

M52055P/FP

3-CHANNEL ANALOG SWITCH

DESCRIPTION

The M52055 is a semiconductor integrated circuit for electronic switches used in VCR, AUDIO signal processing applications. It contains three channel two input switch circuits with each switch is controlled independently.

FEATURES

- Low offset voltage at output.....Typ 5mV UNDER
- Low switching noise
- Wide dynamic range
- Wide frequency range.....Typ 40MHz OVER
- Low crosstalk
- High speed response.....Typ 0.2 μ s UNDER
- Low power consumption

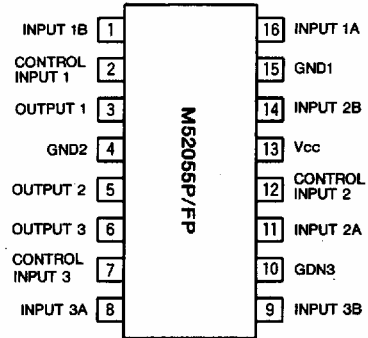
APPLICATION

VCR, AUDIO, and other applications

RECOMMENDED OPERATING CONDITION

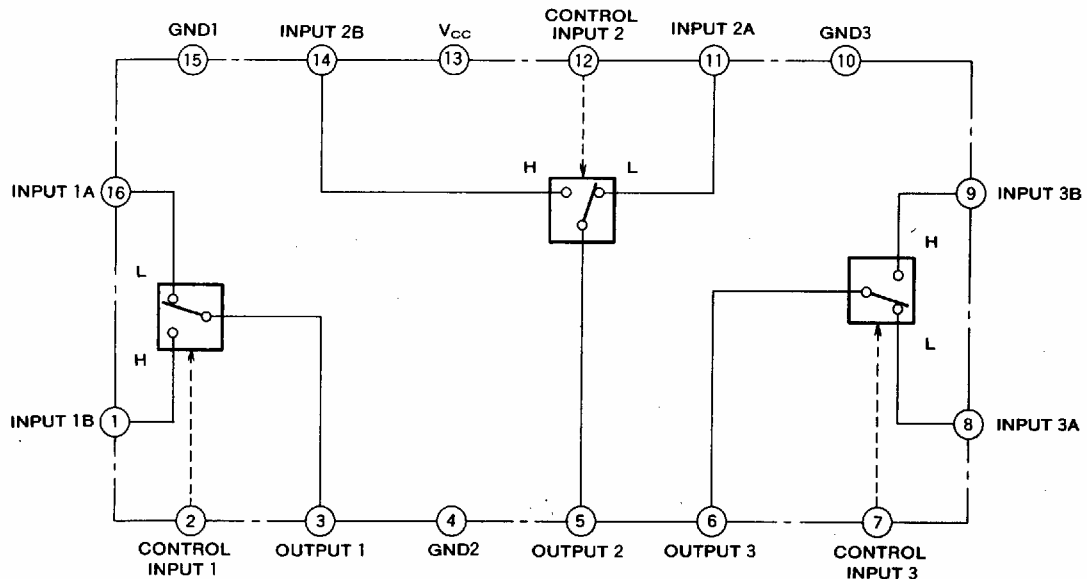
Supply voltage range.....4.5-13V

PIN CONFIGURATION (TOP VIEW)



Outline 16P4(P)
16P2P-A(FP)

BLOCK DIAGRAM



3-CHANNEL ANALOG SWITCH

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Ratings (Note)	Unit
V _{cc}	Supply voltage	14	V
P _d	Power dissipation	1000(430)	mW
K _θ	Thermal derating	10(4.3)	mW/°C
T _{opr}	Operating temperature	-20~75	°C
T _{stg}	Storage temperature	-40~125	°C

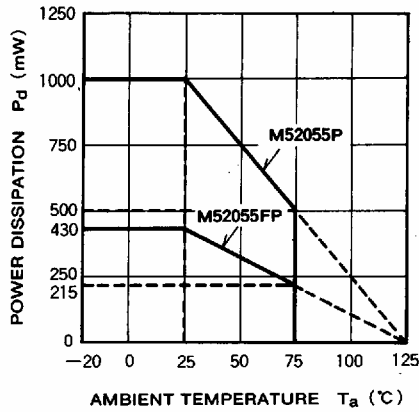
Note : ()=M52055FP

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

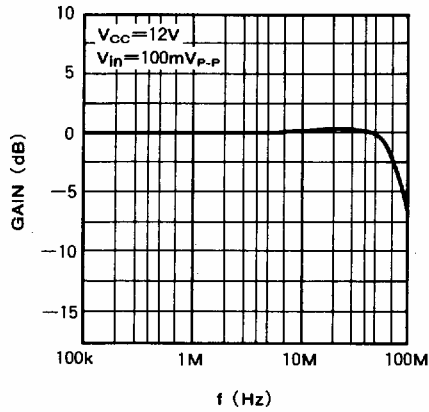
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I _{cc1}	Circuit current 1	V _{cc} =9V	5.2	7.1	9.0	mA
I _{cc2}	Circuit current 2	V _{cc} =5V	2.4	3.4	4.4	mA
G _{v1}	Voltage gain 1	f=1MHz, V _{in} =0.5V _{p-p}	-0.6	-0.1	0.4	dB
G _{v2}	Voltage gain 2	f=10MHz, V _{in} =0.5V _{p-p}	-0.6	-0.1	0.4	dB
HD	2nd. harmonic distortion	f=5MHz, V _{in} =4.5V _{p-p} , R _L =2kΩ		-60	-50	dB
CT _{sw}	Switch crosstalk	f=5MHz, V _{in} =0.5V _{p-p}		-70	-60	dB
CT _{ch}	CH crosstalk	f=5MHz, V _{in} =0.5V _{p-p}		-70	-60	dB
V _{os}	Output DC offset voltage		-10	0	10	mV
V _{th1}	SW threshold voltage 1	V _{cc} =5V	1.3		2.3	V
V _{th2}	SW threshold voltage 2	V _{cc} =9V	1.7		2.7	V
V _{th3}	SW threshold voltage 3	V _{cc} =12V	2.0		3.0	V
Z _{in}	Input impedance			20		kΩ

TYPICAL CHARACTERISTICS

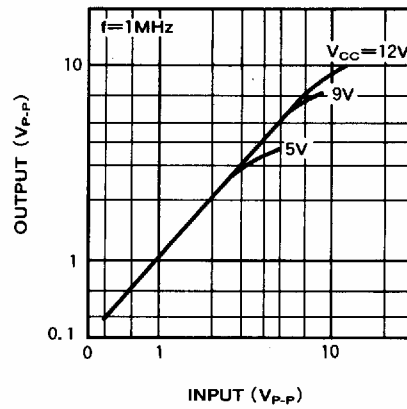
Thermal Derating (Maximum Rating)



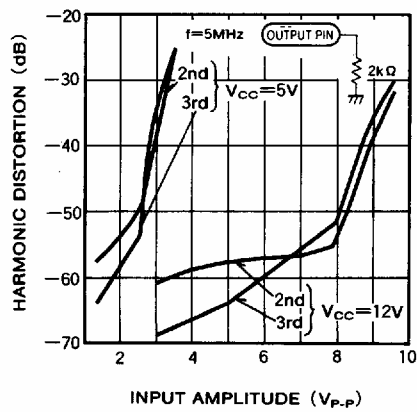
Frequency Characteristics



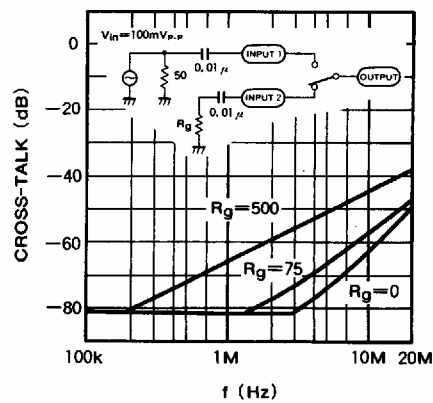
Dynamic Range



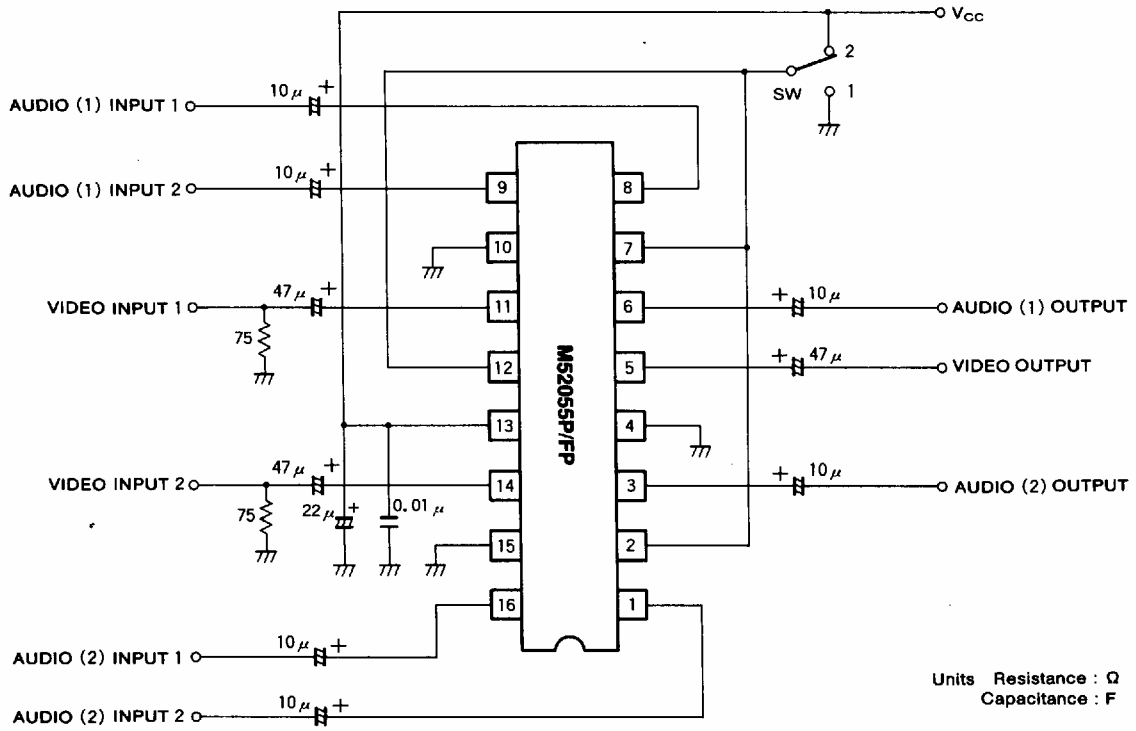
Harmonic Distortion



Cross-Talk



APPLICATION EXAMPLE



3-CHANNEL ANALOG SWITCH

DESCRIPTION OF PIN (Note : Value of Voltage and Current is at $V_{CC}=9V$.)

Pin No.	Pin name	Function	DC Voltage (V)	Pin peripheral circuit
① ⑧ ⑨ ⑪ ⑭ ⑯	IN	Signal input pin	4.6	
③ ⑤ ⑥	OUT	Signal output pin	3.2	
② ⑦ ⑫	SW	Switching pulse input pin	—	

PRECAUTIONS FOR APPLICATION

- Maximum output drive current is 5mA.
- Pin②,⑦,⑫,(control pin) should not be subjected to voltage over V_{CC} or under GND.
- Output circuit is "emitter follower circuit", and typical built-in drive current is shown as follows. If output drive is insufficient, keep external drive current within above limits. (<5mA)

Power supply voltage (V_{CC})	Drive current in IC (Typ.)
5V	190 μ A
9V	350 μ A
12V	530 μ A