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AN5860, AN5860S
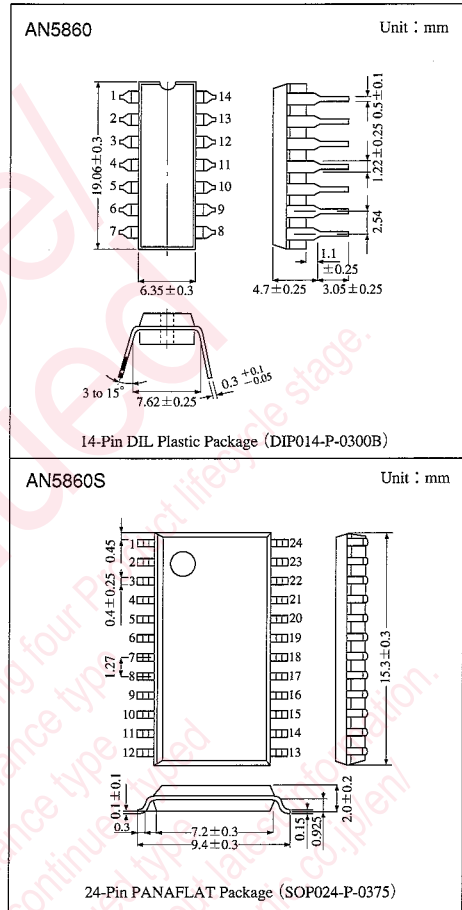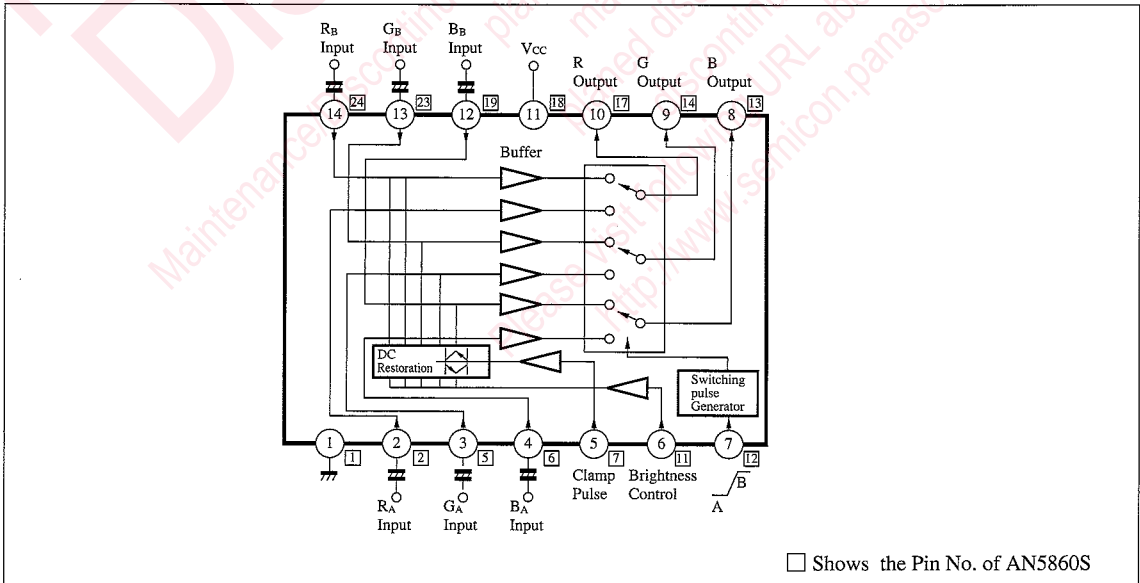
Analog Switch ICs for RGB Interface

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

AN5860   Unit : mm

14-Pin DIL Plastic Package (DIP014-P-0300B)

AN5860S   Unit : mm

24-Pin PANAFLAT Package (SOP024-P-0375)

■ Block Diagram

□ Shows the Pin No. of AN5860S

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■ 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, ⑮, ⑯, ⑳, ㉑, ㉒, are NC

■ Absolute Maximum Ratings (Ta＝25℃)

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
		$V_{2,3,4,12,13,14-1}$ $(V_{2,5,6,19,23,24-1})$	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℃)	AN5860	P_D	560		mW
	AN5860S		490		
Temperature	Operating ambient temperature	T_{opr}	−20 to +70		℃
	Storage temperature	AN5860	T_{stg}	−55 to +150	℃
		AN5860S		−55 to +125	

( ) shows the Pin No. of AN5860S

■ Electrical Characteristics (Ta＝25℃)

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}

Input/Output Characteristics
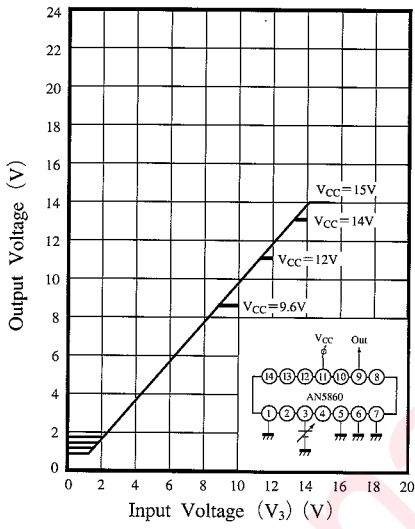
Brightness Control Characteristics
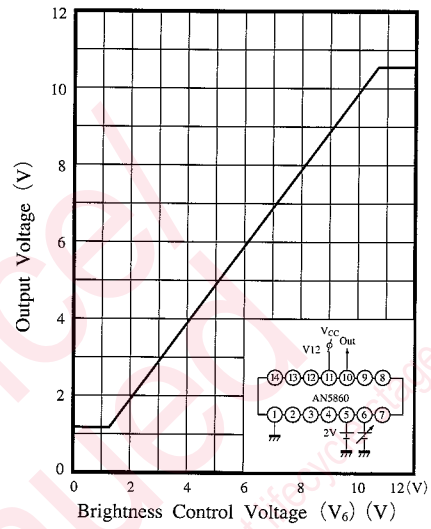
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