

AN7464S

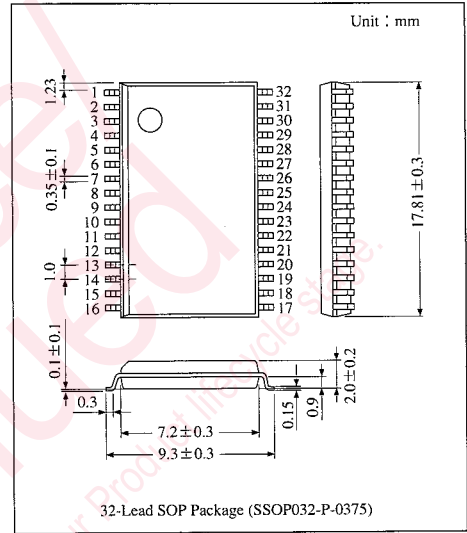
FM Noise Canceller/Stereo Multiplex Demodulator for Car Radio

Overview

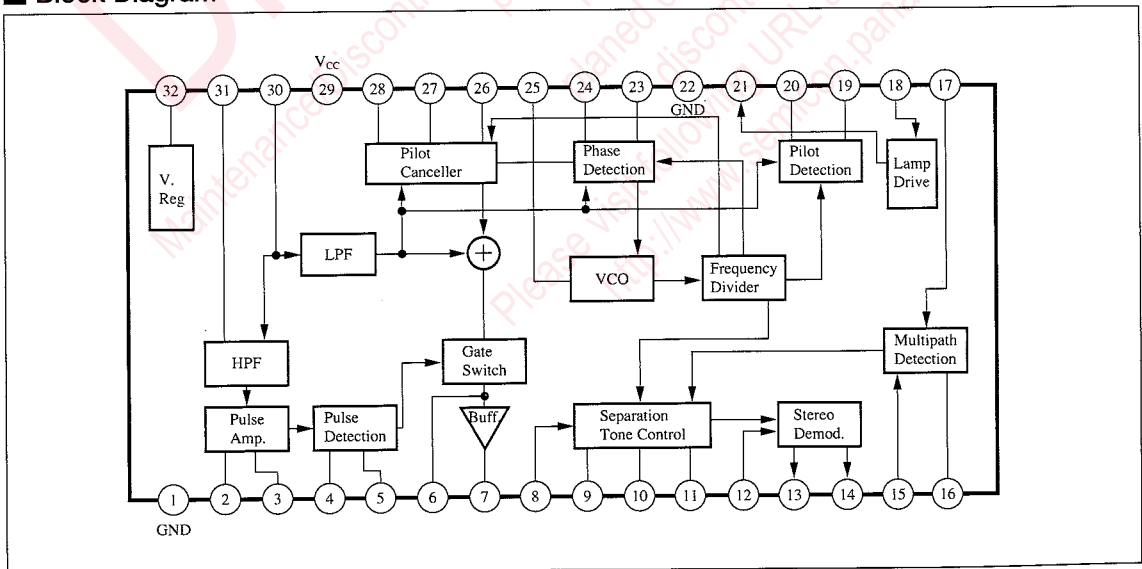
The AN7464S is an automotive use integrated circuit configured FM noise canceller and PLL multiplex demodulation circuit into a single chip.

Features

- HPF/LPF of noise canceller input section built-in.
- Good S/N and distortion due to use of quasi sine wave as pilot canceller negative wave.
- HPF band auto switching by monaural and stereo.
- With ASC/ATC functions reducing noise at weak electric field smoothly.
- With forced monaural and VCO stop.
- Multipath detection and measure circuit built-in.



Block Diagram



■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{CC}	10	V
Supply Current	Without lamp current	I _{CC(1)}	25
	With lamp current	I _{CC(2)}	30
Power Dissipation	P _D	280	mW
Operating Ambient Temperature	T _{opr}	-30 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +125	°C

■ Recommended Operating Range (Ta = 25°C)

Parameter	Symbol	Range
Operating Supply Voltage Range	V _{CC}	6V ~ 10V

■ Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Total Circuit Current	I _{tot}	V _{in} = 0mVrms	11	16	21	mA
AGC Voltage (1)	V _{AGC1}	V _{in} = 0mVrms, RS = 10kΩ	—	0.05	0.4	V
AGC Voltage (2)	V _{AGC2}	V _{in} = 2mVrms, f = 152kHz	1	1.3	1.5	V
Noise Detection Voltage	V _{Det.}	V _i = 100mVrms, f = 152kHz	—	0.05	0.3	V
Gate Pulse Width	PW	V _{in} = 0.3V _{P-P} pulse, t _w = 1μs, f = 1kHz	20	25	30	μs
Residual Noise Voltage	V _{NR}	Pass V _{in} = 1V _{P-P} *, t _w = 10μs, f = 1kHz pulse LPF	—	0.3	0.7	mVrms
Output Voltage	V _O	V _{in} = 300mVrms, f = 1kHz	245	285	325	mVrms
Channel Balance	CB	V _i = 300mVrms, f = 1kHz	—	0	1	dB
Separation (1) (R ^⑨ -- 820Ω fixed)	Sep. ₁	V _{L+R} = 270mV, V _P = 30mV, f = 1kHz	22	32	—	dB
Separation (2) (at R ^⑨ adjustment)	Sep. ₂	At V _{L+R} = 270mV, V _P = 3mV, f = 1kHz adjustment	—	43	—	dB
THD (L+R)	THD	V _{L+R} = 270mV, V _P = 30mV, f = 1kHz	—	0.05	0.3	%
THD (Monaural)	THD	V _i = 300mV, f = 1kHz	—	0.05	0.3	%
Residual Pilot Voltage	V _{PC}	V _P = 30mV	—	2.5	10	mVrms
Lamp ON Pilot Voltage	V _{P(ON)}	Input only pilot signal	11	16	21	mVrms
Lamp OFF Pilot Voltage	V _{P(OFF)}	Input only pilot signal	—	8	—	mVrms
Capture Range	CR	V _P = 30mV	±1.8	±3	—	%
VCO Stop Voltage	V ₁₈	Pin ^⑱ VCO stop voltage	3	3.4	3.8	V
Input Impedance	Z _{in}	Pin ^⑳ Input impedance	—	53	—	kΩ
Output Impedance	Z _o	Pin ^⑬ , ^⑭ Output impedance	—	3.3	—	kΩ

* Input through LPF of R = 150Ω, C = 0.033μF.

Pin Descriptions

Almost pin is equal to the AN7465K/S in regard to the AN7464S pin function and internal equivalent circuit. The following is about equivalence and different function pin with the AN7465K/S. Refer to the AN7465K/S pin description in regard to Pin except Pin ① ⑬ ⑯ ⑰.

(1) The same function pin as AN7465K/S

AN7464S Pin	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑯	⑰
AN7465K/S Pin	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮

AN7464S Pin	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜
AN7465K/S Pin	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘

(2) AN7464S typical pin

Pin No.	Pin Name	Pin Waveform, Voltage	Input/Output Impedance	Equivalent Circuit
15	AMDC IN	DC about 2V	Low	
16	AMDC Peak Det.	 Normal Multipath Input	Rise Low Fall 50k Ω	
17	AMDC Adj.	DC less than about 2.3V	25k Ω	
1	GND	—	Low	

Note) AMDC Automatic Multi-Path Distortion Control

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