

SINGLE-CHIP BROADCAST FM RADIO TUNER

General Description

The DL5388A is a single-chip broadcast FM stereo radio tuner with fully integrated synthesizer, IF selectivity and MPX decoder. The tuner uses the CMOS process, require the least external component. The package size is SOP16 and is completely adjustment-free. All these make it very suitable for portable devices.

The DL5388A has a powerful low-IF digital audio processor, this make it have optimum sound quality with varying reception conditions.

The DL5388A can be tuned to the worldwide frequency band.

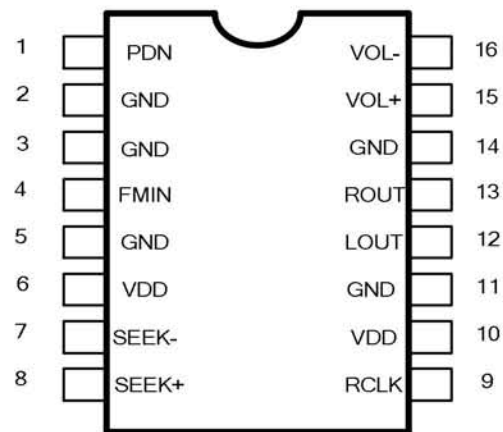


Figure 1-1.

1.1 Features

- CMOS single-chip fully-integrated FM tuner
- Low power consumption
 - Total current consumption lower than 17mA at 3.0V power supply
- Support worldwide frequency band
 - 76-108 MHz
- Default Frequency
 - 107.9MHz
- Full band seek time
 - < 5s
- Autonomous search tuning
- Support 32.768KHz crystal oscillator
- Digital auto gain control (AGC)
- Volume control
- Line-level analog output voltage
- Directly support 32 resistance loading
- Integrated LDO regulator

- 1.8 to 3.6 V operation voltage

- SOP16 pin package

1.2 Applications

- Cellular handsets
- MP3, MP4 players
- Portable radios
- PDAs, Notebook

2 Receiver Characteristics

VDD = 1.8 to 3.6 V, T_A = -25 to 85 °C, unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
General specifications						
F _{in}	FM Input Frequency		76		108	MHz
V _{rf}	Sensitivity ^{1,2,3}	(S+N)/N=26dB		1.6	2	μV EMF
α _{am}	AM Suppression ^{1,2}	m=0.3	40	-	-	dB
V _{AFL} ; V _{AFR}	Left and Right Audio Frequency Output Voltage (Pins LOUT and ROUT)				200	mV
(S+N)/N	Maximum Signal Plus Noise to Noise Ratio ^{1,2,3,5}		58	60	-	dB
α _{SCS}	Stereo Channel Separation		35	-	-	dB
THD	Audio Total Harmonic Distortion ^{1,3,6}			0.05	0.1	%
R _L	Audio Output Loading Resistance	Single-ended	32	-	-	Ω
I _{power up}			-	-	20	mA
I _{power down}			-	-	10	μA

3 Pins Description

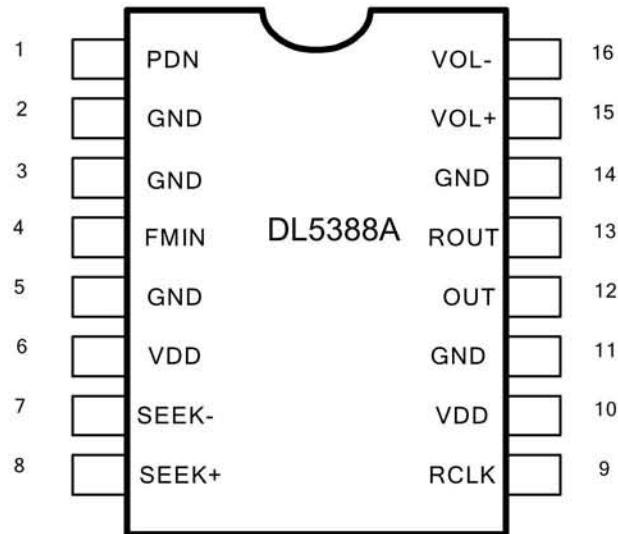


Figure 3-1.

Table 3-1 RDA7088 Pins Description

SYMBOL	PIN	DESCRIPTION
GND	2,3,5,11,14	Ground. Connect to ground plane on PCB
FM_IN	4	FM single input
RCLK	9	32.768KHz reference clock input
VDD	6,10	Power supply
LOUT,ROUT	12,13	Right/Left audio output
SEEK-,SEEK+	7,8	seek up,seek down
VOL+,VOL-	15,16	Volume control
PN	1	Powerup/powerdown Enable

4 Application Diagram

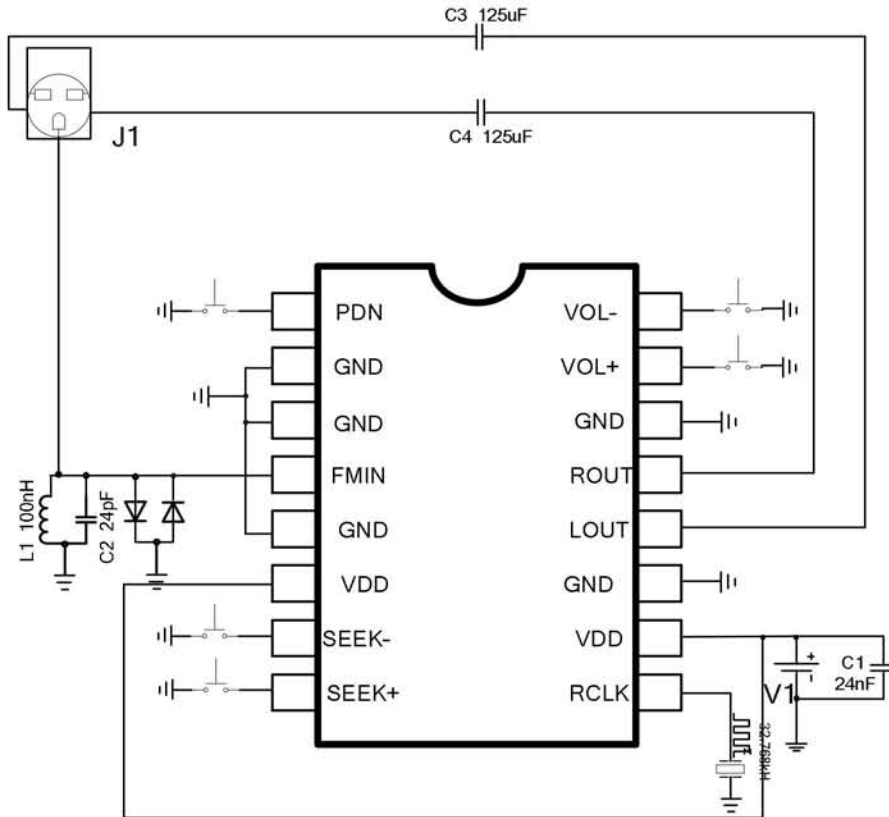


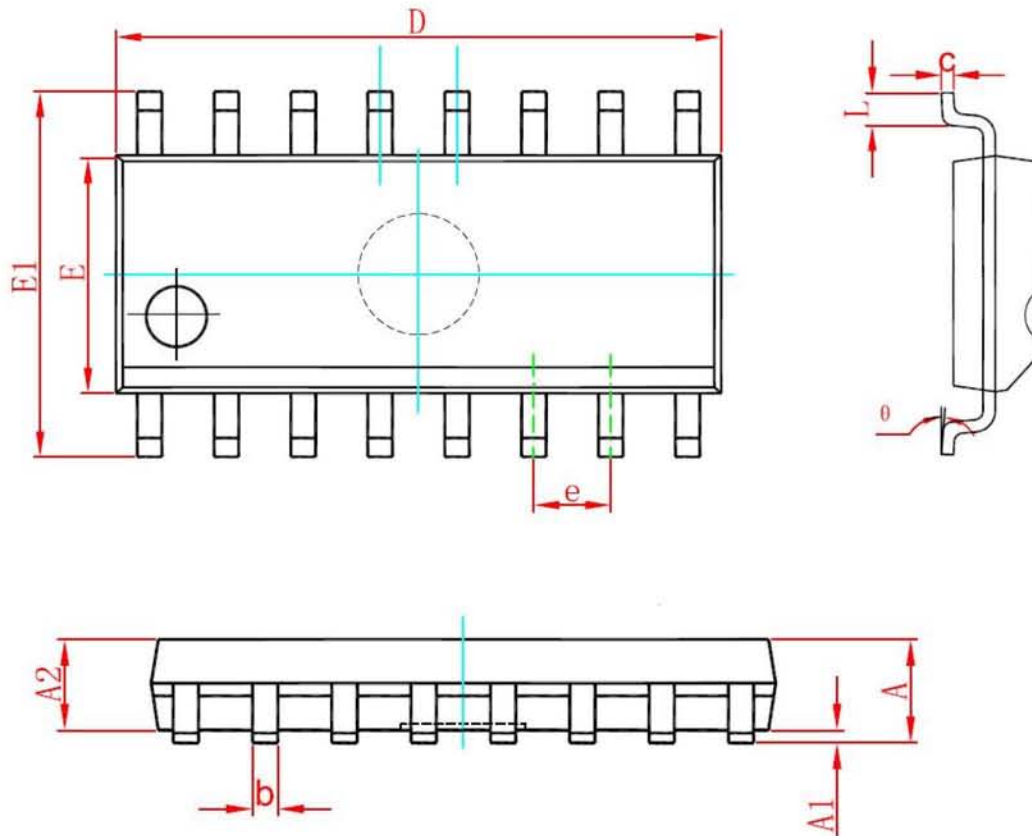
Figure 4-2.

Table 4-3 Bill of Materials:

COMPONENT	VALUE	DESCRIPTION	SUPPLIER
U1	YE5388A	Broadcast FM Radio Tuner	
J1		Common 32 Resistance Headphone	
L1/C2	100nH/24pF	LC Chock for LNA Input	Murata
C4,C5	125 μ F	Audio AC Couple Capacitors	Murata
C1	24nF	Power Supply Bypass Capacitor	Murata

5 Package Physical Dimension

Figure 5-1 illustrates the package details for the YE5388A. The package is lead-free and RoHS-compliant.



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	9.800	10.200	0.386	0.402
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
Θ	1	7	1	7
L	0.400	1.270	0.016	0.050

Figure 5-1. 16 PIN SOP