

AN7017S, AN7017SB

FM/TV Front-end ICs for 1.5V Headphone Stereo, Radio Cassette Recorder

■ Overview

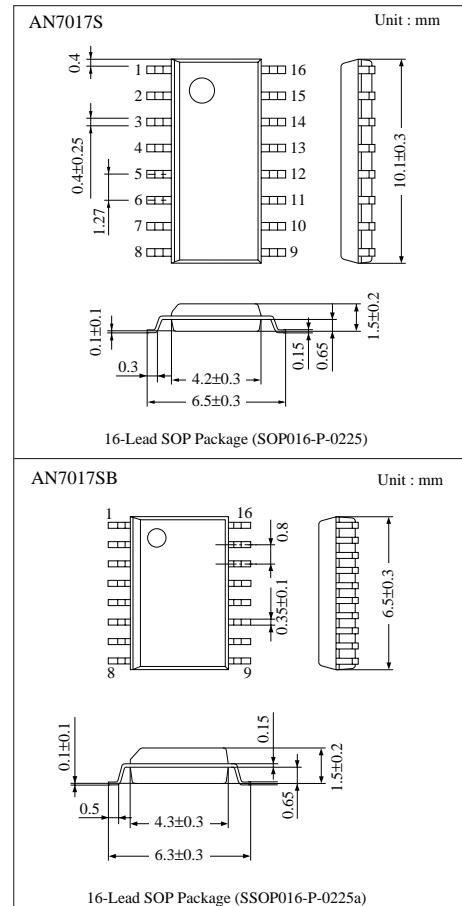
The AN7017S and the AN7017SB are the ICs incorporating FM/TV front-end most suitable for headphone stereo.

Sealed in a 16-pin flat package, the chip operates stably at TV band (170MHz ~ 222MHz) FM band (76MHz ~ 108MHz).

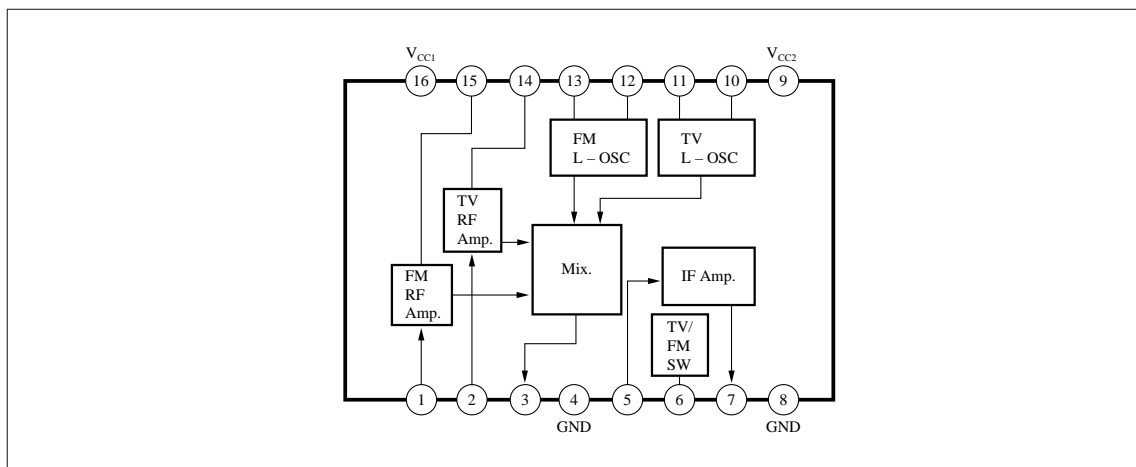
RF amplifiers and oscillations are provided in FM/TV band individually, and are designed most suitably. So both characteristics of FM/TV band are satisfied.

■ Features

- Low current consumption
- Band switching circuit built-in
- A single chip integrating FM/TV band
- IF amp. built-in



■ Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{CC}	2.5	V
Supply Current	I _{CC}	10	mA
Power Dissipation	P _D	30	mW
Operating Ambient Temperature	T _{opr}	-22 ~ + 75	°C
Storage Temperature	T _{stg}	-55 ~ + 125	°C

■ Recommended Operating Range (Ta=25°C)

Parameter	Symbol	Range
Operating Supply Voltage Range	V _{CC}	1V ~ 2V

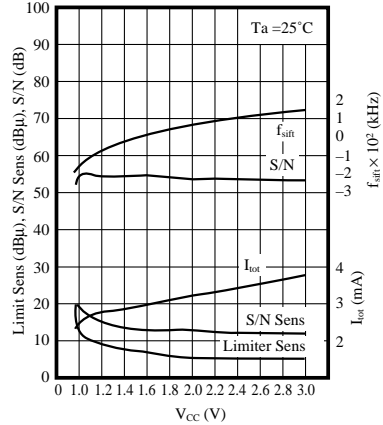
■ Electrical Characteristics (V_{CC}=1.2V, Ta = 25°C)

Parameter		Symbol	Condition	min.	typ.	max.	Unit
FM	No Signal Current	I _{tot} (FM)	Note) V _{CC} =1V V _{in} = 60dBμ	—	2.5	—	mA
	Conversion Gain	G _{conv} (FM)		—	31	—	dB
	Oscillation Voltage	V _{osc} (FM)		—	73	—	mV
	S/N	S/N (FM)		—	55	—	dB
TV	No Signal Current	I _{tot} (TV)	Note) V _{CC} =1V V _{in} =60dBμ	—	3.2	—	mA
	Conversion Gain	G _{conv} (TV)		—	27	—	dB
	Oscillation Voltage	V _{osc} (TV)		—	57	—	mV
	S/N	S/N (TV)		—	53	—	dB

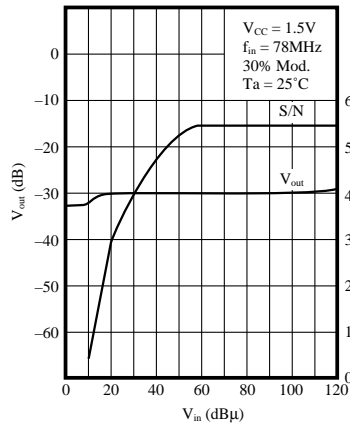
Note) Conversion Gain= 20log (ΔV_(μV) ÷ 100)
 ΔV is output difference at 40dBμ and 46dBμ.

■ Characteristics Curve

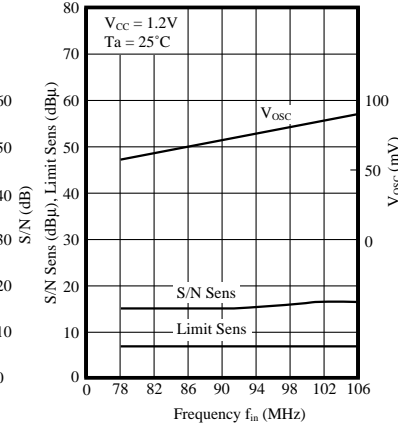
Supply Voltage Characteristics (FM)–
 Oscillation Frequency Deviation
 S/N, S/N Sensitivity, Limiter Sensitivity, I_{tot}



Input/Output Characteristics –
 S/N, V_{out}



Frequency Characteristics (FM) –V_{osc}, S/N Sensitivity,
 Limiter Sensitivity



■ Pin Descriptions

Pin No.	Pin Name	Typ.Waveform	Description	Equivalent Circuit
1	FM RF Input	FM signal	FM RF input pin	
15	FM RF Output	FM signal	FM RF output pin	
4	GND	DC 0V	GND pin Used for RF amp. /Mixer.	—
3	Mix. Output	10.7MHz IF signal	Mix. output pin Ceramic Filter connect to output.	
5	IF Input	10.7MHz IF signal	IF input pin	
6	TV/FM switch	—	TV/FM switching At FM, stop the current source of TV circuit by connecting Pin6 to V _{CC} , and at TV, stop the current source of FM circuit by opening this.	
7	IF Output	10.7MHz IF signal	IF output pin	
8	GND	—	GND pin Used for IF amp. /oscillation circuit current source	—

■ Pin Descriptions (Cont.)

Pin No.	Pin Name	Typ.Waveform	Description	Equivalent Circuit
9	V _{CC2}	DC 1.5V	Supply voltage pin Used for IF amp. /oscillation circuit current source	—————
10 · 11	TV OSC	160MHz ~ 216MHz oscillation	TV OSC pin	
12 · 13	FM OSC	65MHz ~ 96MHz oscillation	FM OSC pin	
2	TV RF Input	TV signal	TV RF input pin	
14	TV RF Output	TV signal	TV RF output pin	
16	V _{CC1}	DC 1.5V	Supply voltage pin Used for RF amp., mixer	—————



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