AN5860, AN5860S

Analog Switch ICs for RGB Interface

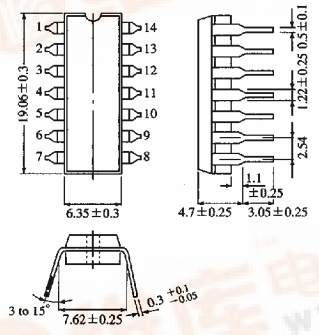
■ Overview

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

■ Features

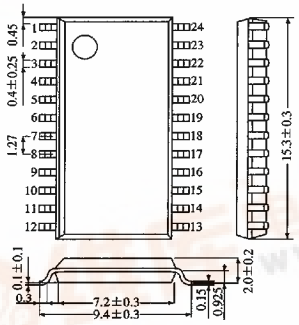
- Wide band Characteristics (>20MHz)
- High speed switching characteristics ($t_{dr\ (typ.)}$, $t_{df\ (typ.)}$; 35ns)
- Brightness is DC-controlled

AN5860 Unit : mm



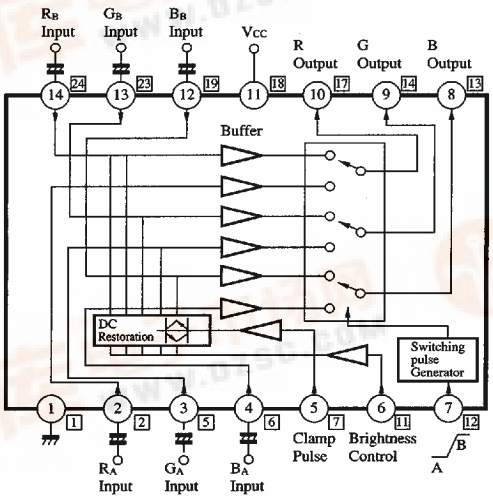
14-Pin DIL Plastic Package (DIP014-P-0300B)

AN5860S Unit : mm



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

■ Block Diagram



☐ Shows the Pin No. of AN5860S

■ 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℃)

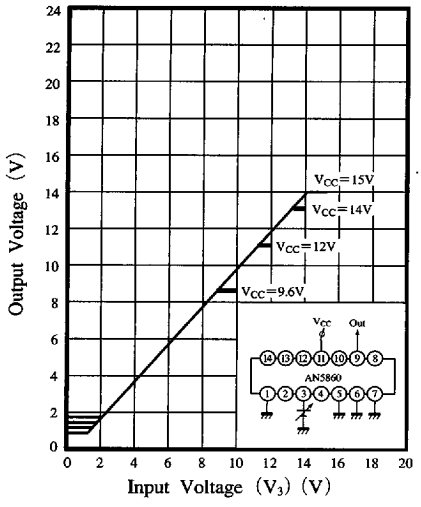
Parameter		Symbol		Rating		Unit
Voltage	Supply voltage	V_{CC}		13.8(13.0)		V
	Circuit current	$V_{11\text{-}1}$ ($V_{18\text{-}1}$)		0	13.8(13.0)	V
		$V_{2,3,4,12,13,14\text{-}1}$ ($V_{2,5,6,19,23,24\text{-}1}$)		0	$V_{11\text{-}1}$ ($V_{18\text{-}1}$)	V
		$V_{5\text{-}1}$ ($V_{7\text{-}1}$)		−1	6($V_{18\text{-}1}$)	V
		$V_{6\text{-}1}$ ($V_{11\text{-}1}$)		3(0)	9	V
		$V_{7\text{-}1}$ ($V_{12\text{-}1}$)		0	6($V_{18\text{-}1}$)	V
Circuit voltage		$I_{8,9,10}$ ($I_{13,14,17}$)		−10	2	mA
Power dissipation (Ta=70℃)		P_D	AN5860	560		mW
			AN5860S	490		
Temperature	Operating ambient temperature	T_{opr}		−20 to +70		℃
	Storage temperature	T_{stg}	AN5860	−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 $1V_{P\text{-}P}$	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	$\Delta V_{A\text{-}B}$	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, $1V_{P\text{-}P}$	0.9	1	1.1	times
Frequency characteristics for signals	f_{-3dB}	e_{in}=$1V_{P\text{-}P}$	20	—	—	MHz
DC level difference of pedestal level for signals	ΔE_{TO}	Input pulse $1V_{P\text{-}P}$, V_6 : 7V	—	0	±100	mV
Switching crosstalk	$CT_{A/B}$	f_{in}=1MHz, $1V_{P\text{-}P}$	—	—	−40	dB
Signal rise time	t_r	f_{in}=1MHz, $1V_{P\text{-}P}$	—	20	40	ns
Signal fall time	t_f	f_{in}=1MHz, $1V_{P\text{-}P}$	—	20	40	ns
Signal rise delay time	t_{dr}	f_{in}=1MHz, $1V_{P\text{-}P}$	—	10	30	ns
Signal fall delay time	t_{df}	f_{in}=1MHz, $1V_{P\text{-}P}$	—	10	30	ns
Switching delay time	$t_{dr(A/B)}$	Switching pulse $1V_{P\text{-}P}$	—	35	60	ns
	$t_{df(A/B)}$	Switching pulse $1V_{P\text{-}P}$	—	35	60	ns
Switching pulse standard input	V_{SWP}	V_{CC}=12V	—	1	—	$V_{O\text{-}P}$
Clamp pulse standard input	V_{CLP}	V_{CC}=12V	—	2	—	$V_{O\text{-}P}$

Input/Output Characteristics



Brightness Control Characteristics