

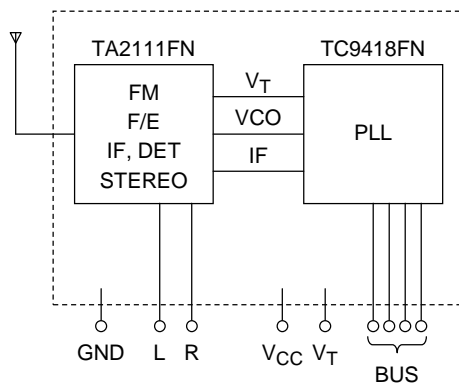
Preliminary

Tentative Data Audio IC Application Circuit

TAN-326

Example of 3-V FM Radio Circuit
TA2111FN + TC9418FN Compact Module

1. Outline



This is an application example of a compact FM radio circuit targeting such products as mobile phones, portable terminals, notebook PCs, and MP3 players.

The TA2111FN is a 24-pin IC incorporating an FM front-end, FM IF amp detector, and stereo decoder. The TC9418FN is a 3-V PLL IC which can handle input of up to 230 MHz.

2. Ratings

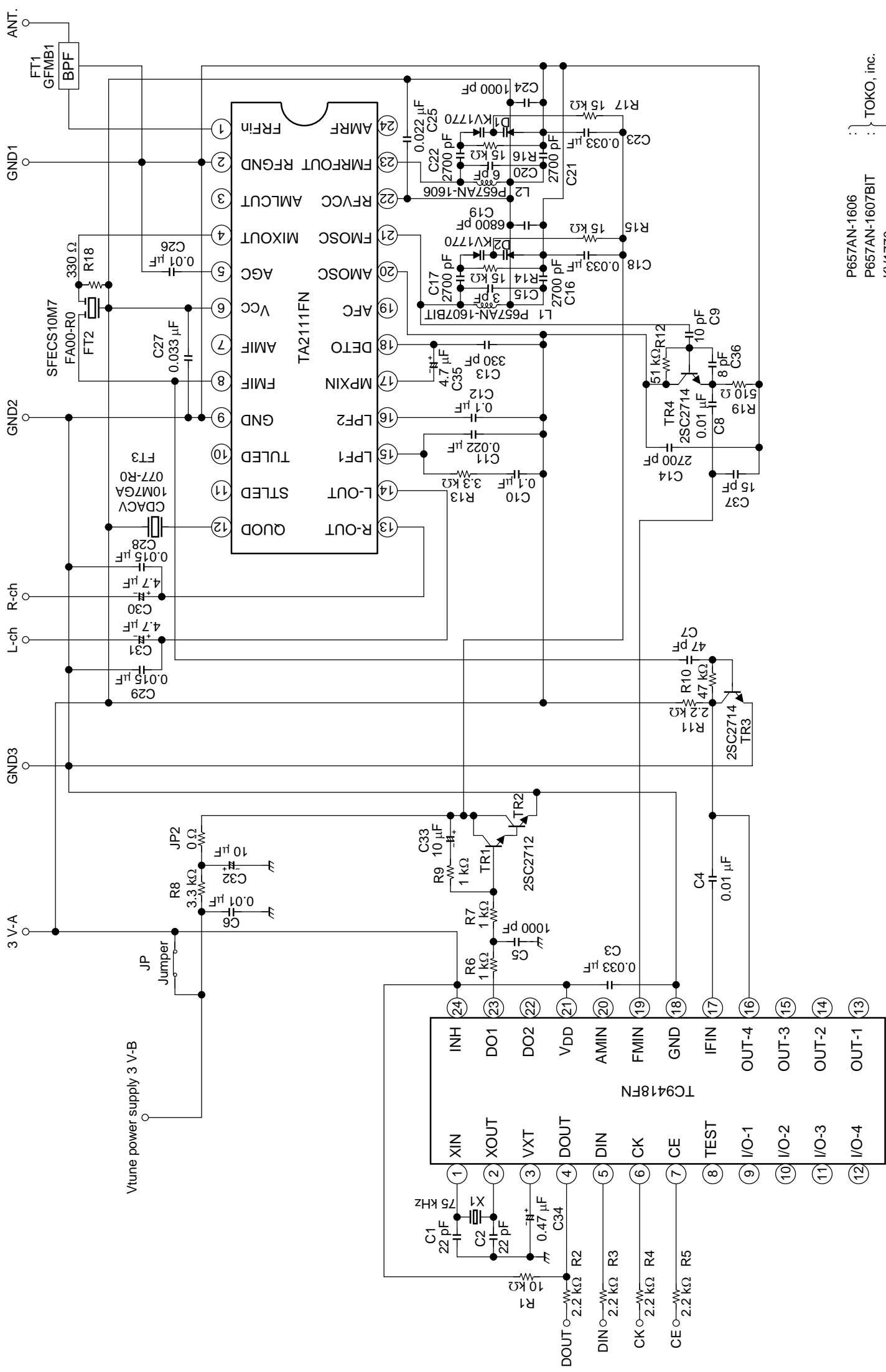
Characteristic	Rating	Unit
Supply voltage	3	V
Current dissipation (quiescent)	21	mA
Signal frequency range	87.5~108	MHz
Intermediate frequency	10.7	MHz
Sensitivity	14 (S/N = 30dB)	dB μ V EMF

3. Usage Precautions

1) Software specifications

At normal reception, set OUT-4 to Low output. At IF count (seek), set OUT-4 to Hz output.

Example of 3-V FM radio circuit



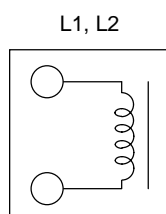
- P657AN-1606 : TOKO, inc.
- P657AN-1607BIT
- KV1770
- CDACV10M7GA077-R0: Murata Co., Ltd.
- SFECS10M7FA00-R0

Coil specifications

No.	Stage	f (Hz)	L (μH)	C _O (pF)	Q _O	Turns				Wire	Note
						1-2	2-3	1-3	4-6		
L1	FM RF	100 M	80	31.5	64	—	—	3	—		P657AN-1606 (Red)
L2	FM OSC	100 M	68	37	64	—	—	3	—		P657AN-1607BIT (Black)

(T) : Toko, inc

Pin connection (bottom view)



Parts List

No.	Symbol	Parts Name	No.	Symbol	Parts Name
1	IC1	TA2111FN	23	R14, 15, 16, 17	ERJ2GEJ153X
2	IC2	TC9418FN	24	R19	ERJ2GEJ511X
3	FT2	SFECS10M7FA00-R0	25	JP, JP2	ERJ2GE0R00X
4	FT3	CDACV10M7GA077-R0	26	C3, 18, 23, 27	CM05Y5V333Z16AT
5	TR2	2SC2712GRTE85R	27	C4, 6, 8, 26	CM05W5R103K16AT
6	R18	ERJ2GEJ331X	28	C5, 24	CM05W5R102K50AT
7	C1, 2	CM05CH220J50AT	29	C7	CM05CH470J50AT
8	C32	TMCMB1C106MTR	30	C9	CM05CH100D50AT
9	L1	5CBM P657AN-1607BIT	31	C10, 12	CM05Y5V104Z16AT
10	L2	5CBM P657AN-1606	32	C11, 25	CM05Y5V223Z25AT
11	D1	KV1770	33	C13	CM05W5R331K50AT
12	X1	DT-261 75 kHz	34	C14, 16, 17, 21, 22	CM05W5R272K50AT
13	FT1	GFMB1	35	C15	CM05CH030C50AT
14	TR1	2SC2712GRTE85R	36	C19	CM05W5R682K25AT
15	TR3, 4	2SC2714YTR85R	37	C20	CM05CH060D50AT
16	D2	KV1770	38	C28, 29	CM05W5R153K16AT
17	R1	ERJ2GEJ103X	39	C36	CM05CH080D50AT
18	R2, 3, 4, 5, 11	ERJ2GEJ222X	40	C37	CM05CH150J50AT
19	R6, 7, 9	ERJ2GEJ102X	41	C30, 31, 35	TMCMA1C475MTR
20	R8, 13	ERJ2GEJ332X	42	C33	TMCMB1C106MTR
21	R10	ERJ2GEJ473X	43	C34	TMCMA1E474MTR
22	R12	ERJ2GEJ513X			

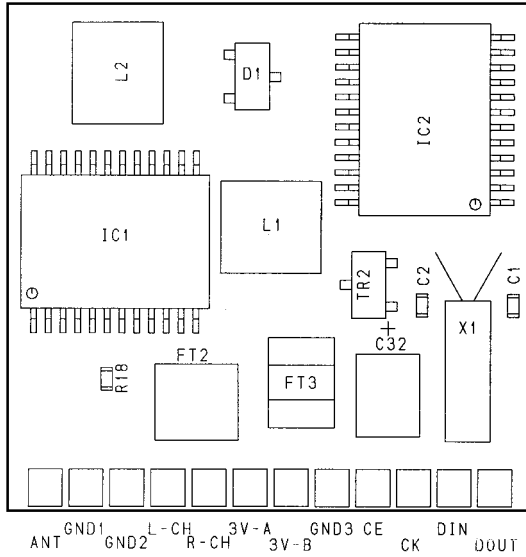
Note: Chip C and R can change to other company's similarity products.

Printed Circuit Board Pattern Examples

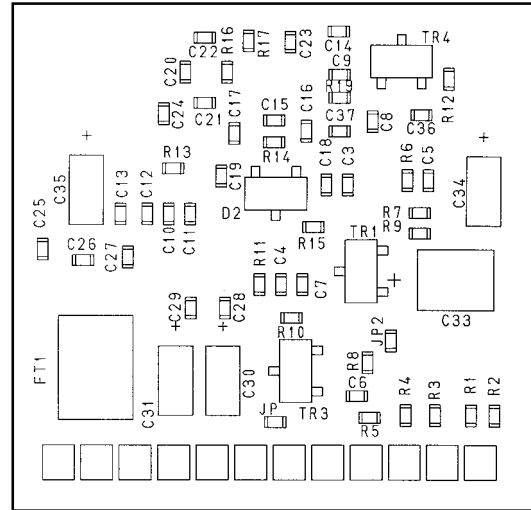
This module consists of a four-layer PCB. The patterns for the first and the fourth layers are shown below as examples.

Component-mounting surface

IC-mounting surface

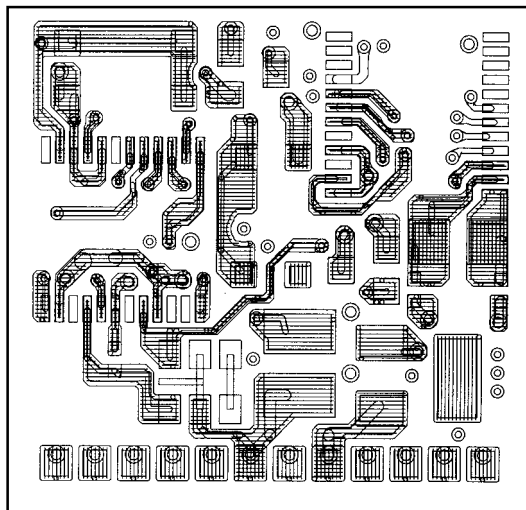


Chip-mounting surface

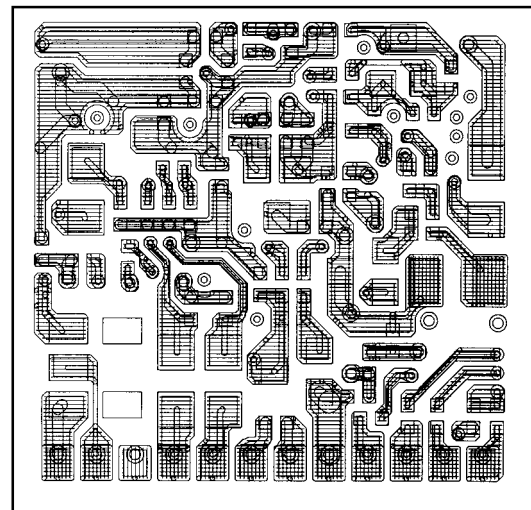


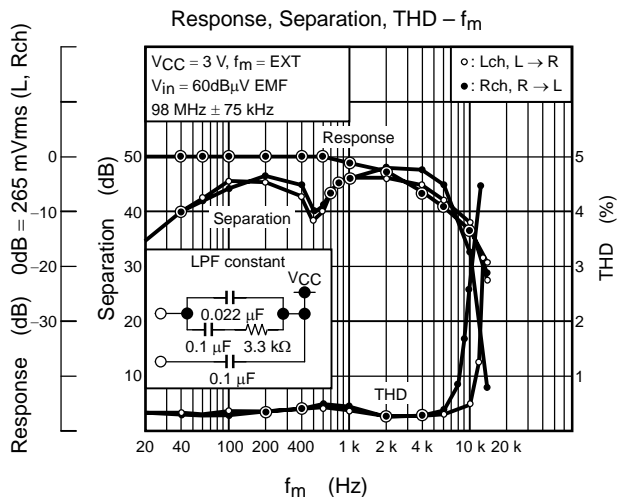
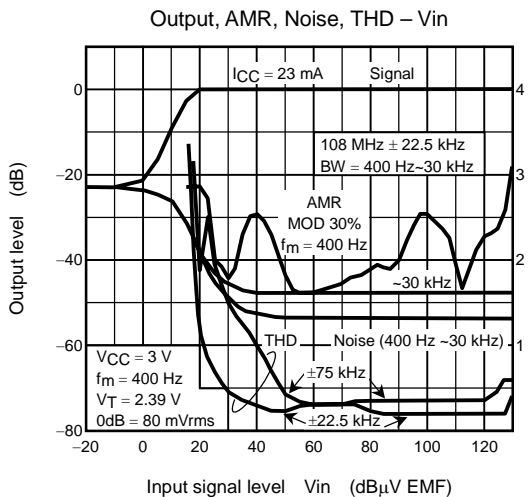
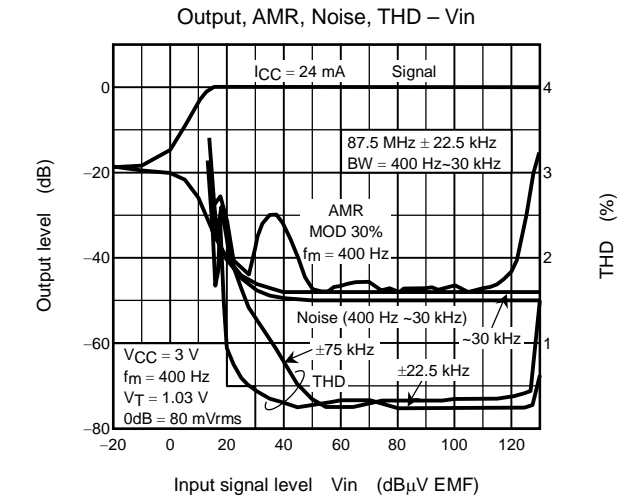
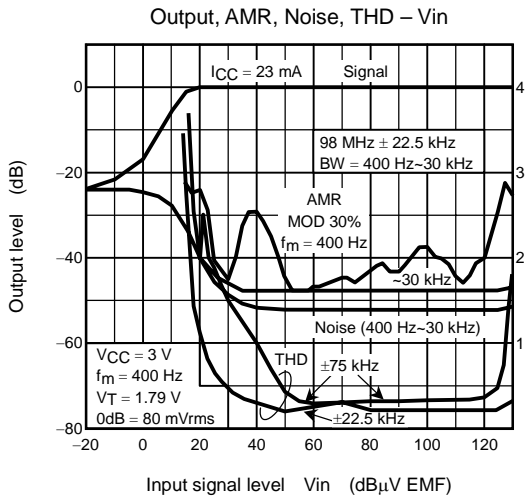
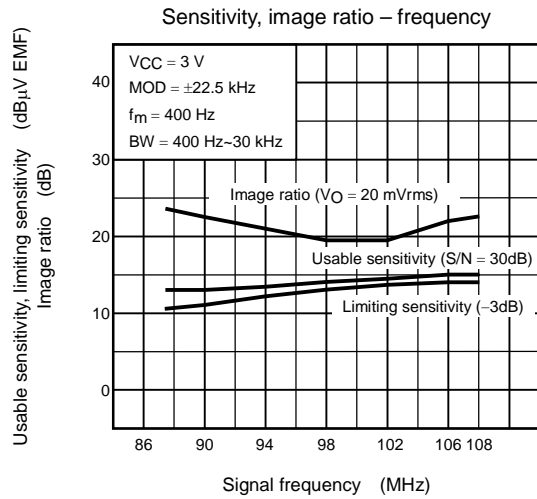
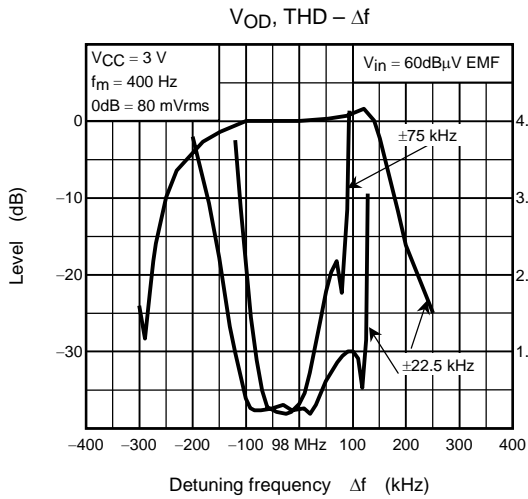
Pattern layout

IC-mounting surface



Chip-mounting surface





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