AN7261FBQ

FM multiplex reception IC

■ Overview

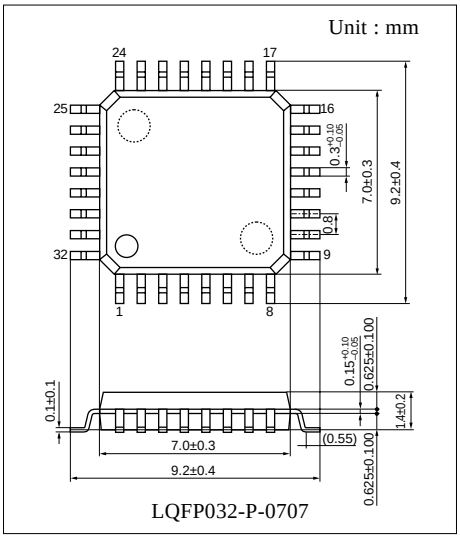
The AN7261FBQ is an FM-multiplex reception IC including a front-end and an IF block for FM tuner. Since the receiving circuit of FM multiplex signal is integrated on a single chip, it is most suitable for saving the space of sets.

■ Features

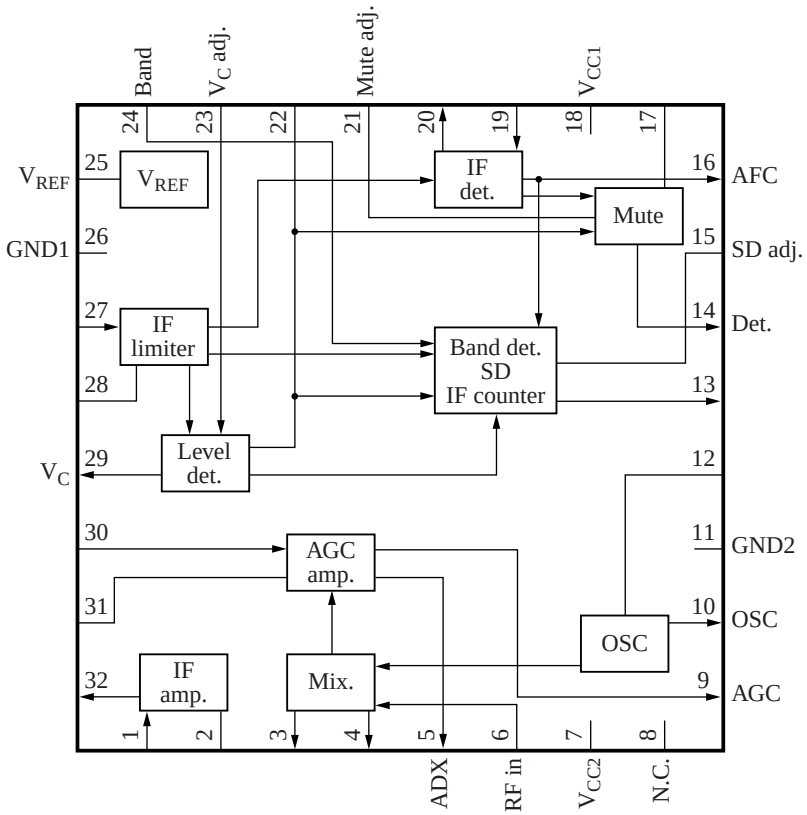
- A single chip IC for an FM-multiplex tuner block, which was conventionally composed of two ICs.
- Fewer external components
- Can be used for 15 MHz IF

■ Applications

- VICS, RDS



■ Block Diagram



■ Pin Descriptions

Pin No.	Description	Pin No.	Description
1	1st IF input	17	Higher freguency correction adjustment
2	GND for 1st IF input	18	V_{CC1}
3	Mixer output 1	19	FM detection
4	Mixer output 2	20	2nd IF output
5	PIN diode driver	21	Mute adjustment
6	Mix. Input	22	Mute voltage output
7	V_{CC2}	23	Control voltage adjustment
8	N.C.	24	Band mute SW/band signal output
9	AGC output	25	V_{REF}
10	OSC buffer output	26	GND1
11	GND2	27	2nd IF input
12	OSC	28	GND for 2nd IF input
13	SD/IF counter output	29	Control voltage output
14	Detection output	30	Keyed-AGC input
15	SD sensitivity adjustment	31	AGC sensitivity adjustment
16	AFC voltage output	32	1st IF output

■ Absolute Maximum Ratings

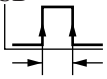
Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	9.1	V
Supply current	I_{CC}	66	mA
Power dissipation *2	P_D	343.6	mW
Operating ambient temperature *1	T_{opr}	−30 to +80	°C
Storage temperature *1	T_{stg}	−55 to +150	°C

Note) ∗1: T_a = 25°C except power dissipation, operating ambient temperature and storage temperature.
∗2: T_a = 80°C

■ Recommended Operating Range

Parameter	Symbol	Range	Unit
Supply voltage	V_{CC}	7.2 to 9.0	V

■ Electrical Characteristics at V_{CC} = 8 V, f_{IN1} = 98 MHz, f_{IN2} = 15 MHz, T_a = 25°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Control voltage 1	V_{C1}	No signal input, DC voltage of pin 29	0.0	0.05	0.8	V
Control voltage 2	V_{C2}	V_{IN2} = 60 dBμ, DC voltage of pin 29	0.7	1.25	1.8	V
Control voltage 3	V_{C3}	V_{IN2} = 80 dBμ, DC voltage of pin 29	1.8	2.4	3.0	V
Control voltage 4	V_{C4}	V_{IN2} = 100 dBμ, DC voltage of pin 29	3.0	3.7	4.4	V
Control voltage 5	V_{C5}	$V_{C5} = V_{C3} - V_{C2}$	1.0	1.2	1.4	V
Control voltage 6	V_{C6}	$V_{C6} = V_{C4} - V_{C3}$	1.05	1.25	1.45	V
Detection output level 1	V_{O1}	V_{IN2} = 80 dBμ/1 kHz, 30%FM, AC voltage of pin 14	70	90	110	mV[rms]
Detection output level 2	V_{O2}	V_{IN2} = 80 dBμ/76 kHz, 10%FM, AC voltage of pin 14	37	47	57	mV[rms]
Counter output level	V_{IFC}	V_{IN2} = 100 dBμ, V_{15} = 2 V, IFC output level	150	180	210	mV[rms]
SD sensitivity	SD_S	V_{IN2} when V_{15} = 2 V, SD > 4 V	61	71	81	dBμ
SD bandwidth	SD_W	Bandwidth when SD > 4 V, V_{IN2} = 100 dBμ 	90	115	140	kHz
Limiting sensitivity	V_{LIM}	V_{IN2} level, 30 kHz LPF on, and 1 kHz 30% FM when pin 14 AC voltage drops by 3 dB	40	48	54	dBμ
Local oscillation buffer output	V_{OS}	f_{OSC} = 113 MHz, without input	110	160	210	mV[rms]
IF output level	V_{IF}	V_{IN1} = 80 dBμ, IF out level	60	110	170	mV[rms]
AGC sensitivity	S_{AGC}	V_{IN1} level when V_9 = 3 V	68	72	76	dBμ
High-level AGC voltage	V_{AH}	V_{IN1} = 66 dBμ, V_9	5.9	6.3	6.7	V
Low-level AGC voltage	V_{AL}	V_{IN1} = 78 dBμ, V_9	—	0.05	0.5	V
Supply current	I_{TOT}	Without input	41	52	65	mA

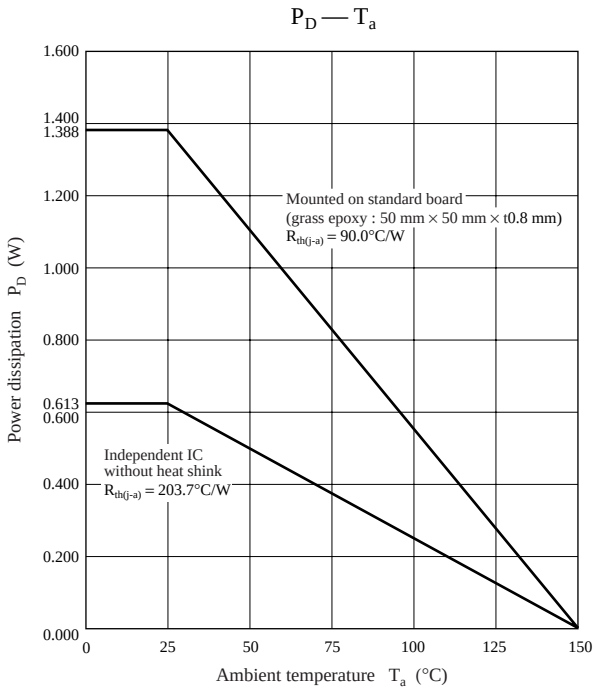
Note) FM tuning condition: Adjust the V_T of application voltage so that OSC buffer output frequency becomes 113 MHz±10 kHz.

■ Usage Notes

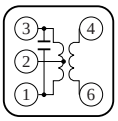
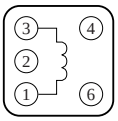
1. Use less than 10 kΩ of external resistor of pin 31
2. Use this IC not to exceed allowable power dissipation value refering to the "■ Technical Information".

■ Technical Information

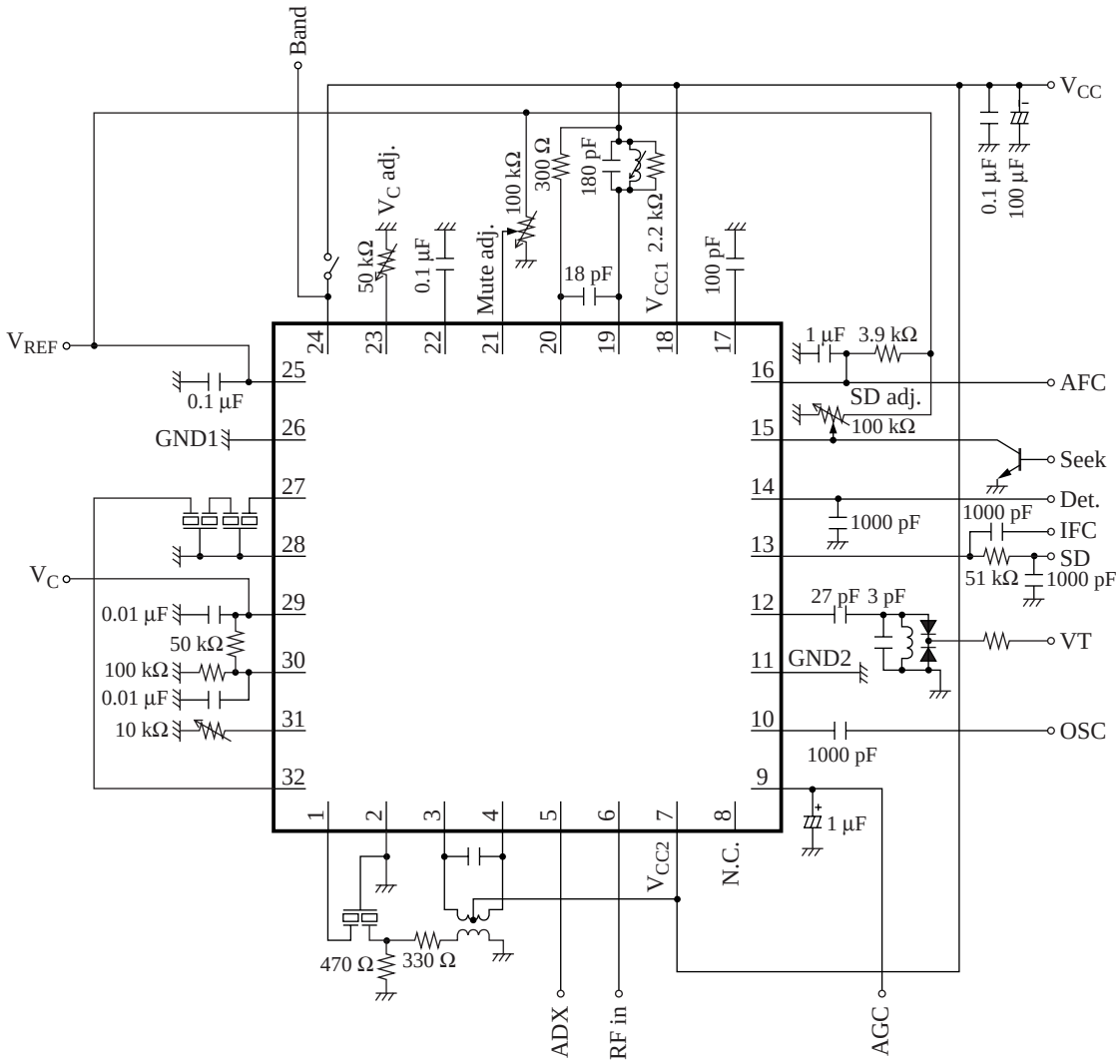
1. P_D — T_a curves of LQFP032-P-0707



2. Specification for special parts

Part	Maker	Maker part number	Connection	Specification			
				Pin No.	Turns	LC value	Q at no load
IF coil	Sumida	4162-T006		4-6	10T	12 pF±10%	50 or more (15 MHz)
				1-2	11T		
				2-3	11T		
Detection coil	Matsushita electronics parts	SQF5EB033A		1-3	11T	0.59 µH ±5.0%	41±20% (15 MHz)

■ Application Circuit Example



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