

KA8405

3-INPUT SWITCH

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The KA8405 is a monolithic integrated circuit designed for the 3-input switch in a VCR or a TV system.

FEATURES

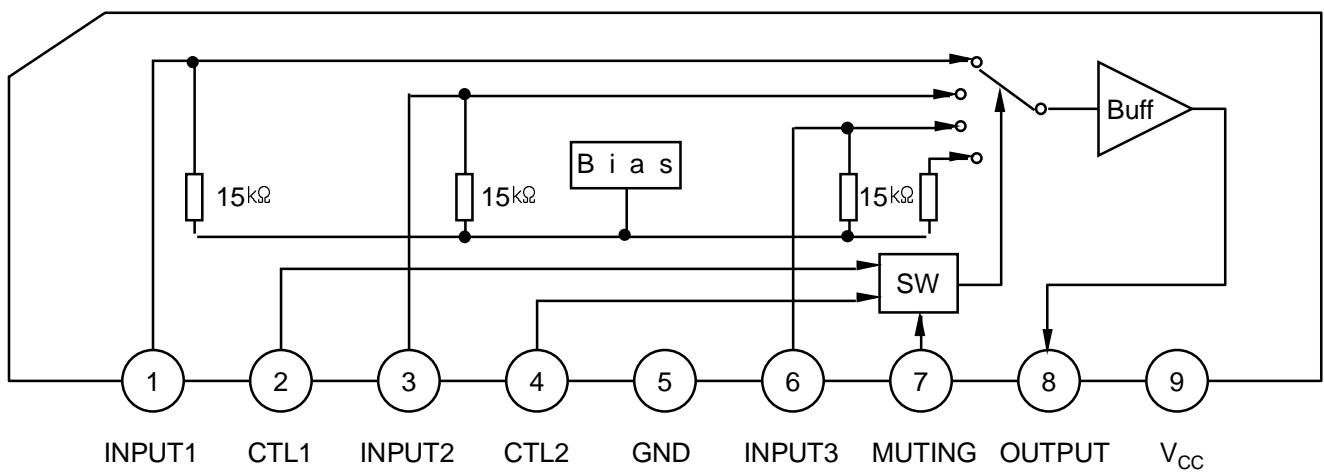
- Suitable for video and audio signal
- Low current operation (5.6mA typ)
- Very low level crosstalk (- 70dB typ)

9- SIP

ORDERING INFORMATION

Device	Package	Operating Temperature
KA8405	9-SIP	- 10 °C ~ + 75 °C

BLOCK DIAGRAM



TRUTH TABLE

CTL1	CTL2	MUTING	OUTPUT
H	L	L	INPUT 1
L	H	L	INPUT 2
L	L	L	INPUT 3
H	H	L	Undefined
*	*	H	NONE

* Don't care

PIN DESCRIPTIONS

PIN NO	FUNCTION	DC VOLTAGE	IN / OUT CIRCUIT
1	INPUT1	6.1V	
2	CONTROL INPUT 1	Logic Low Logic High (Note 6)	
3	INPUT2	6.1V	SAME AS PIN 1
4	CONTROL INPUT 2	Logic Low Logic High (Note 6)	SAME AS PIN 2
5	GND		
6	INPUT 3	6.1V	SAME AS PIN 1
7	MUTING	Logic Low, Logic High (Note 6)	SAME AS PIN 2
8	OUTPUT	5.3V	
9	Vcc	9.0V	

Note 6 : Logic Low < 2.7V, Logic High > 3.7V

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{ccmax}	14	V
Signal Level At Input Pin	V _{input}	5	V _{pp}
	V _{ct1}	$V_{cc} - 0.2 < V_{cc} < V_{cc} + 0.2$	V
Power Dissipation	P _{dmax}	500	mW
Operating Temperature	T _{opr}	- 20 ~ 75	°C
Storage Temperature	T _{stg}	- 40 ~ 125	°C

ELECTRICAL CHARACTERISTICS (V_{cc} = 9V, T_a = 25 °C)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V _{cc}	Note 1	8.0	9.0	10.0	V
Total current	I _{cc}	SW1 ~ SW6 = "2"	4.2	5.6	8.2	mA
Frequency Characteristic	GF1	V _i = 2.5V _{pp} , 20Hz / 100KHz V _o (20Hz) / V _o (100KHz)	- 0.5	0	0.5	dB
	GF2	V _i = 2.5V _{pp} , 20Hz / 100KHz V _o (20Hz) / V _o (100KHz)				
Insertion Loss	GL	V _i = 2.5V _{pp} 100KHz, V _o / V _i	- 0.5	- 0.3	0	dB
Distortion	THD	V _i = 2.5V _{pp} , 1KHz	0	0.2	0.5	%
Differential Gain	DG	V _i = Input Waveform 1 (Note 2)	-	0.5	-	%
Differential Phase	DP	V _i = Input Waveform 1 (Note 2)	-	0.5	-	deg
Output Offset Voltage	V _{os}	Note 3	- 50	0	+ 50	mV
Cross - Talk	C _{R1}	V _i = 2.0pp 4.43MHz	-	- 70	- 60	dB
SW Control Voltage	V _{CON}	Note 4	2.7	3.2	3.7	V
Muting Capacity	C _{TM}			- 50	- 40	dB
Video Output Level	V _{OUT}	V _i = 2.0pp 100KHz, V _o	1.89	1.93	2.00	V _{pp}
Input Impedance	R _i			15		kΩ
Output Impedance	R _o			10		Ω

Note 1 : Supply Voltage means a recommended operation range but spec data guarantee.

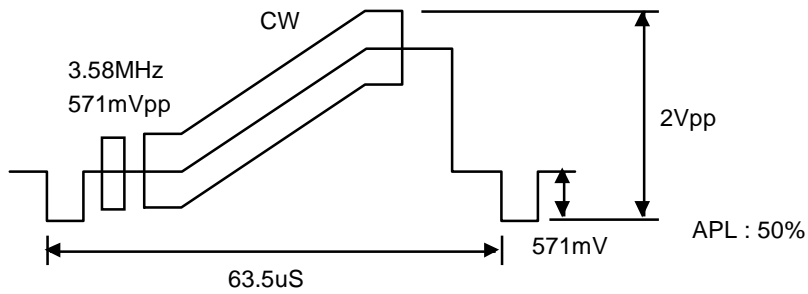
Note 2 : Not set system guaranteed but IC test program guaranteed

Note 3 : In SW1=SW2=SW3=2, SW4=1 → SW5=SW6=2 etc., read the difference of output DC voltage.

Note 4 : Guaranteed switching level (Active & Non-active)

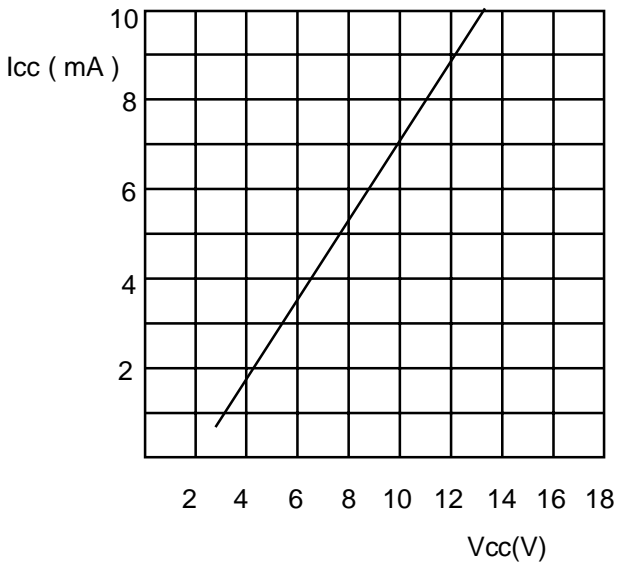
Note 5 : Specifications are subject to change without notice.

INPUT WAVEFORM 1

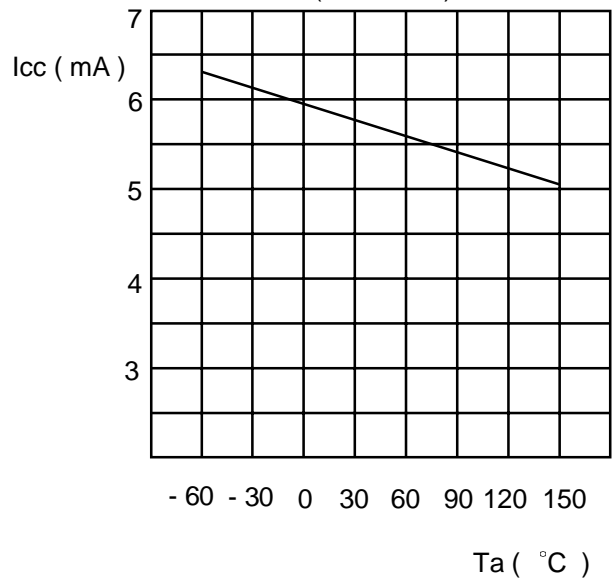


CHARACTERISTICS GRAPH

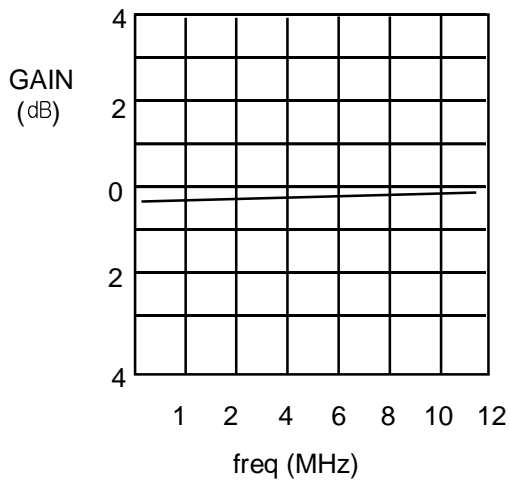
V_{cc} vs I_{cc}
(T_a = 25 °C)



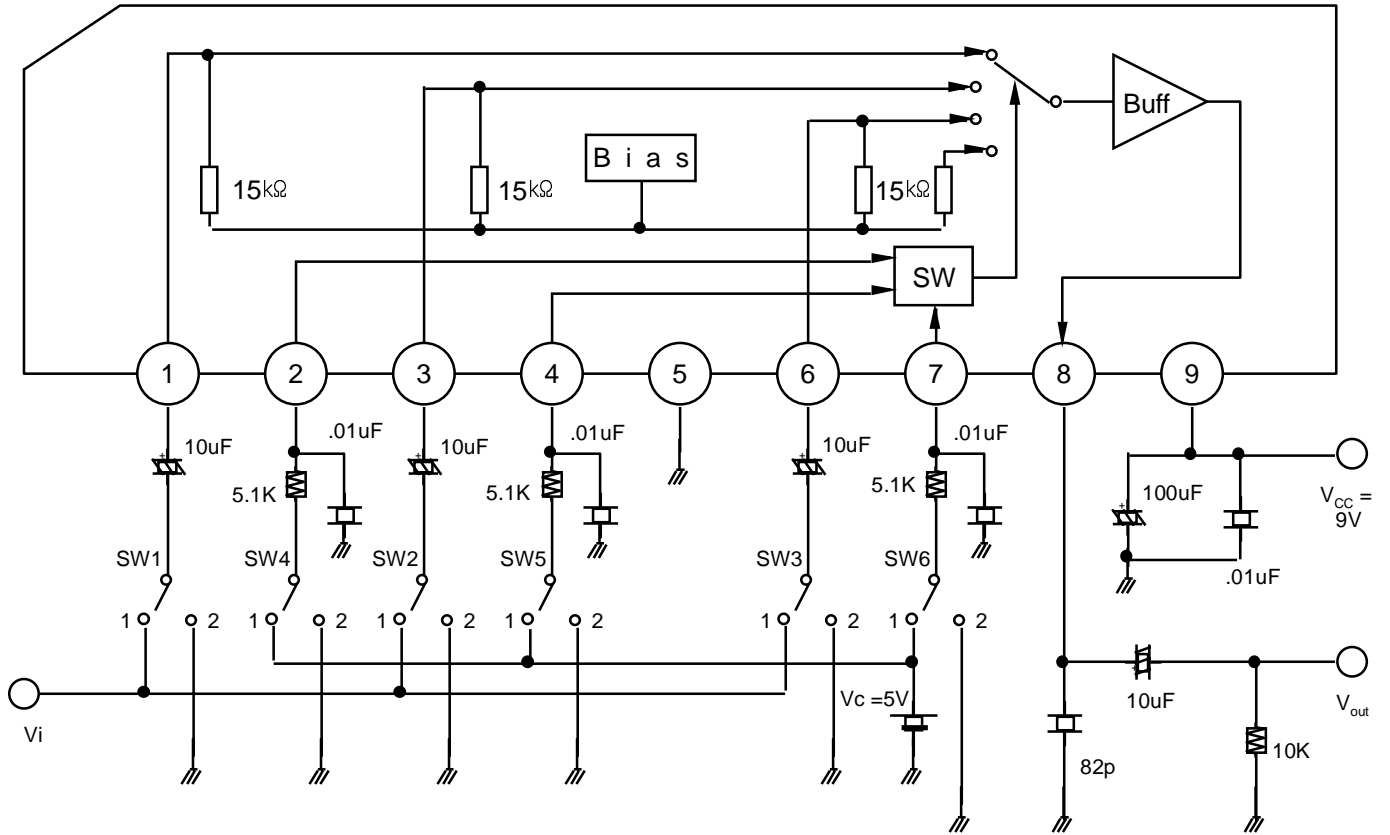
T_a vs I_{cc}
(V_{cc} = 9V)



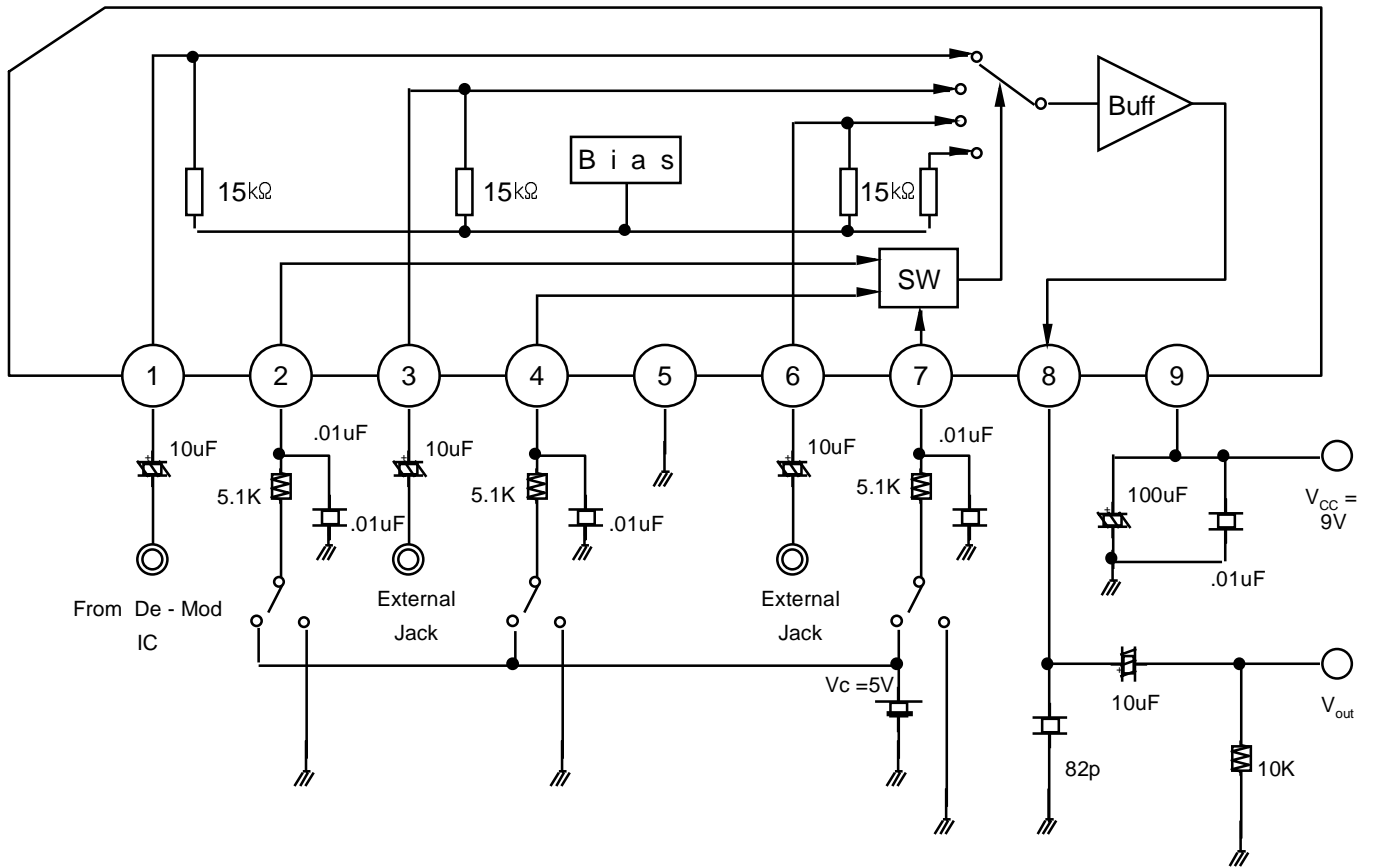
FREQUENCY RESPONSE



TEST CIRCUIT

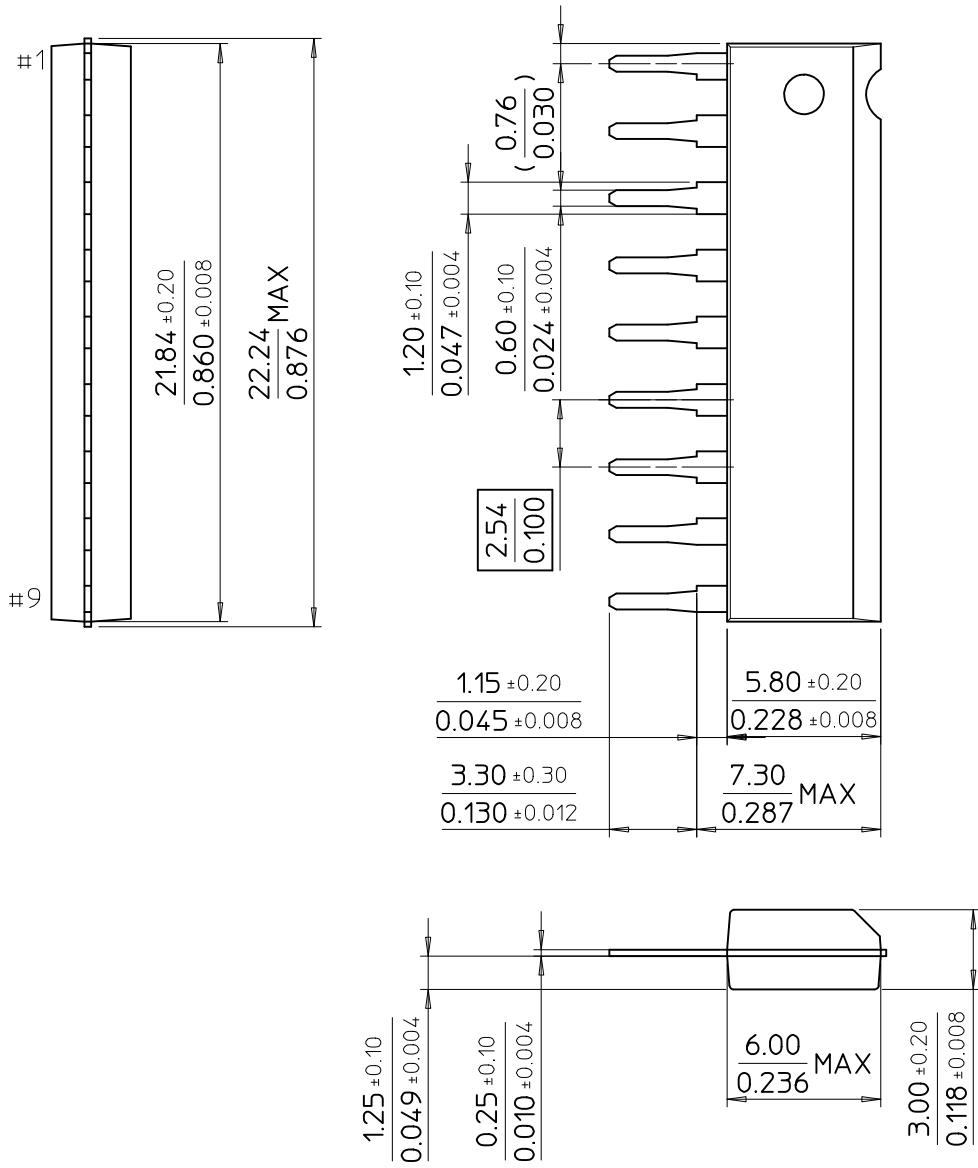


APPLICATION CIRCUIT



9-SIP

Dimensions in Milimeters/Inches



SAMSUNG ELECTRONICS CO.,LTD.