

3V FM IF/AM TUNER SYSTEM

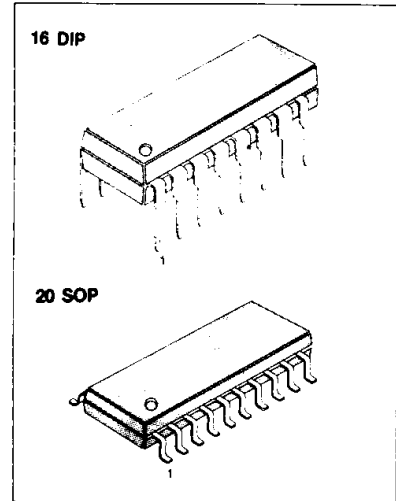
The KA2248 is a monolithic integrated circuit developed for the headphone stereo.

FUNCTIONS

- AM SECTION: Converter, IF amplifier, Detector, Tuning indicator
- FM SECTION: IF amplifier, Quadrature detector, Tuning indicator

FEATURES

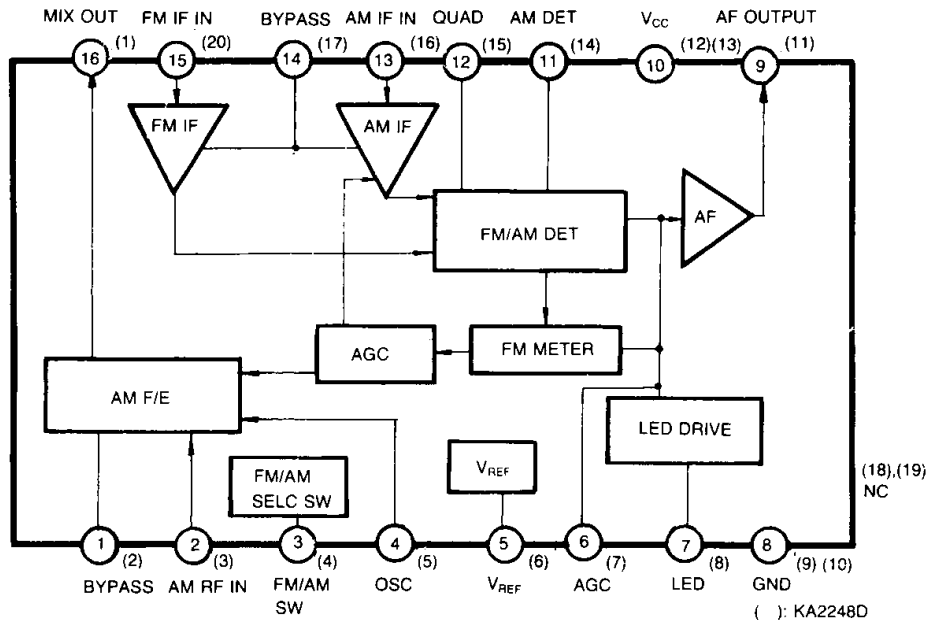
- Low quiescent current: AM: $I_{CCQ} = 3mA$ (Typ), $V_{CC} = 3V$
 FM: $I_{CCQ} = 8mA$ (Typ), $V_{CC} = 3V$
- Wide operating voltage range: $V_{CC} = 1.8V \sim 6V$.
- Built-in AM/FM function switch.
- Tuning indicator: direct LED driving capability: 10mA (Max).
- One terminal AM/FM detector output.
- A minimum number of external parts required.



ORDERING INFORMATION

Device	Package	Operating Temperature
KA2248A	16 DIP	- 20°C ~ 70°C
KA2248D	20 SOP	

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic		Symbol	Value	Unit
Supply Voltage		V _{CC}	6	V
Power Dissipation	KA2248A	P _D	600	mW
	KA2248D		350	
Operating Temperature		T _{OPR}	- 20 ~ + 70	°C
Storage Temperature		T _{STG}	- 40 ~ + 125	°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 3V, unless otherwise specified)

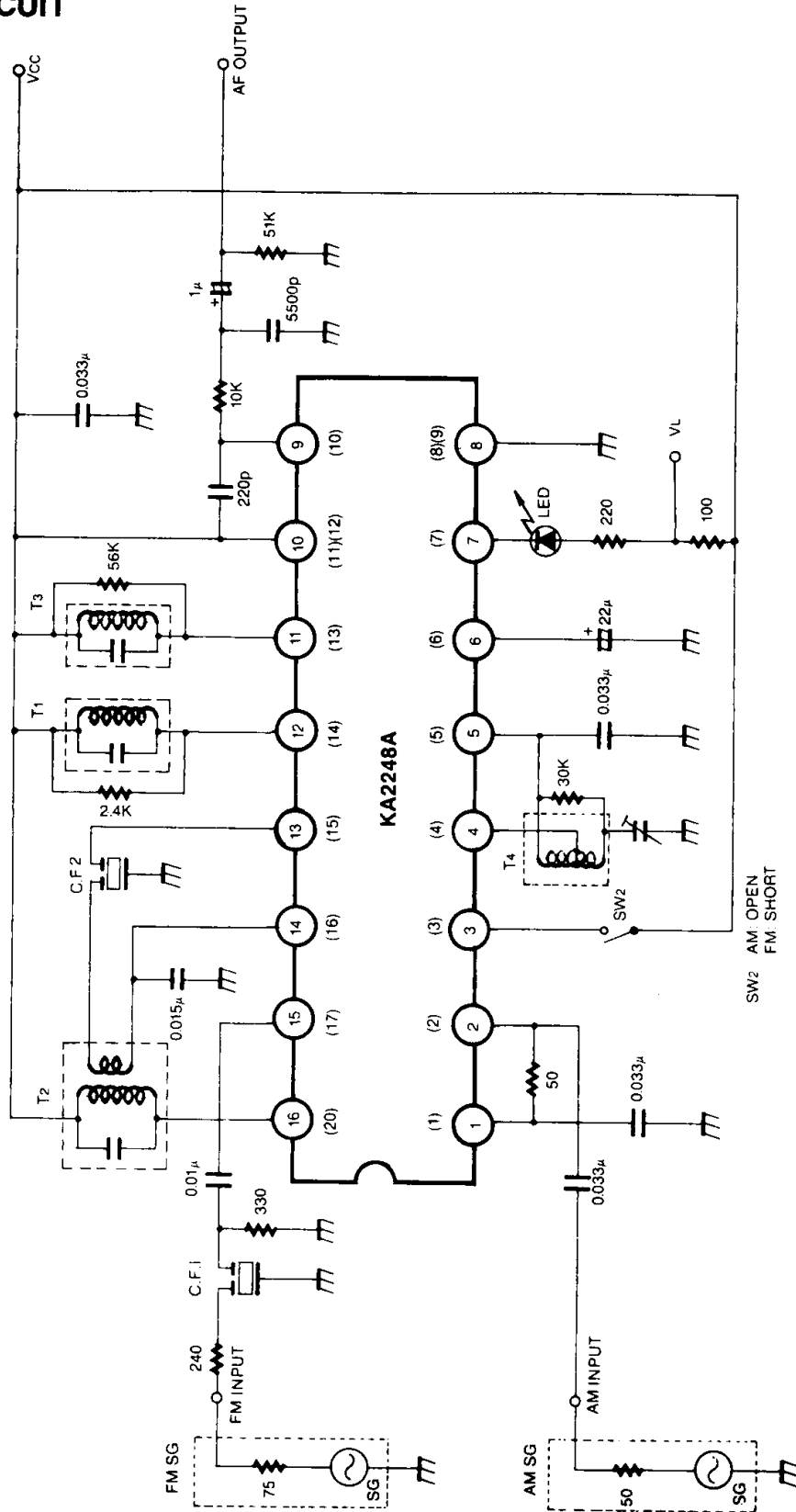
* FM Section (f = 10.7MHz, fm = 1KHz, Δf = 22.5KHz)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I _{CCQ}	V _I = 0		8	13	mA
- 3dB Limiting Sensitivity	V _{I(LIM)}	V _I = 86dBμ		46	52	dBμ
Detector Voltage	V _{O(DET)}	V _I = 86dBμ	60	85	120	mV
Signal to Noise Ratio	S/N	V _I = 86dBμ	50	65		dB
Total Harmonic Distortion	THD	V _I = 86dBμ		0.1	1.0	%
AM Rejection Ratio	AMR	V _I = 86dBμ	30	45		dB
Tuning Indication Voltage	V _L	I _{LAMP} = 1mA		50	58	dBμ
Output Resistance	R _O	f = 1KHz		0.7		KΩ

* AM Section (f = 1MHz, fm = 1KHz, 30% Mod)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Current	I _{CCQ}	V _I = 0		3	7	mA
Voltage Gain	G _V	V _I = 26dBμ	15	30	50	mV
Detector Voltage	V _{O(DET)}	V _I = 60dBμ	35	50	70	mV
Signal to Noise Ratio	S/N	V _I = 60dBμ	35	45		dB
Total Harmonic Distortion	THD	V _I = 60dBμ		1.0	3.5	%
Oscillator Stop Voltage	V _{STOP}			1.2		V
Output Resistance	R _O	f = 1KHz		8.3		KΩ
Tuning Indication Voltage	V _L	I _{LAMP} = 1mA		26	40	dBμ

TEST CIRCUIT

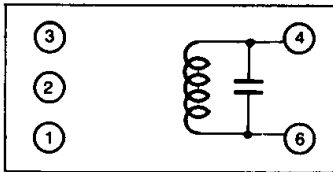


() : KA2248D

Fig. 2

COIL SPECIFICATIONS (BOTTOM VIEW)

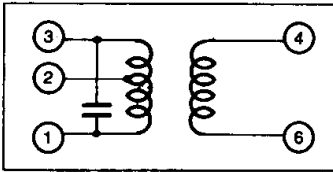
T1 FM IF (DET)



C _o (pF)	f (MHz)	Q _o	TURNS
4-6		4-6	4-6
100	10.7	150	14

Seoul Jupa
0.12mmφ UEW

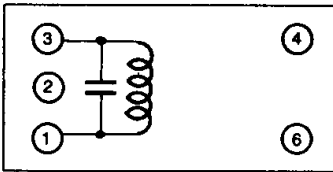
T2 AM IFT (MIX OUT)



C _o (PF)	f (KHz)	Q _o	TURNS		
1-3		1-3	1-2	2-3	4-6
180	455	110	90	62	8

Seoul Jupa
0.07mmφ UEW

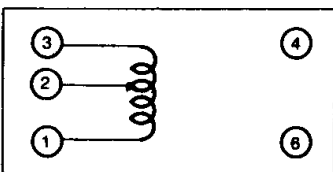
T3 AM IFT (DET)



C _o (pF)	f (KHz)	Q _o	TURNS
1-3		1-3	1-3
180	455	110	152

Seoul Jupa
0.07mmφ UEW

T4 (MW OSC)



f (KHz)	L (μH)	Q _o	TURNS	
	1-3	1-3	1-2	2-3
796	288	120	13	75

Seoul Jupa
0.08mmφ UEW