

# AN5860, AN5860S

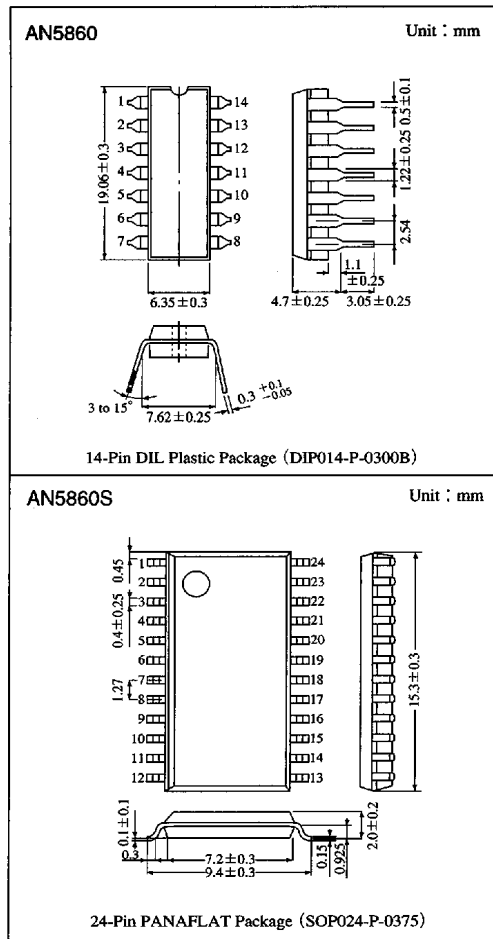
## Analog Switch ICs for RGB Interface

### Overview

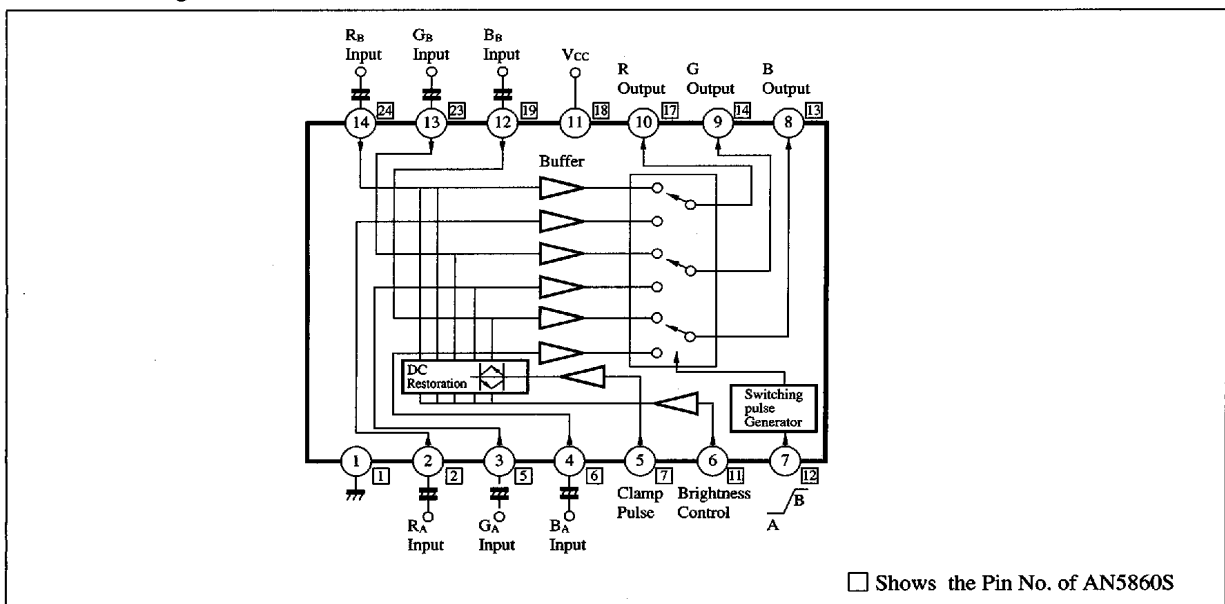
The AN5860 and the AN5860S are the integrated circuits designed for high-speed analog switch circuits for RGB signal processing.

### Features

- Wide band Characteristics ( $>20\text{MHz}$ )
- High speed switching characteristics ( $t_{dr}(\text{typ.})$ ,  $t_{df}(\text{typ.})$ ; 35ns)
- Brightness is DC-controlled



### Block Diagram



### Pin Descriptions

Pin No.	Pin name	Pin No.	Pin name
1(1)	GND	8(13)	B output
2(2)	R <sub>A</sub> input	9(14)	G output
3(5)	G <sub>A</sub> input	10(17)	R output
4(6)	B <sub>A</sub> input	11(18)	V <sub>CC</sub>
5(7)	Clamp pulse input	12(19)	B <sub>B</sub> input
6(11)	Brightness control	13(23)	G <sub>B</sub> input
7(12)	Switching pulse input	14(24)	R <sub>B</sub> input

Note : In case of AN5860S, Pin No. ③, ④, ⑧, ⑨, ⑩, ⑬, ⑯, ⑰, ⑱, ⑳, ㉑, ㉒, are NC

### Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Parameter		Symbol	Rating		Unit
Voltage	Supply voltage	V <sub>CC</sub>	13.8(13.0)		V
	Circuit current	V <sub>11-1</sub> (V <sub>18-1</sub> )	0	13.8(13.0)	V
		V <sub>2,3,4,12,13,14</sub> (V <sub>2,5,6,19,23,24</sub> )	0	V <sub>11-1</sub> (V <sub>18-1</sub> )	V
		V <sub>5-1</sub> (V <sub>7-1</sub> )	-1	6(V <sub>18-1</sub> )	V
		V <sub>6-1</sub> (V <sub>11-1</sub> )	3(0)	9	V
		V <sub>7-1</sub> (V <sub>12-1</sub> )	0	6(V <sub>18-1</sub> )	V
Circuit voltage	I <sub>8,9,10</sub> (I <sub>13,14,17</sub> )	-10	2	mA	
Power dissipation (T <sub>a</sub> = 70°C)		P <sub>D</sub>	AN5860	560	mW
			AN5860S	490	
Temperature	Operating ambient temperature	T <sub>opr</sub>	-20 to +70		°C
	Storage temperature	T <sub>stg</sub>	AN5860	-55 to +150	°C
			AN5860S	-55 to +125	

( ) shows the Pin No. of AN5860S

### Electrical Characteristics (T<sub>a</sub> = 25°C)

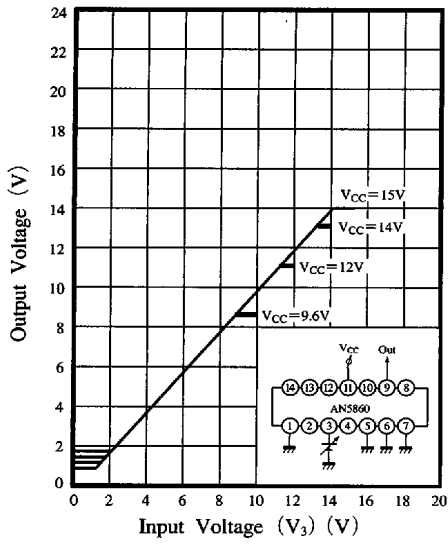
Parameter	Symbol	Condition	min	typ	max	Unit
Operating supply voltage range	V <sub>CC(opr.)</sub>		9.6	12.0	13.8	V
Total circuit current	I <sub>tot</sub>	V <sub>CC</sub> = 12V, V <sub>5</sub> : input pulse 1V <sub>P-P</sub>	19	26.5	34	mA
DC voltage difference between outputs	ΔV <sub>RGB</sub>	V <sub>CC</sub> = 12V, V <sub>7</sub> = 1V, 0V	—	0	±100	mV
Switching output DC voltage difference	ΔV <sub>A-B</sub>	V <sub>CC</sub> = 12V, V <sub>7</sub> = 1V, 0V	—	0	±30	mV
Input/Output dynamic range for signals (upper)	D.R. <sub>max</sub>	V <sub>CC</sub> = 12V	—	—	10.5	V
Input/Output dynamic range for signals (lower)	D.R. <sub>min</sub>	V <sub>CC</sub> = 12V	1.7	—	—	V
Output terminal sink current	I <sub>SINC</sub>	V <sub>CC</sub> = 12V, input voltage 6V	—	—	0.8	mA
Voltage amplification for signals	A <sub>v</sub>	f <sub>in</sub> = 1MHz, 1V <sub>P-P</sub>	0.9	1	1.1	times
Frequency characteristics for signals	f <sub>3dB</sub>	e <sub>in</sub> = 1V <sub>P-P</sub>	20	—	—	MHz
DC level difference of pedestal level for signals	ΔE <sub>TO</sub>	Input pulse 1V <sub>P-P</sub> , V <sub>6</sub> : 7V	—	0	±100	mV
Switching crosstalk	CT <sub>A/B</sub>	f <sub>in</sub> = 1MHz, 1V <sub>P-P</sub>	—	—	-40	dB
Signal rise time	t <sub>r</sub>	f <sub>in</sub> = 1MHz, 1V <sub>P-P</sub>	—	20	40	ns
Signal fall time	t <sub>f</sub>	f <sub>in</sub> = 1MHz, 1V <sub>P-P</sub>	—	20	40	ns
Signal rise delay time	t <sub>dr</sub>	f <sub>in</sub> = 1MHz, 1V <sub>P-P</sub>	—	10	30	ns
Signal fall delay time	t <sub>df</sub>	f <sub>in</sub> = 1MHz, 1V <sub>P-P</sub>	—	10	30	ns
Switching delay time	t <sub>dr(A/B)</sub>	Switching pulse 1V <sub>P-P</sub>	—	35	60	ns
	t <sub>df(A/B)</sub>	Switching pulse 1V <sub>P-P</sub>	—	35	60	ns
Switching pulse standard input	V <sub>SWP</sub>	V <sub>CC</sub> = 12V	—	1	—	V <sub>O-P</sub>
Clamp pulse standard input	V <sub>CLP</sub>	V <sub>CC</sub> = 12V	—	2	—	V <sub>O-P</sub>

Panasonic

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Input/Output Characteristics



Brightness Control Characteristics

