

Three-Input, One-Output Switch with Driver

PRODUCT DESCRIPTION

The MS2244 is an integrated video switch, which achieves three-input, one-output for video or audio signal.

The MS2244 integrates 75Ω driver circuit, which can drive TV monitor directly. The operating voltage ranges from 5V to 12V and the bandwidth is 10MHz. In addition, the anti-crosstalk is 70dB(4.43MHz). The MS2244 also integrates clamp circuit to clamp the video signal to appropriate operating level.

The MS2244 could be applied to VCR, camera, TV, CD player and so on.



SOP8

FEATURES

- Wide Operating Voltage (+4.75~+13V)
- Three-Input, One-Output
- Integrated 75Ω Load Driver
- Realize Silence
- Internal Clamp
- Low Power Dissipation: 16.5mA
- Crosstalk: 70dB (4.43MHz)
- Bandwidth: 10MHz
- SOP8 Package

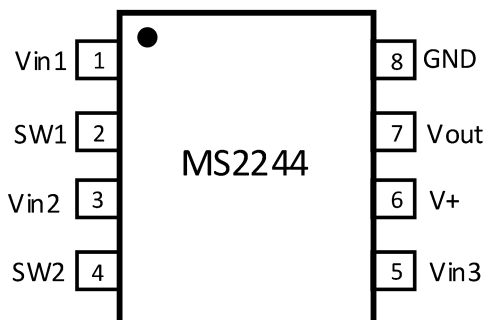
APPLICATIONS

- VCR
- Camera
- TV
- CD Player

PRODUCT SPECIFICATION

Part Number	Package	Marking
MS2244	SOP8	MS2244

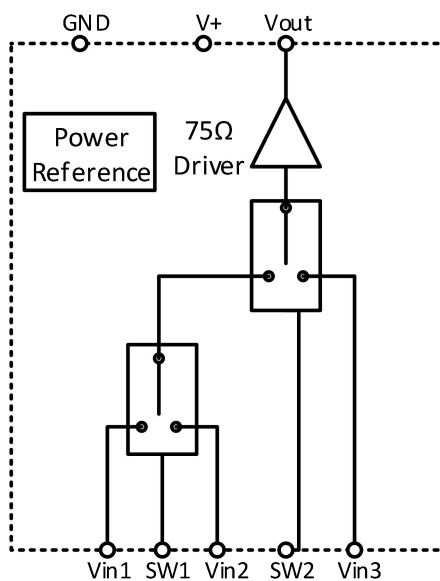
PIN CONFIGURATION



PIN DESCRIPTION

Pin	Name	Type	Description
1	Vin1	I	Input 1
2	SW1	I	Switch 1
3	Vin2	I	Input 2
4	SW2	I	Switch 2
5	Vin3	I	Input 3
6	V+	-	Power Supply
7	Vout	O	Output
8	GND	-	Ground

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Any exceeding absolute maximum rating application causes permanent damage to device. Because long-time absolute operation state affects device reliability. Absolute ratings just conclude from a series of extreme tests. It doesn't represent chip can operate normally in these extreme conditions. Unless otherwise noted, T=25°C.

Parameter	Symbol	Range	Unit
Power Supply	V+	15	V
Power Dissipation	PD	700	mW
Operating Temperature	Topr	-20 ~ +75	°C
Storage Temperature	Tstg	-40 ~ +125	°C

ELECTRICAL CHARACTERISTICS

Unless otherwise noted, T=25°C, V+=5V.

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Power Supply	V+		4.75		13.0	V
Total Current	I _{cc}	S1=S2=S3=S4=S5=2	11.5	16.5	22.0	mA
Gain	G _v	V _{in} =2V _{pp} , 100kHz, V _o /V _i , R _L =150Ω	-0.8	-0.3	+0.2	dB
Bandwidth	G _f	V _{in} =2V _{pp} , V _o (10MHz)/V _o (100kHz), R _L =150Ω	-1.0		+1.0	dB
Differential Gain	DG	V _{in} =2V _{pp} , ladder signal, R _L =150Ω		0.3		%
Differential Phase	DP	V _{in} =2V _{pp} , ladder signal, R _L =150Ω		0.3		Deg
Output Offset	V _{off}	Variation in output voltage when S1=S2=S3=2, S5=1 or 2		0	±30	mV
Crosstalk	CT	Input 2V _{pp} , 4.43MHz, V _o /V _i		-70		dB
Switch Voltage	V _{ch}	Switch is on	2.4			V
	V _{cl}	Switch is off			0.8	V
Harmonic Distortion	THD1	Input sine-wave 1kHz, 1V _{pp} , without load	0.11		0.65	%
	THD2	Input sine-wave 1kHz, 1V _{pp} , with 150kΩ load	0.12		0.6	%

The connection methods of switch are as follows:

- a) S1=1, S2=S3=S4=S5=2.
- b) S2=S4=1, S1=S3=S5=2.
- c) S1=S2=2, S3=S5=1, S4=1 or 2.

FUNCTION DESCRIPTION

Logic Control

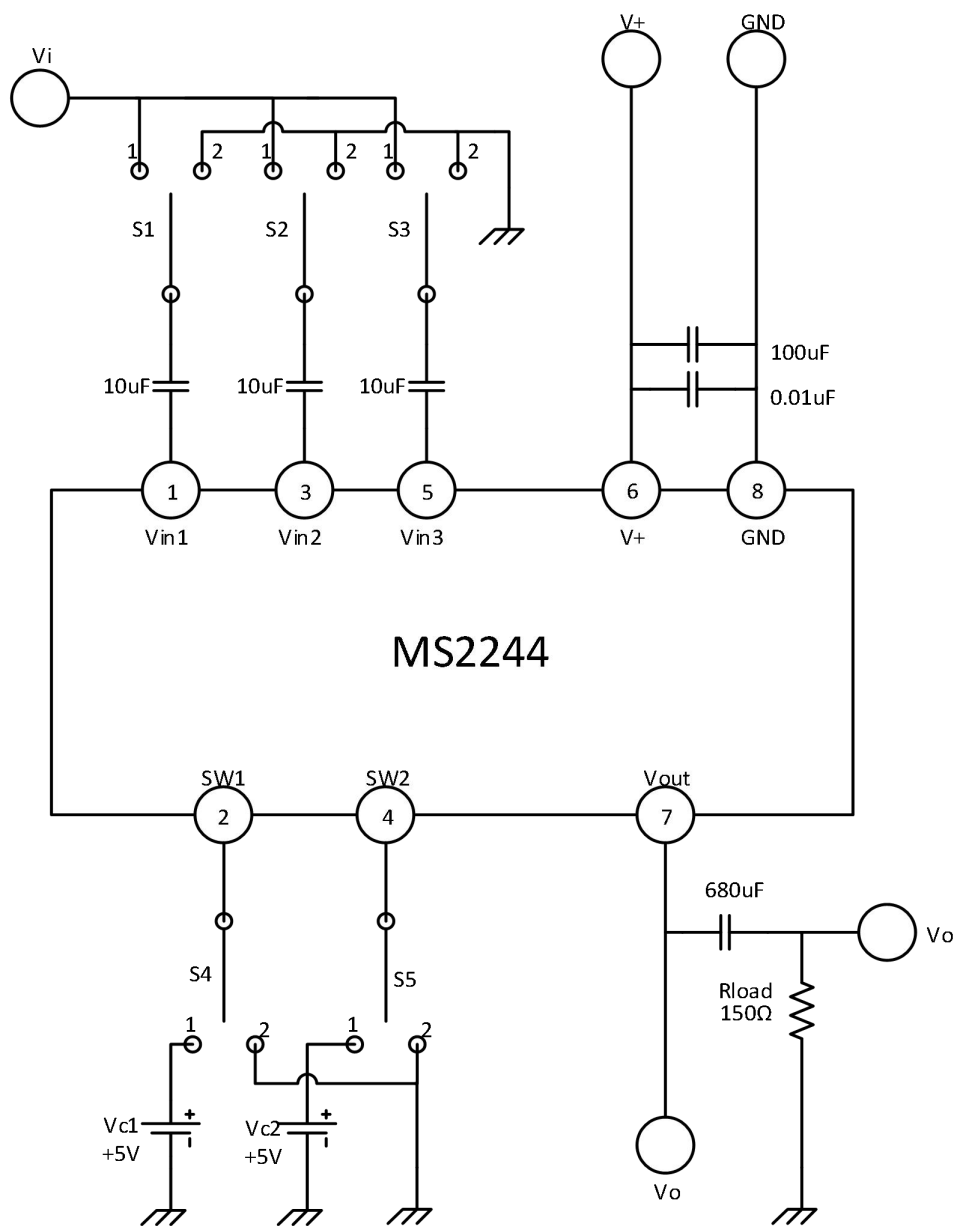
SW1	SW2	V _{out}
L	L	V _{in1}
H	L	V _{in2}
L/H	H	V _{in3}

Note: Input clamp voltage is about the 2/5 of power supply.

System Optimization

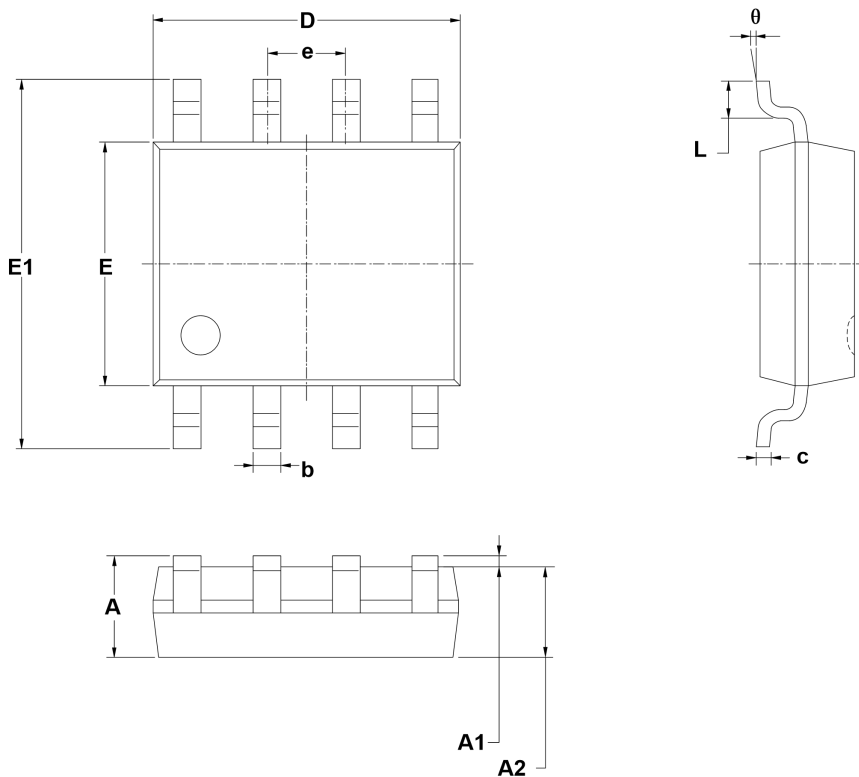
In order to avoid the instability of the input voltage caused by micro current, so 1MΩ resistor can be connected between input and ground pin.

TYPICAL APPLICATION DIAGRAM



PACKAGE OUTLINE DIMENSIONS

SOP8



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.27(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

MARKING and PACKAGING SPECIFICATIONS

1. Marking Drawing Description



Product Name: MS2244

Product Code : XXXXXXX

2. Marking Drawing Demand

Laser printing, contents in the middle, font type Arial.

3. Packaging Specifications

Device	Package	Piece/Reel	Reel/Box	Piece/Box	Box/Carton	Piece/Carton
MS2244	SOP8	4000	1	4000	8	32000

STATEMENT

- All Revision Rights of Datasheets Reserved for Ruimeng. Don't release additional notice.
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- When using Ruimeng products to design and produce, purchaser has the responsibility to observe safety standard and adopt corresponding precautions, in order to avoid personal injury and property loss caused by potential failure risk.
- The process of improving product is endless. And our company would sincerely provide more excellent product for customer.

**MOS CIRCUIT OPERATION PRECAUTIONS**

Static electricity can be generated in many places. The following precautions can be taken to effectively prevent the damage of MOS circuit caused by electrostatic discharge:

1. The operator shall ground through the anti-static wristband.
2. The equipment shell must be grounded.
3. The tools used in the assembly process must be grounded.
4. Must use conductor packaging or anti-static materials packaging or transportation.



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