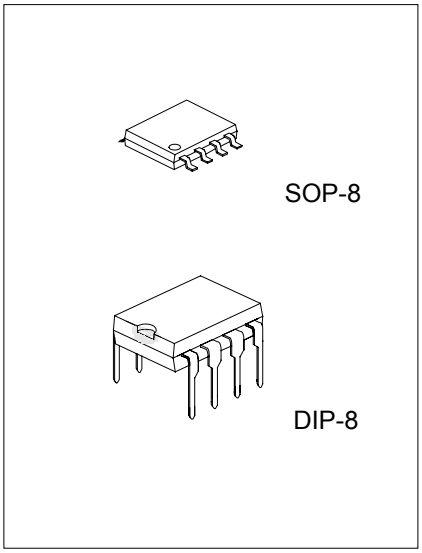
UTC M3366 LINEAR INTEGRATED CIRCUIT

3-INPUT VIDEO SWITCH WITH 75Ω DRIVER



*Pb-free plating product number: M3366L

DESCRIPTION

The UTC M3366 is a three input integrated video switch selects one video or audio signal from three input signals.

It contains driver circuit for 75Ω load and is able to connect to TV monitor.

Its operating supply voltage range is 5 to 12V and bandwidth is 10MHz. Crosstalk is 70dB (at 4.43MHz).

The UTC M3366 contains clamp function and it can be operated while setting DC level fixed in position of the video signal.

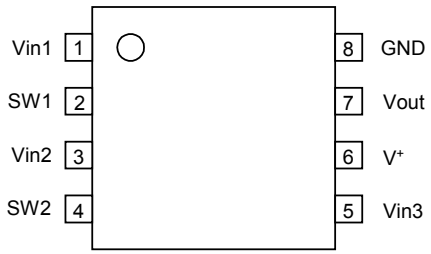
FEATURES

*Operating Voltage 4.75 to 13V
*3 Input- 1 Output
*Internal Driver Circuit for 75Ω Impedance
*Muting Function available
*Internal Clamp Function
*Low power Dissipation 16.5mA
*Cross-talk 70dB (at 4.43MHz)
*Wide Frequency Range 10MHz (2Vp-p Input)

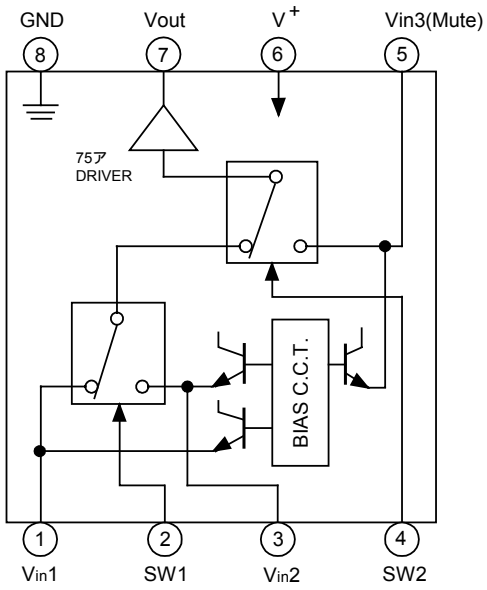
APPLICATION

*VCR,Video Camera, AV ,TV,Video Disc Player

PIN CONFIGURATION



BLOCK DIAGRAM



INPUT CONTROL SIGNAL-OUTPUT SIGNAL

SW1	SW2	OUTPUT SIGNAL
L	L	Vin 1
H	L	Vin 2
L/H	H	Vin 3

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

ABSOLUTE MAXIMUM RATINGS (Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	15	V
Power Dissipation DIP-8 SOP-8	P_D	 500 300	mW
Operating Temperature Range	Topr	-20 ~ +75	°C
Storage Temperature Range	Tstg	-40 ~ +125	°C

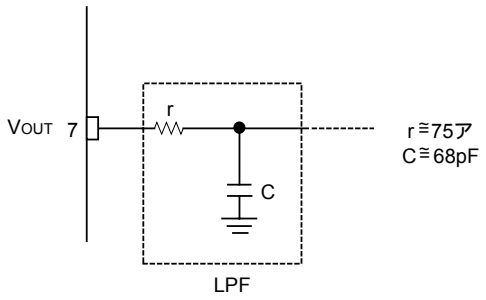
ELECTRICAL CHARACTERISTICS (V^+=5V,Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Recommended Supply Voltage	V^+		4.75		13.0	V
Operating Current	Icc	S1=S2=S3=S4=S5=2	11.5	16.5	22.0	mA
Voltage Gain	Gv	Vin=2.0Vp-p, 100kHz, Vo/Vi, R_L=150Ω	-0.8	-0.3	+0.2	dB
Frequency Characteristic	Gf	Vin=2.0Vp-p, Vo(10MHz)/Vo(100kHz), R_L=150Ω	-1.0		+1.0	dB
Differential Gain	DG	Vin=2.0Vp-p, staircase, R_L=150Ω		0.3		%
Differential Phase	DP	Vin=2.0Vp-p, staircase, R_L=150Ω		0.3		deg.
Output Offset Voltage	Voff	S1=S2=S3=2, S5=1→2 Vo:voltage change		0	± 30	mV
Crosstalk	CT	Vin=2.0Vp-p, 4.43MHz, Vo/Vi		-70		dB
Switch Change Voltage	V_{CH}	All inside SW: ON	2.4			V
	V_{CL}	All inside SW: OFF			0.8	

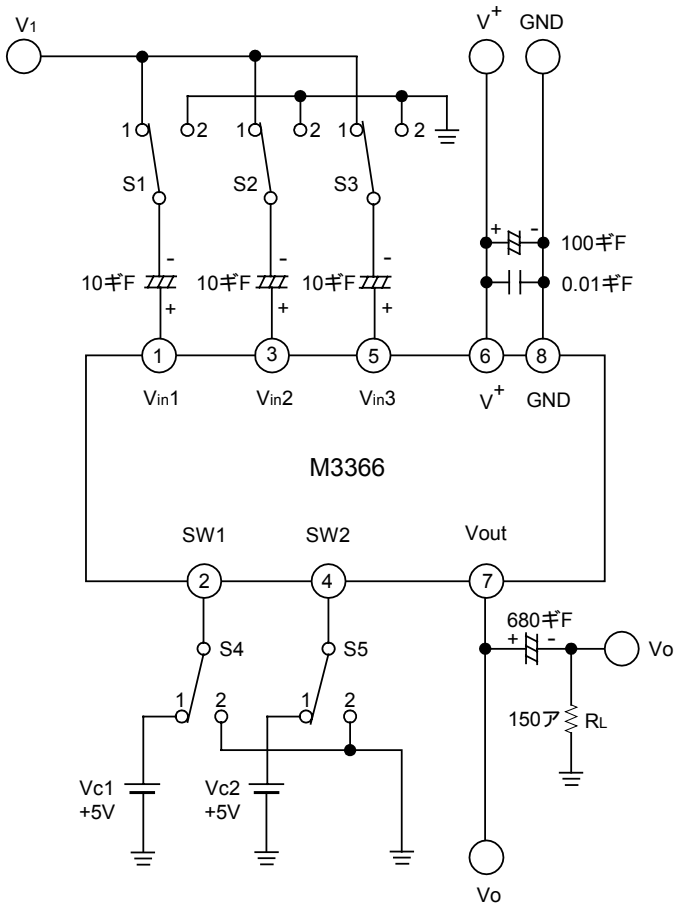
Note: Unless specified,tested with three mode below.
(a) S1=1, S2=S3=S4=S5=2 (b) S2=S4=1, S1=S3=S5=2 (c) S1=S2=2, S3=S5=1, S4=1 or 2

APPLICATION

Oscillation Prevention on light loading conditions Recommended under circuit
This IC requires 1MΩ resistance between INPUT and GND pin for clamp type input since the minute current causcs an unstable pin voltage.



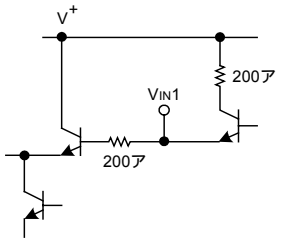
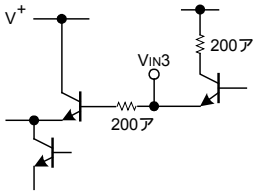
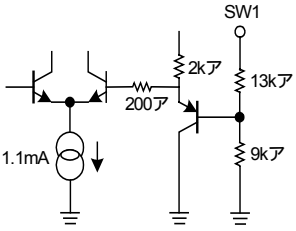
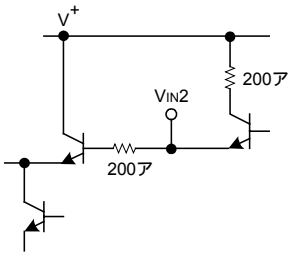
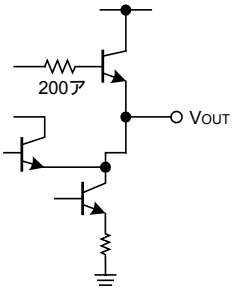
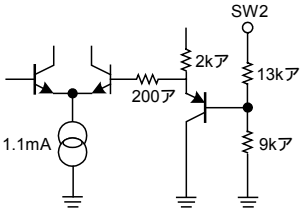
TEST CIRCUIT



DC Voltage Each Terminal (Typ.on Test Circuit Ta=25℃)

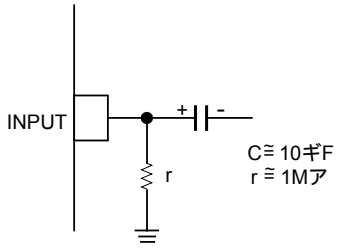
Terminal Name	V_{IN1}	SW1	V_{IN2}	SW2	V_{IN3}	V^+	V_{OUT}	GND
DC Voltage	$\frac{2}{5}V^+$	——	$\frac{2}{5}V^+$	——	$\frac{2}{5}V^+$	——	$\frac{2}{5}V^+$-0.7	——

EQUIVALENT CIRCUIT

PIN NO.	FUNC-TION	INSIDE EQUIVALENT CIRCUIT	PIN NO.	FUNC-TION	INSIDE EQUIVALENT CIRCUIT
1	$V_{IN}1$		5	$V_{IN}3$ (Mute)	
2	SW1		6	V^+	
3	$V_{IN}2$		7	V_{OUT}	
4	SW2		8	GND	

APPLICATION

This IC requires 1MΩ resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



This IC requires 0.1μ F capacitor between INPUT and GND ,1MΩ resistance between INPUT and GND for clamp type input at mute mode.