

AN5860, AN5860S

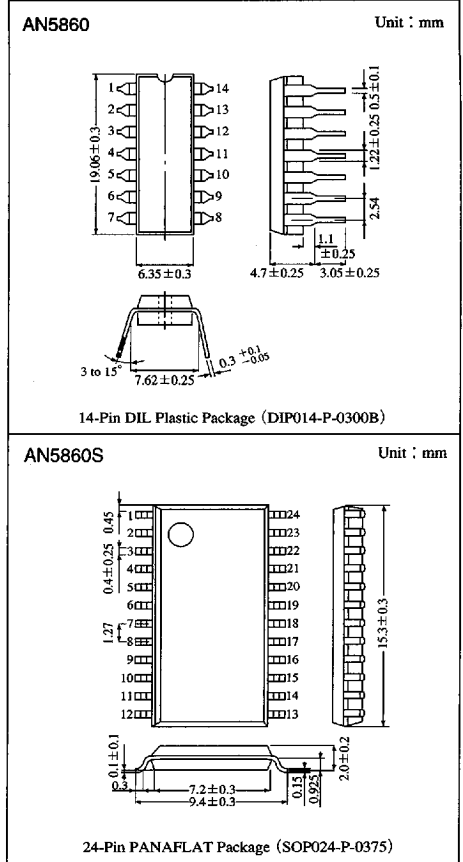
Analog Switch ICs for RGB Interface

Overview

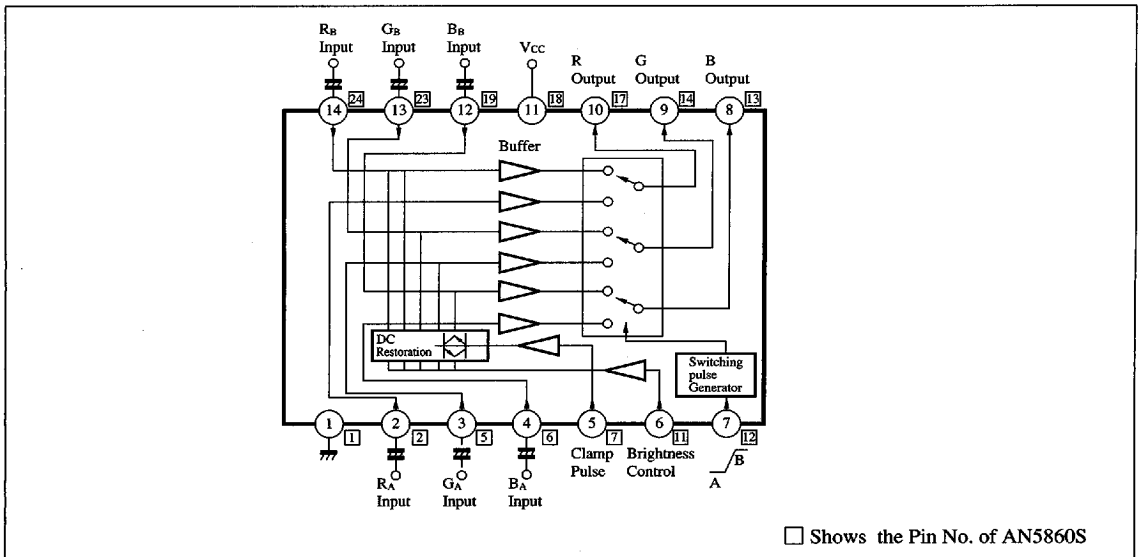
The AN5860 and the AN5860S are the integrated circuits designed for high-speed analog switch circuits for RGB signal processing.

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 _A input	9(14)	G output
3(5)	G _A input	10(17)	R output
4(6)	B _A input	11(18)	V _{CC}
5(7)	Clamp pulse input	12(19)	B _B input
6(11)	Brightness control	13(23)	G _B input
7(12)	Switching pulse input	14(24)	R _B input

Note : In case of AN5860S, Pin No. ③, ④, ⑧, ⑨, ⑩, ⑪, ⑫, ⑬, ⑭, ⑮, ⑯, ⑰, ⑱, ⑲, ⑳, are NC

■ Absolute Maximum Ratings (Ta = 25°C)

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

() shows the Pin No. of AN5860S

■ Electrical Characteristics (Ta = 25°C)

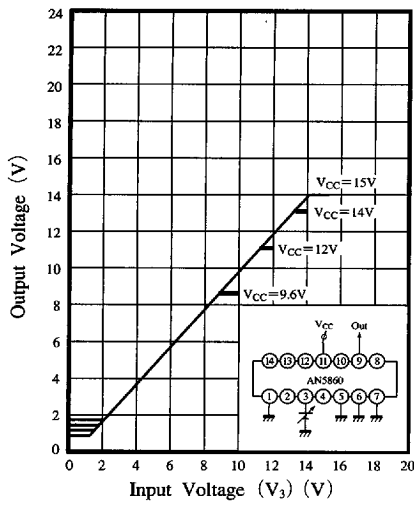
Parameter	Symbol	Condition	min	typ	max	Unit
Operating supply voltage range	V _{CC(opr.)}		9.6	12.0	13.8	V
Total circuit current	I _{tot}	V _{CC} = 12V, V ₅ : input pulse 1V _{P-P}	19	26.5	34	mA
DC voltage difference between outputs	ΔV _{RGB}	V _{CC} = 12V, V ₇ = 1V, 0V	—	0	±100	mV
Switching output DC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

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355

Input/Output Characteristics



Brightness Control Characteristics

