

Sync Detector Monolithic IC MM1021

Outline

This IC is a sync detection circuit for obtaining the best reception state on VCR and TV channel selection systems. A system with high detection precision and no adjustment required can be configured due to the PLL format using a ceramic resonator. It can also be used in OSD circuits for blue-back switching and the like.

Features

1. High precision due to use of PLL format
2. Ceramic resonator means no adjustment required
3. Ceramic resonator can be selected for use in either PAL or NTSC
4. Designed for use in video equipment channel selection systems
5. Can also be used as an OSD circuit for blue back switching, etc.

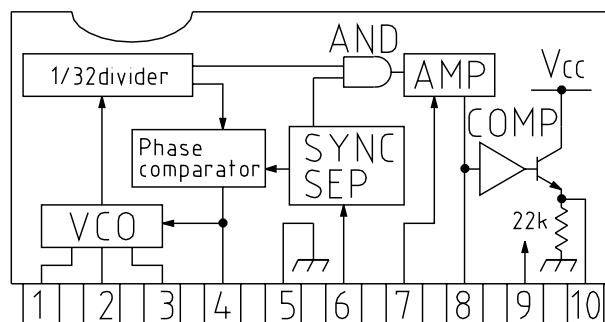
Package

SIP-10A (MM1021XS)

Applications

1. TV
2. VCR
3. Other video equipment

Block Diagram



Pin Description

Pin no.	Pin name	Internal equivalent circuit diagram	Pin no.	Pin name	Internal equivalent circuit diagram
1	OSC OUT		6	VIDEO IN	
2	OSC IN1		7	Discrimination of sync sensor adjustment	
3	OSC IN2		8	COMP IN	
4	Phase comparison output		9	Vcc	
5	GND		10	COMP OUT	

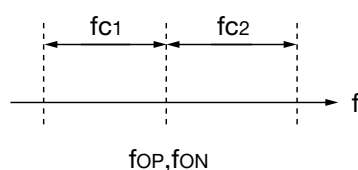
Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Ratings	Units
Storage temperature	T _{STG}	-40~+125	°C
Operating temperature	T _{OPR}	-20~+75	°C
Power supply voltage	V _{CC}	14.0	V
Allowable loss	P _d	500	mW

Electrical Characteristics (Except where noted otherwise, Ta=25°C, V_{CC}=9.0V, SW1=ON, SW2~SW7=1)

Item		Symbol	Measurement circuit	Measurement conditions	Min.	Typ.	Max.	Units
Operating power supply voltage range		V _{CC}	—	—	7.0	9.0	13.0	V
Consumption current		I _d	—	SW1=OFF, SW7=2		6.5	11.0	mA
Comparator input voltage	H	V _{IH}	TP8	SW6=2, TP5=H→L	5.8	6.0	6.2	V
	L	V _{IL}	TP8	SW6=2, TP5=L→H	3.6	3.8	4.0	V
Comparator output voltage	H	V _{OH}	TP5	SW6=2, TP8=3.0V		8.1	8.9	V
	L	V _{OL}	TP5	SW6=2, TP8=6.5V		0	0.1	V
Free-running frequency	PAL	f _{OP}	TP1			500		kHz
	NTSC	f _{ON}	TP1	SW3=SW4=2		503		kHz
Oscillation output voltage		V _O	TP1			1.9		V _{P-P}
Sync discrimination input level		V _{IN}	TP2	SW2=2, TP5=H→L		-12		dB
Sync separation working current		I _{IN}	TP4	SW5=2, TP5=L→H	100	125	150	μA
Sync discrimination voltage		V _{8H}	TP8	SW2=2, TP2=0dB		7.2		V
		V _{8L}	TP8	SW2=2, TP2=-20dB		0		V
Capture range	PAL	f _{CP}	TP3	SW2=3, SW4=1, TP5=H→L *1	150	200		Hz
	NTSC	f _{CN}	TP3	SW2=3, SW4=2, TP5=H→L *1	150	200		Hz
Pin 7 output voltage	H	V _{7H}	TP7	SW2=2 *2	0.87	0.90	0.93	V
	L	V _{7L}	TP7			0.20	0.40	V
Pin 6 voltage		V ₆	TP6	SW5=3		6.7		V

Note : *1



Capture range : f_{cp}, f_{cn}

The smaller of f_{c1} and f_{c2} values are f_{cp} and f_{cn}.

Note : *2

