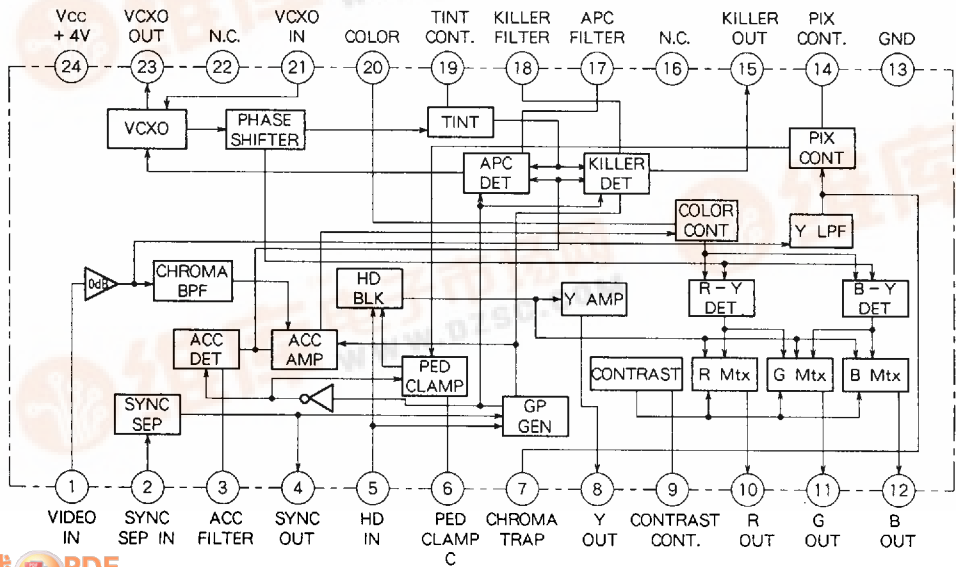
APPLICATIONS

LCD color TV and LCD color view finder

RECOMMENDED OPERATING CONDITIONS

Supply voltage range 3.5V~4.5V
 Rated supply voltage 4.0V

BLOCK DIAGRAM



M51286FP/M51291FP

MITSUBISHI ELEK (LINEAR)

NTSC VIDEO CHROMA SIGNAL PROCESSOR

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Ratings	Unit
V _{CC}	Supply voltage	4.5	V
P _d	Power dissipation	540	mW
T _{opr}	Operating temperature	-10~70	°C
T _{stg}	Storage temperature	-40~120	°C
k _θ	Thermal derating	5.4	mW/°C
V _{max}	Electrostatic capacity	±200 ※	V

※ Charging capacity : 200 pF

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

Symbol	Parameter	Test No	Test conditions	Limits			Unit
				Min.	Typ.	Max.	
I _{CC}	Circuit current	1	Input standard color bar signal of V _{CC} = 4 V.	-	14	17	mA
SYNC SEP Section							
V _{sync 1}	SYNC tip voltage	2	Measure each output signal SYNC tip voltage at pins 1, ④ when standard color bar signal of 0.7V _{p-p} is input.	2.20	2.30	2.40	V
V _{sync 7}				1.25	1.35	1.45	
V _{sync H}	SYNC output amplitude	3	Input only SYNC pulse of pulse width 4.7 μsec to pin ①. Measure the output amplitude at pin ④ when the input SYNC pulse amplitudes are 0.2 and 0.05 V _{p-p} .	2.7	3.1	3.3	V _{P-P}
V _{sync L}				2.7	3.1	3.3	
T _{sync H}	SYNC output pulse width	4	Input only SYNC pulse of pulse width 4.7 μsec to pin ①. Measure the output amplitude at pin ④ when the output SYNC pulse amplitudes are 0.2 and 0.05V _{p-p} .	3.7	4.7	5.7	μsec
T _{sync L}				3.7	4.7	5.7	
D _{sync H}	SYNC output pulse delay	5	Input only SYNC pulse of pulse width 4.7 μsec to pin ①. Measure the pulse width + delay time when the input SYNC pulse amplitudes are 0.2 and 0.05 V _{p-p} .	3.7	4.7	6.0	μsec
D _{sync L}				3.7	4.7	6.0	
Video section							
VLPF(L)	YLPF frequency characteristics (Pin ⑦)	6	Measure the frequency at which the sine wave output amplitude is -3 dB when the input signal (0.2V _{p-p}) 0.2 V _{p-p} is input. Also measure the output gain at input sine wave 3.58 MHz.	1.00	1.15	-	MHz
VLPF(H)				-	-36	-25	
Y _{max}	Maximum output	7	Input standard staircase wave of 0.7 V _{p-p} . Measure the output amplitude at pin ④ when V ₉ is 0 V.	1.2	1.5	1.8	V _{P-P}
GY _{max}	Video amplifier gain	8	Input standard staircase wave of 0.7 V _{p-p} . Calculate the ratio between the output amplitude at pin ④ and input amplitude when V ₉ is 1.7 V.	4.6	6.5	8.1	dB
Y _{ctrast} (1)	Contrast control characteristics	9	Input standard staircase wave of 0.7 V _{p-p} , and calculate the ratio of the input amplitude to the output amplitude in Test No.8 above when V ₉ is changed to 1 V, 2.5 V and 3.5 V.	0.7	2.7	4.3	dB
Y _{ctrast} (2.5)				-6.5	-4.5	-3.0	
Y _{ctrast} (3.5)				-	-22	-20	
XPIX(4)	PIX control characteristics	10	Input 1.5MHz sine wave of 0.2 V _{p-p} to the input. Measure each output amplitude at pin ④ when V ₉ is 1.7 V, and V14 is changed to 2.4 and 0 V and calculate the ratio between the input amplitude and the output amplitude when V14 = 2 V.	-8.0	-6.0	-3.5	dB
XPIX(0)				3.5	6.0	9.5	
GY _{amp}	Y AMP gain	11	Input standard staircase wave of 0.7 V _{p-p} and calculate the ratio between the output amplitude at pin ④ and input amplitude.	9.1	11.0	12.6	dB
V _{ped}	PED offset level	12	Input SYNC pulse 0.2 V _{p-p} : Measure the pedestal offset of output at pin ④.	10	50	70	mV _{P-P}
Chroma section							
C _{max}	Maximum chroma output	13	Increase input burst 0.2 V _{p-p} + CW 3.48 MHz CW amplitude, and measure the output amplitude when the output at pin ④ starts distortion.	1.8	2.2	2.5	V _{P-P}



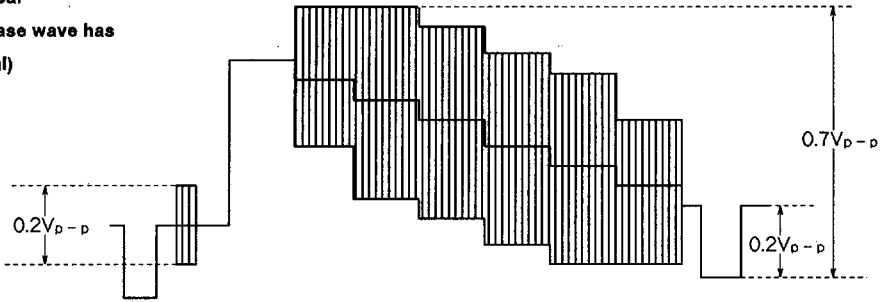
M51286FP/M51291FP

MITSUBISHI ELEK (LINEAR)

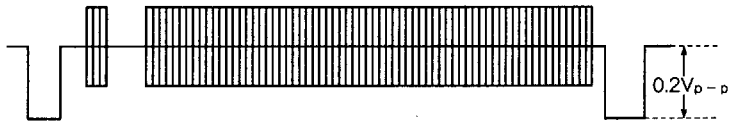
NTSC VIDEO CHROMA SIGNAL PROCESSOR

INPUT SIGNAL

Standard Color Bar
(Standard staircase wave has no chroma signal)



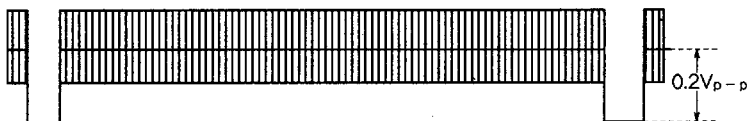
Burst + CW
(B monochromatic wave, etc.)



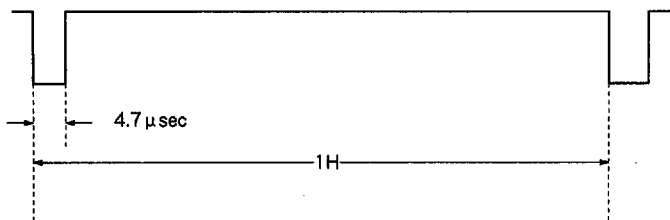
SINE WAVE



CONTINUOUS SINE WAVE
(CW)



SYNC PULSE



STANDARD HD SIGNAL



6249826 0016572 875 MIT2

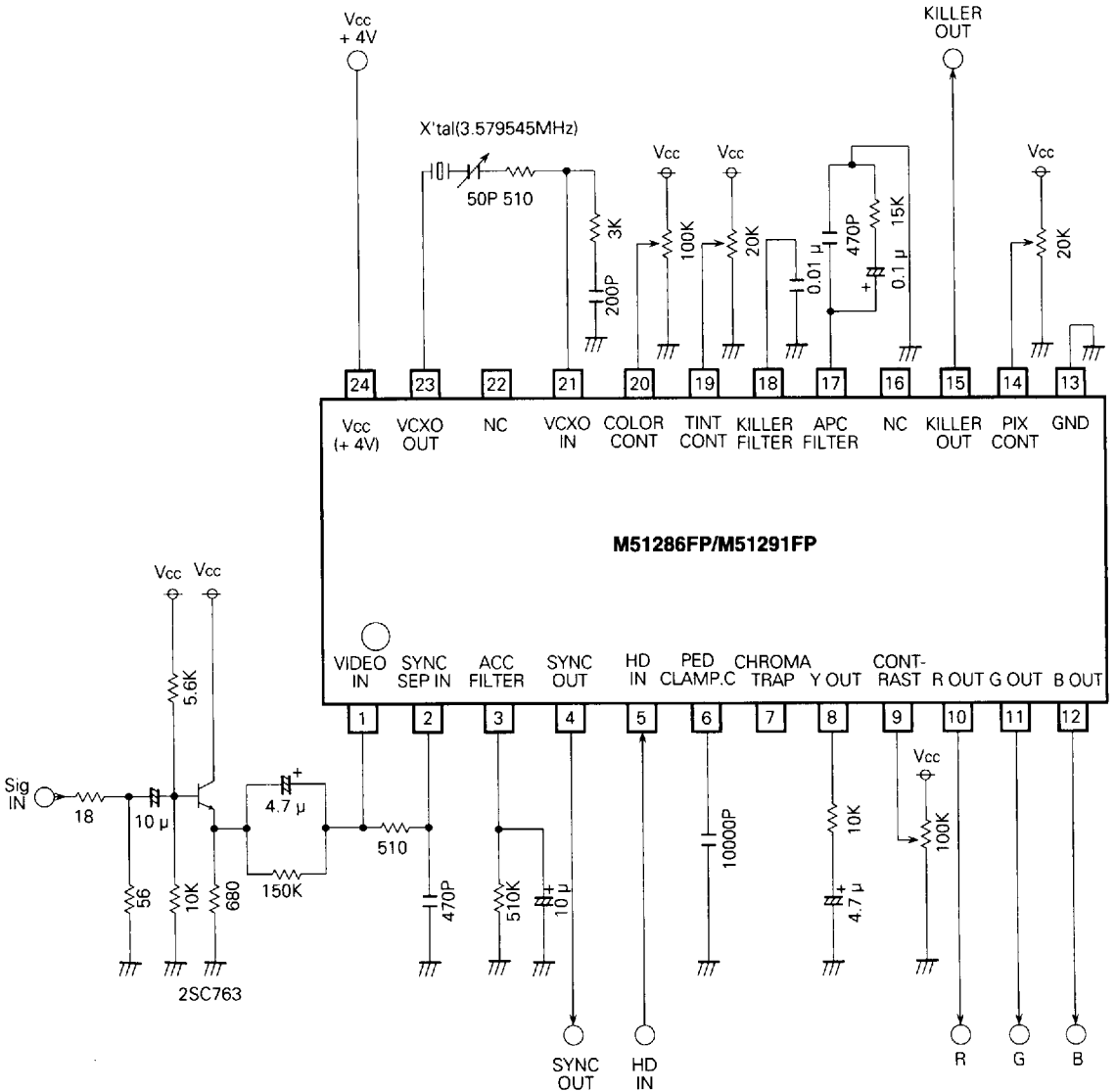
MITSUBISHI ICs (TV)

MITSUBISHI ELEK (LINEAR) 62E D

M51286FP/M51291FP

NTSC VIDEO CHROMA SIGNAL PROCESSOR

TEST CIRCUIT



Units Resistance: Ω
Capacitance: F



62E D ■ 6249826 0016573 701 ■ MIT2

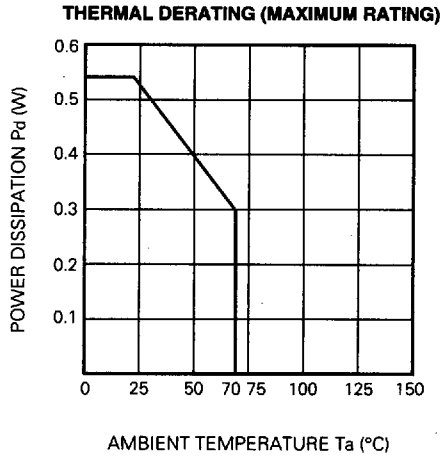
MITSUBISHI ICs (TV)

M51286FP/M51291FP

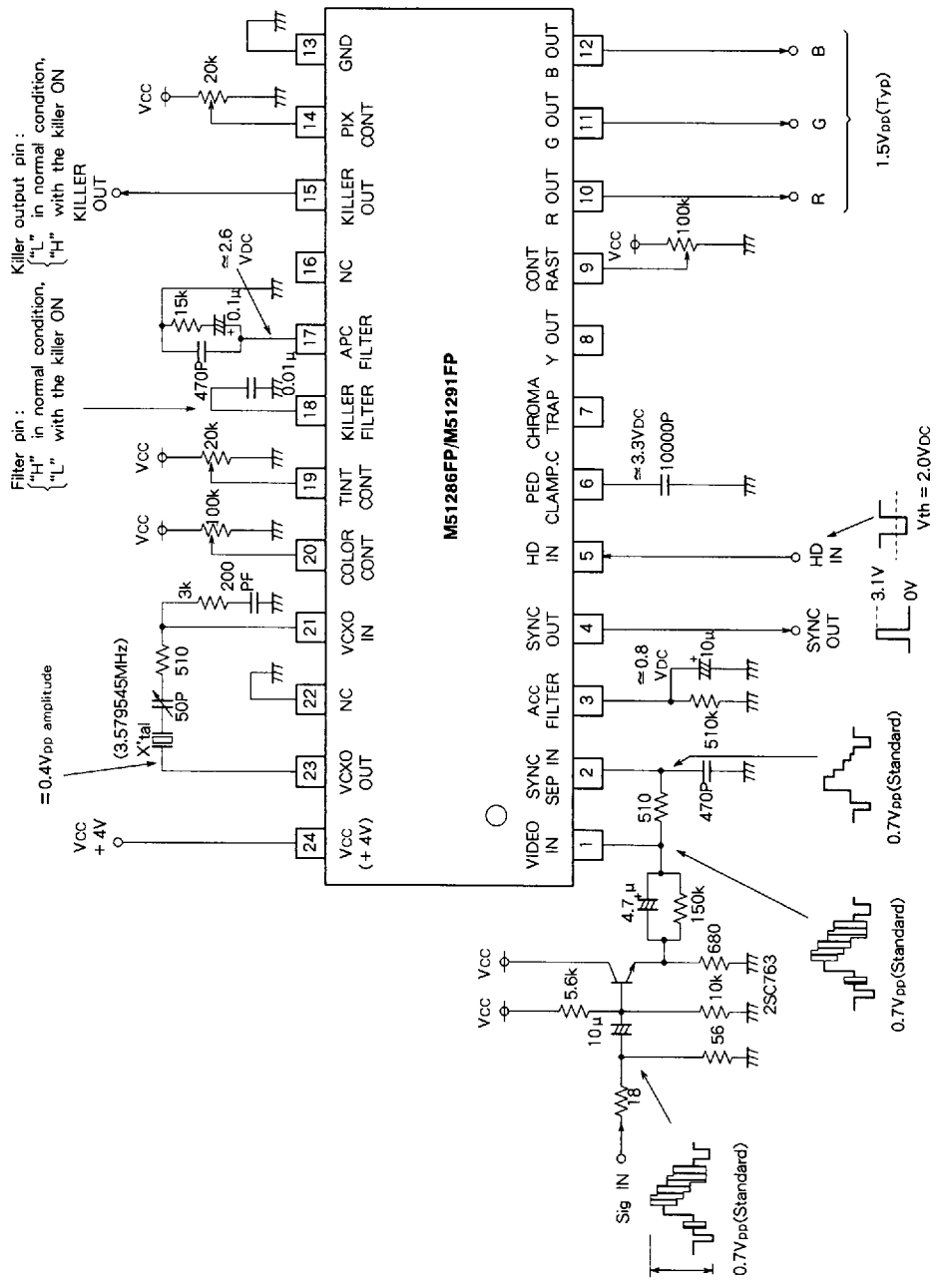
MITSUBISHI ELEK (LINEAR)

NTSC VIDEO CHROMA SIGNAL PROCESSOR

TYPICAL CHARACTERISTICS



APPLICATION EXAMPLE AND WAVE FORM AT EACH PIN AT STANDARD INPUT



Units Resistance: Ω
Capacitance: F



6249826 0016575 584 MIT2

M51286FP/M51291FP

MITSUBISHI ELEK (LINEAR) 62E D

NTSC VIDEO CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN

Pin No.	Name	Peripheral circuit of pins
①	VIDEO IN (Video input)	
②	SYNC SEP IN (SYNC separation input)	
③	ACC FILTER	
④	SYNC OUT (SYNC separation output)	



6249826 0016576 410 MIT2

M51286FP/M51291FP

MITSUBISHI ELEK (LINEAR) 62E D

NTSC VIDEO CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN (cont.)

Pin No.	Name	Peripheral circuit of pins
⑤	HD IN (HD pulse input)	
⑥	PED CLAMP C (Pedestal-clamped capacitance)	
⑦	CHROMA TRAP	
⑧	Y OUT (Y output)	



6249826 0016577 357 MIT2

MITSUBISHI ICs (TV)

MITSUBISHI ELEK (LINEAR) 62E D

M51286FP/M51291FP

NTSC VIDEO CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN (cont.)

Pin No.	Name	Peripheral circuit of pins
9	CONTRAST CONT. (Contrast control)	
10	R OUT (R output)	
11	G OUT (G output)	
12	B OUT (B output)	
13	GND (Grounding)	—
24	Vcc + 4V (Power supply)	—
16, 22	N. C.	—
14	PIX CONT. (Picture quality control)	
15	KILLER OUT (Killer output)	



DESCRIPTION OF PIN (cont.)

Pin No.	Name	Peripheral circuit of pins
17	APC FILTER	
18	KILLER FILTER	
19	TINT CONT. (Tint control)	
20	COLOR (Color control)	



6249826 0016579 12T MIT2

M51286FP/M51291FP

MITSUBISHI ELEK (LINEAR) 62E D

NTSC VIDEO CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN (cont.)

Pin No.	Name	Peripheral circuit of pins
⑳	VCXO IN (VCXO input)	
㉑	VCXO OUT (VCXO output)	

