



SANYO Semiconductors

DATA SHEET

LA7956 — Monolithic Linear IC For TV/VCR Use Video Switch

Features

- 4 inputs, 1 output, 75Ω termination, driver on-chip.
- 6dB amplifier on-chip.
- Excellent crosstalk characteristic.
- Wide band.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_7 \text{ max}$		14	V
Maximum input supply voltage 1	$V_4 \text{ max}, V_6 \text{ max}$ $V_8 \text{ max}, V_9 \text{ max}$		8	V
Maximum input supply voltage 2	$V_2 \text{ max}, V_3 \text{ max}$	$V_{CC} = 14\text{V}$	14	V
Maximum output current	$I_1 \text{ max}$		10	mA
Allowable power dissipation	$P_d \text{ max}$	$T_a \leq 65^\circ\text{C}$	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	$V_{CC \text{ op}}$		10.5 to 13.5	V
Recommended supply voltage	V_{CC}		12	V

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51408 MS JK/O2500TN (KT)/O3095MH/3260TA, TS No.3353-1/4

LA7956

Electrical Characteristics at Ta = 25°C, VCC = 12V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current drain	I _{CC}		15	21	30	mA
Input bias voltage	V ₄ , V ₆ , V ₈ , V ₉		3.5	3.8	4.1	V
Output bias voltage	V ₁		4.6	6.1	7.6	V
Output DC offset voltage	V _{OS}	(Note 1)	-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 = 1MHz, V _{IN} = 2Vp-p (Note 1)	5.6	6.1	6.4	dB
Frequency characteristics	GV-f	0dB at f = 100kHz (Note 1) f = 10MHz, V _{IN} = 1Vp-p	-3	0		dB
Output dynamic range	V _{DR}	f = 15kHz, V _{IN} = 1.5Vp-p (Note 1)	1.4	1.5		Vp-p
Crosstalk (Note 2)	C _T	V _{IN} = 1Vp-p, f = 3MHz (Note 1)	50 (48)	58 (55)		dB
		V _{IN} = 1Vp-p, f = 5MHz (Note 1)	45 (45)	55 (52)		dB

The current flowing into the IC is defined as positive and current from the IC 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

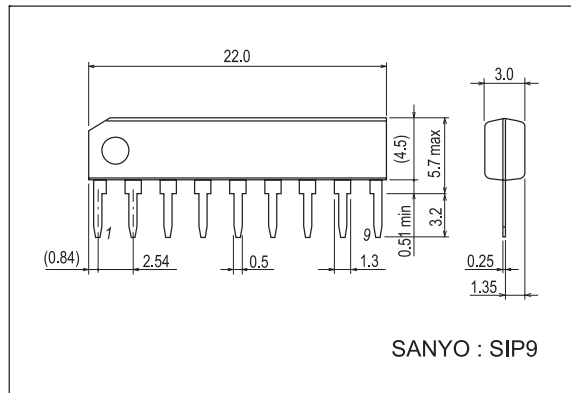
Note 1 : Refer to this Truth Table and make measurements by switching S2, S3.

Note 2 : () : Crosstalk between pins 8 and 9.

Package Dimensions

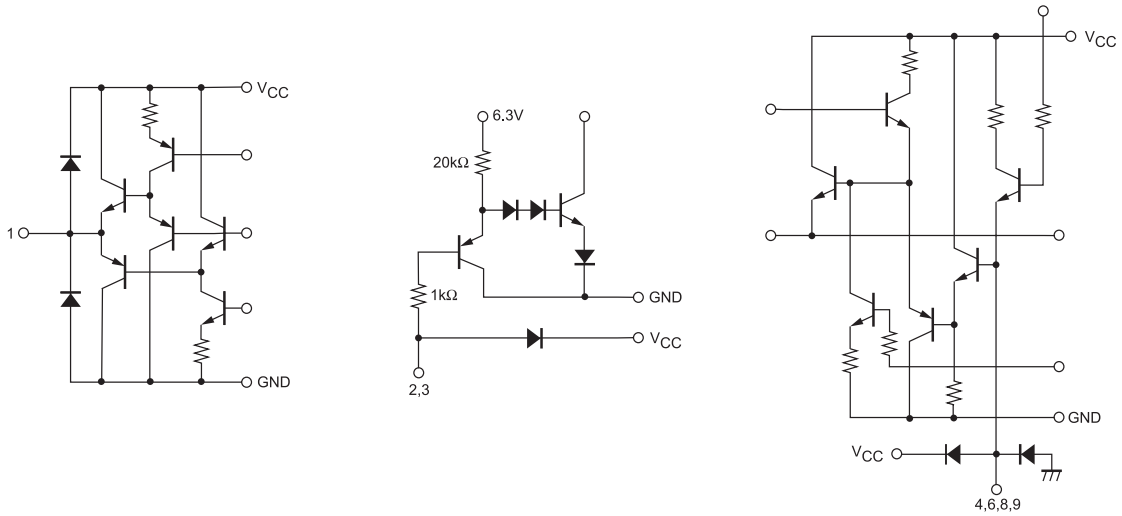
unit : mm (typ)

3017D

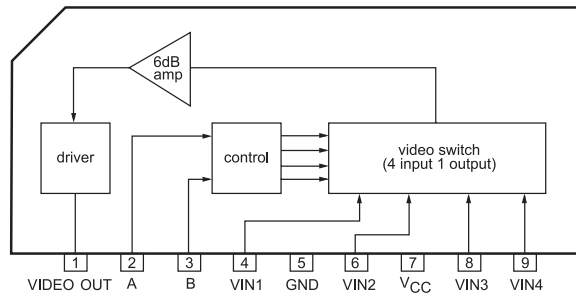


LA7956

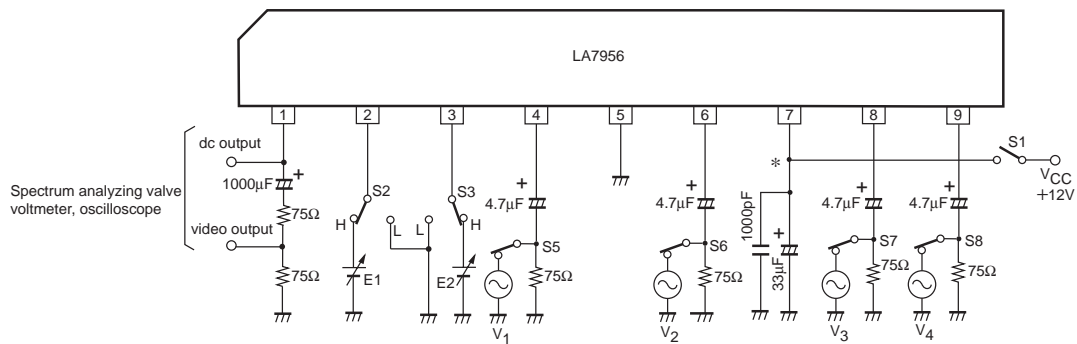
Input/ Output Equivalent Circuit



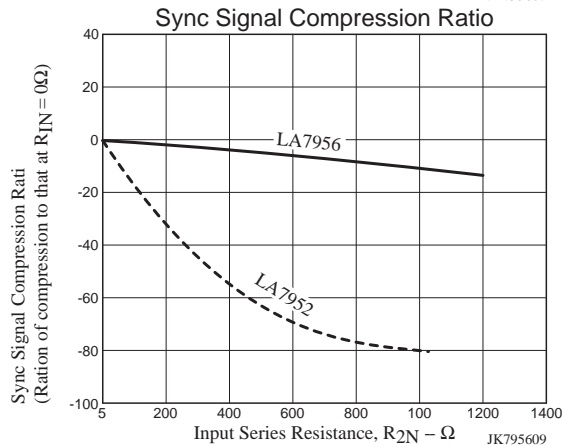
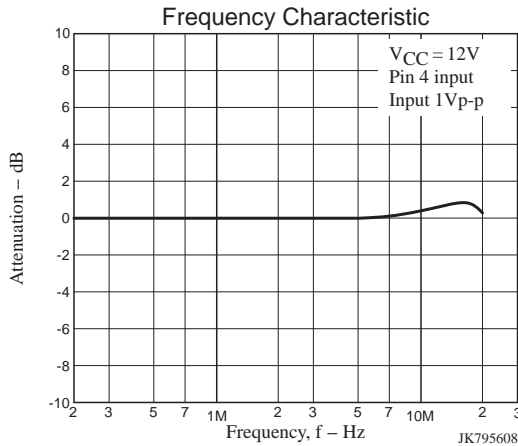
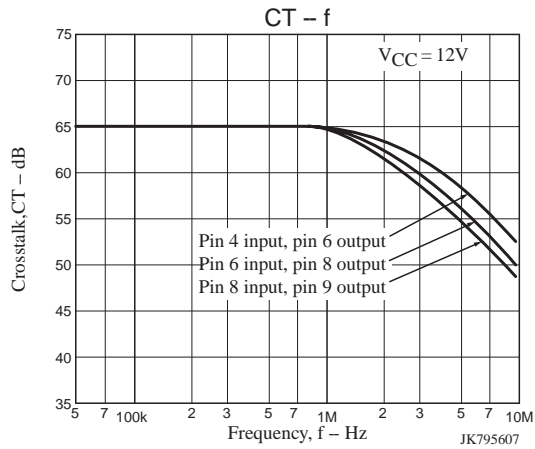
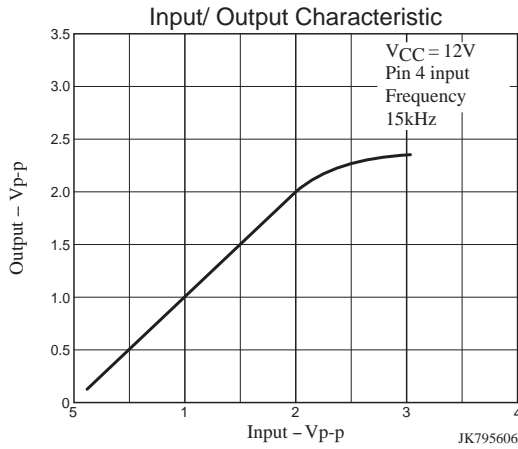
Block Diagram



Test Circuit



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



Design Notes

An improvement in the DC clamp circuit has improved the sync signal compression attributable to the signal source impedance, but the response time of the DC clamp is made longer accordingly than that of the LA7952. Make adjustments by connecting a high resistance (several hundred kΩ) across input pin and GND (decreasing the resistance makes the sync signal compression larger).

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