

ICs for TV

AN5560

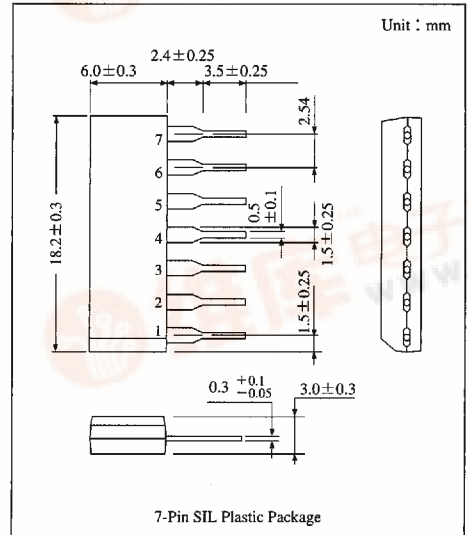
50Hz and 60Hz Detection IC for TV

Overview

The AN5560 is an integrated circuit designed for TV-vertical synchronous signal 50Hz/60Hz-detector.

Features

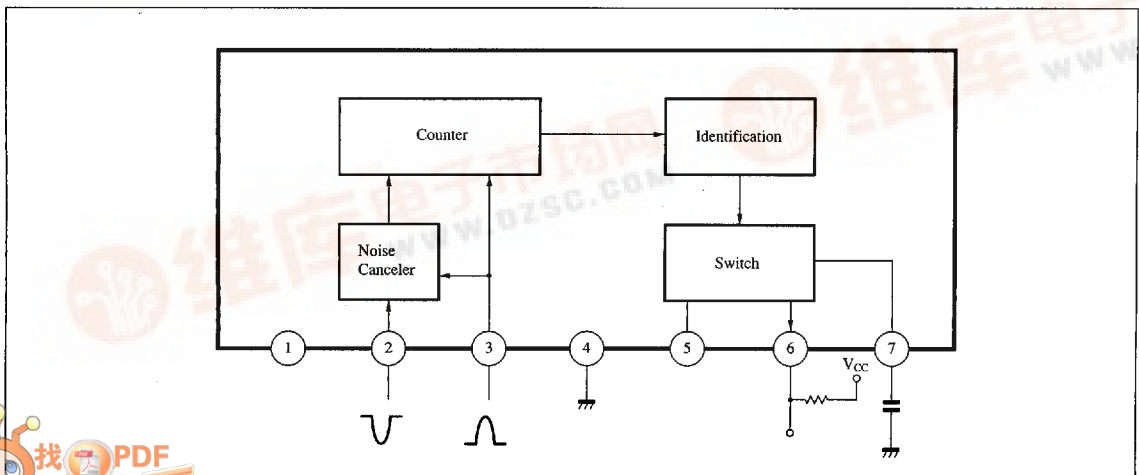
- AN5560 detects whether vertical synchronous signal-identification-frequency is 50Hz or 60Hz by taking in horizontal and vertical synchronous signals
- Detected frequency is indicated by high-, and low-DC voltage
- It is possible to change the identified output-DC levels by manual switch.



Pin Descriptions

Pin No.	Pin name
1	V _{CC}
2	Vertical pulse input
3	Horizontal pulse input
4	GND
5	Manual switch
6	50/60Hz identified output
7	Output hold



Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating		Unit
Supply voltage	V _{CC}	14.4		V
Circuit voltage	V ₂₋₄	0	V ₁₋₄ +0.4	V
	V _{3,5-4}	0	V ₁₋₄	V
	V ₆₋₄	0	24	V
Circuit current	I ₂	-0.8	5	mA
	I ₆	—	20	mA
Power dissipation (Ta=70°C)	P _D	695		mW
Operating ambient temperature	T _{opr}	-20 to +70		°C
Storage temperature	T _{stg}	-55 to +150		°C

■ Electrical Characteristics (V_{CC}=12V, Ta=25°C)

Parameter	Symbol	Condition	min	typ	max	Unit
Total current	I _{tot}		7.5	10.0	12.5	mA
50/60 identified output auto50	V _{Auto50}	V _{CC} =12V, f=50Hz, Pin⑤=Open	11.9	—	12.0	V
50/60 identified output auto60	V _{Auto60}	V _{CC} =12V, f=60Hz, Pin⑤=Open	—	—	0.3	V
50/60 identified output manual50	V _{manual50}	V _{CC} =12V, Pin⑤=GND	11.9	—	12.0	V
50/60 identified output manual60	V _{manual60}	V _{CC} =12V, Pin⑤=R10kΩ	—	—	0.3	V
Horizontal frequency input range	f _H		15.6	—	16.0	kHz
Vertical frequency input range 50Hz	f _{V50}		f _H /346	f _H /312	f _H /284	Hz
Vertical frequency input range 60Hz	f _{V60}		f _H /282	f _H /260	f _H /243	Hz
Horizontal pulse input level	v _{PH}	 v _{PH} Pin③ Open	2	—	5	V
Vertical pulse input level	v _{PV}	 v _{PV}	0	—	V _{CC} -3.0	V
Horizontal pulse width	t _{w(PH)}		4	—	12	μs
Vertical pulse width	t _{w(PV)}		150	—	500	μs

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Note) Operating supply voltage range : V_{CC(opr)} = 9.6 to 14.4V

■ Application Circuit

