

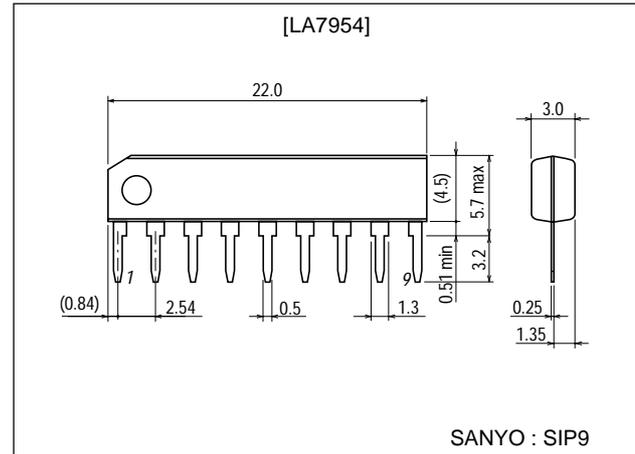
**LA7954****Video Switch for TV/VCR Use****Features**

- 4 inputs, 1 output.
- Excellent crosstalk characteristic.
- Wide band.

Package Dimensions

unit:mm

3017D-SIP9

**Specifications****Maximum Ratings** at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_7 max		14	V
Maximum input supply voltage 1	V_4 max, V_6 max, V_8 max, V_9 max		8	V
Maximum input supply voltage 2	V_2 max, V_3 max	$V_{CC}=14\text{V}$	14	V
Maximum output current	I_1 max		7	mA
Allowable power dissipation	P_d max	$T_a \leq 65^\circ\text{C}$	540	mW
Operating temperature	T_{opr}		-20 to +65	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Operating voltage range	$V_{CC\ op}$		8 to 13.5	V
Recommended supply voltage	V_{CC}		12	V

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LA7954

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC}=12\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current drain	I_{CC}		9	12	17	mA
Input bias voltage	V_4, V_6, V_8, V_9		4.5	4.8	5.1	V
Output bias voltage	V_1		3.7	4.1	4.3	V
Output DC offset voltage	V_{OS}		-50	0	+50	mV
Control threshold voltage	V_{2H}, V_{3H}		2.3			V
	V_{2L}, V_{3L}				0.7	V
Control input current	I_2, I_3		-20	-6		μA
Voltage gain	GV	$f=1\text{MHz}, V_{IN}=2\text{Vp-p}$ (Note 1)	-0.5	-0.2		dB
Frequency characteristic	GV_f	0dB at $f=100\text{kHz}$ (Note 1) $f=10\text{MHz}, V_{IN}=2\text{Vp-p}$	-3	0		dB
Output dynamic range	VDR	$f=15\text{kHz}, V_{IN}=6\text{Vp-p}$ (Note 1)		0.3	6	%
Crosstalk (Note 2)	C_T	$V_{IN}=2\text{Vp-p}, f=3\text{MHz}$ (Note 1)	48	58		dB
		$V_{IN}=2\text{Vp-p}, f=5\text{MHz}$ (Note 1)	45	55		dB

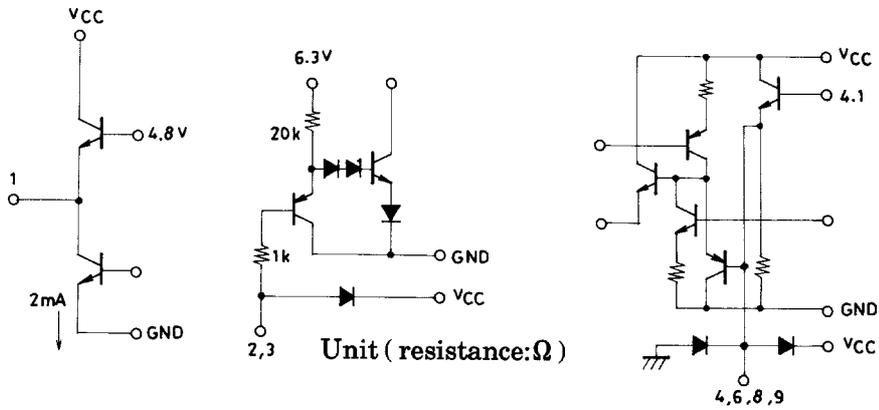
* Current flowing into the IC is defined as positive ; current flowing out is defined as negative.

Video Switch Truth Table

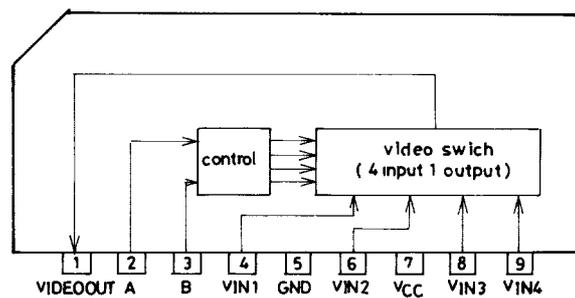
S2 (Pin 2)	S3 (Pin 3)	V_{IN1} (Pin 4)	V_{IN2} (Pin 6)	V_{IN3} (Pin 8)	V_{IN4} (Pin 9)
H	H	ON	OFF	OFF	OFF
L	H	OFF	ON	OFF	OFF
H	L	OFF	OFF	ON	OFF
L	L	OFF	OFF	OFF	ON

Note 1 : Refer to this Truth Table and make measurements by switching S2, S3.

Input/Output Equivalent Circuit

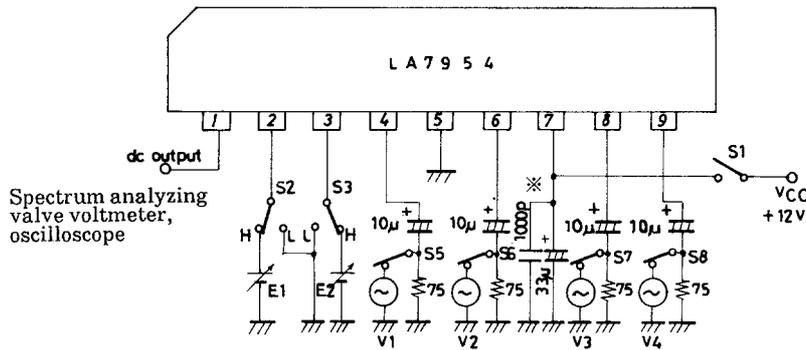


Equivalent Circuit Block Diagram



LA7954

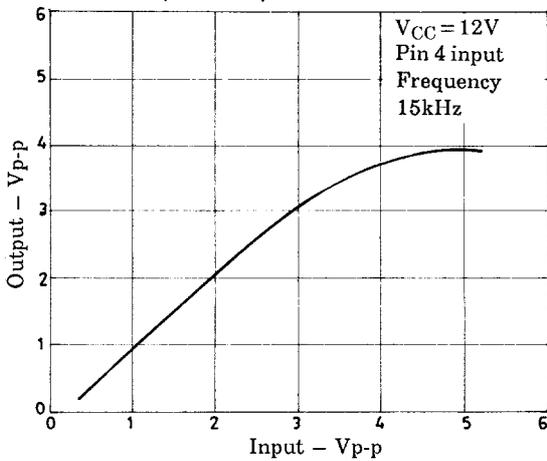
Test Circuit



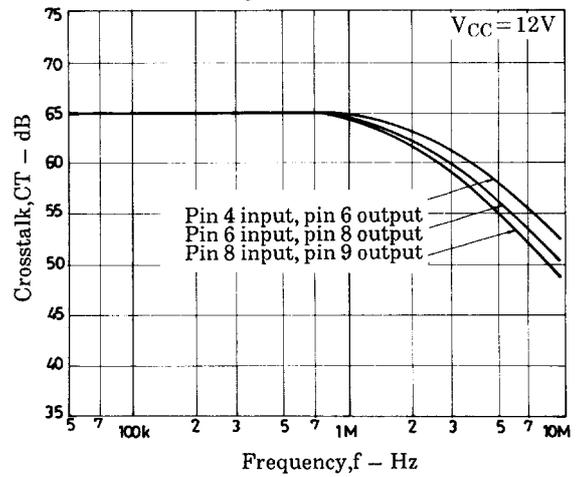
※ : Connect the bypass capacitor for V_{CC} as close to pin 7 as possible.

Unit (resistance:Ω, capacitance:F)

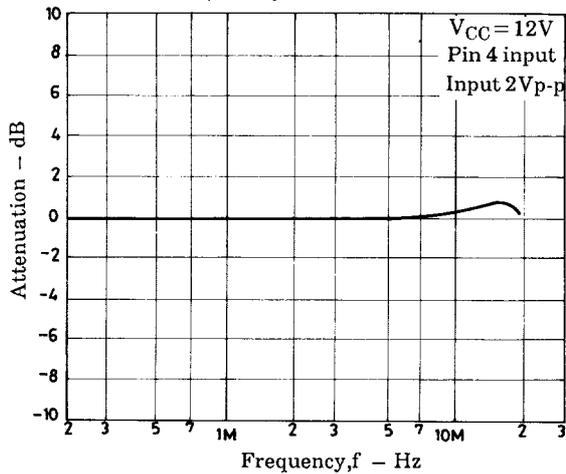
Input/Output Characteristic



CT - f



Frequency Characteristic



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