Structure : Silicon Monolithic Integrated Circuit

Product name : Triple Circuits Video Signal, Audio Signal Switchers

Type : BA7609F

Features :

1) Contain three 2-input, 1-output switch circuits
2) Power supply voltage (4.5～5.5 V)
3) Low power consumption
4) Good frequency characteristics
5) Large dynamic range
6) Bias input + sync-tip clamp input
7) Large input impedance (Typ.20kΩ)
8) Fast switching speed (Typ. 50ns)

○Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Supply voltage	Vcc	9	V
Power dissipation	Pd	500 *	mW
Operating temperature	Topr	-40～+85	℃
Storage temperature	Tstg	-55～+125	℃

* Deratings is done at 5.0mW/℃ above Ta=25℃.

○Operating Range (Ta=25℃)

Parameter	Symbol	Min	Typ	Max	Unit
Power supply voltage	Vcc	4.5	5.0	5.5	V

* This product is not designed for protection against radioactive rays.

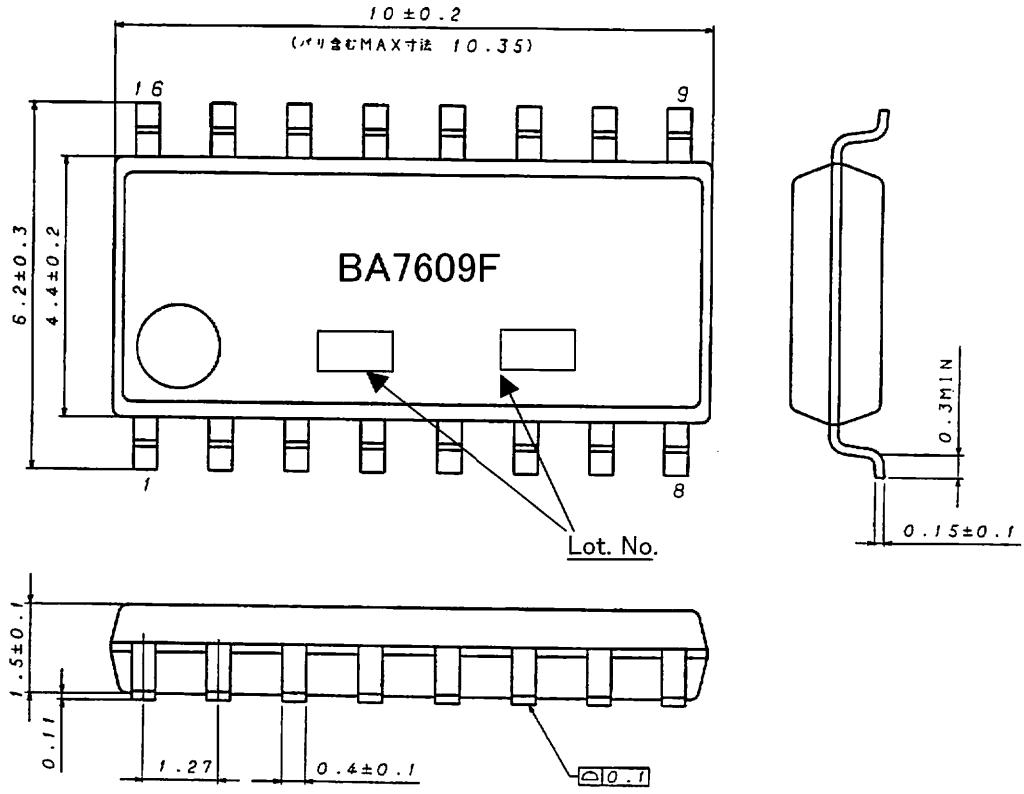
Application example

The product described in this specification is designed to be used with ordinary electronic equipment or devices (such as audio-visual equipment, office-automation equipment, communications devices, electrical appliances, and electronic toys). Should you intend to use this product with equipment or devices which require an extremely high level or reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices),please be sure to consult with our sales representative in advance.

○Electrical characteristics (Unless otherwise noted, Ta= 25℃, Vcc=5.0V)

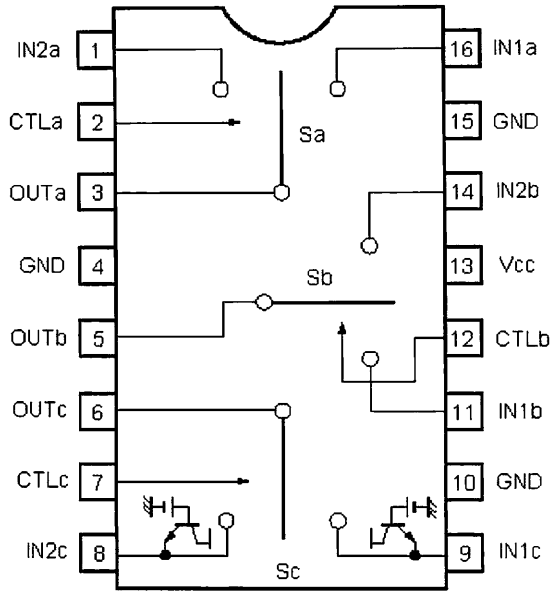
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current	Icc	-	12.5	20.0	mA	
Maximum output level1	Vom1	2.6	2.9	-	Vp-p	f=1kHz, THD=0.5% Clamp input
Maximum output level2	Vom2	2.7	3.0	-	Vp-p	f=1kHz, THD=0.5% Bias input
Voltage gain	Gv	-0.5	0	0.5	dB	f=1MHz, V_{IN}=1 V_{P-P}
Interchannel crosstalk	C_T	-	-65	-	dB	f=4.43MHz, V_{IN}=1 V_{P-P}
Frequency characteristic	Gf	-3	0	1	dB	10MHz/1MHz, V_{IN}=1 V_{P-P}
Input impedance	Zin	14	20	26	kΩ	Bias input
Total harmonic distortion	THD	-	0.007	-	%	f=1kHz, V_{IN}=1 V_{P-P} Bias input
CTL pin switching level	V_{TH}	2.0	2.5	3.0	V	

○Outer dimensions



SOP-16 (Unit: mm)

○Block diagram



Sa, Sb Bias input
Sc Sync-tip clamp input

○Pin number and pin name

Pin No.	Pin name
1	IN2a
2	CTLa
3	OUTa
4	GND
5	OUTb
6	OUTc
7	CTLc
8	IN2c
9	IN1c
10	GND
11	IN1b
12	CTLb
13	Vcc
14	IN2b
15	GND
16	IN1a

○Cautions on use

1) Absolute maximum ratings
If applied voltage, operating temperature range, or other absolute maximum ratings are exceeded, the LSI may be damaged. Do not apply voltages or temperatures that exceed the absolute maximum ratings. If you think of a case in which absolute maximum ratings are exceeded, enforce fuses or other physical safety measures and investigate how not to apply the conditions under which absolute maximum ratings are exceeded to the LSI.

2) GND potential
Make the GND pin voltage such that it is the lowest voltage even when operating below it. Actually confirm that the voltage of each pin does not become a lower voltage than the GND pin, including transient phenomena.

3) Thermal design
Perform thermal design in which there are adequate margins by taking into account the allowable power dissipation in actual states of use.

4) Shorts between pins and miss-installation
When mounting the LSI on a board, pay adequate attention to orientation and placement discrepancies of the LSI. If it is miss-installed and the power is turned on, the LSI may be damaged. It also may be damaged if it is shorted by a foreign substance coming between pins of the LSI or between a pin and a power supply or a pin and a GND.

5) Operation in strong magnetic fields
Adequately evaluate use in a strong magnetic field, since there is a possibility of malfunction.

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