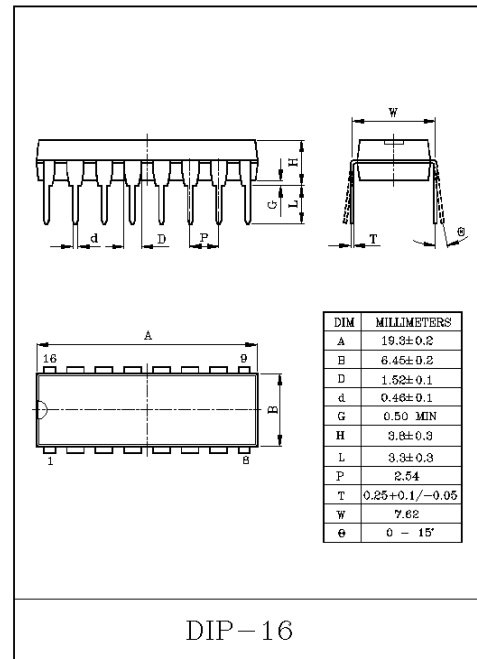


### AM/FM IF SYSTEM IC

The KIA6040P is AM/FM IF system IC designed for portable use. As compared with conventional IC, this IC is greatly improved in external parts counts and electrical characteristics, especially tweet and overload distortion.

#### FEATURES:

- Low Supply Current, AM:7mA, FM : 10mA(Typ.).
- Few External Parts.
- Excellent Tweet.
- Low Overload Distortion.
- Tuning Indicator LED Driving Capability.  
: I<sub>LAMP</sub>=10mA(Typ.)
- Built-in AM/FM Mode Switch.
- Common Output for AM/FM.
- Operating Supply Voltage Range : V<sub>CC(opr)</sub>=3~8V(Ta=25°C).



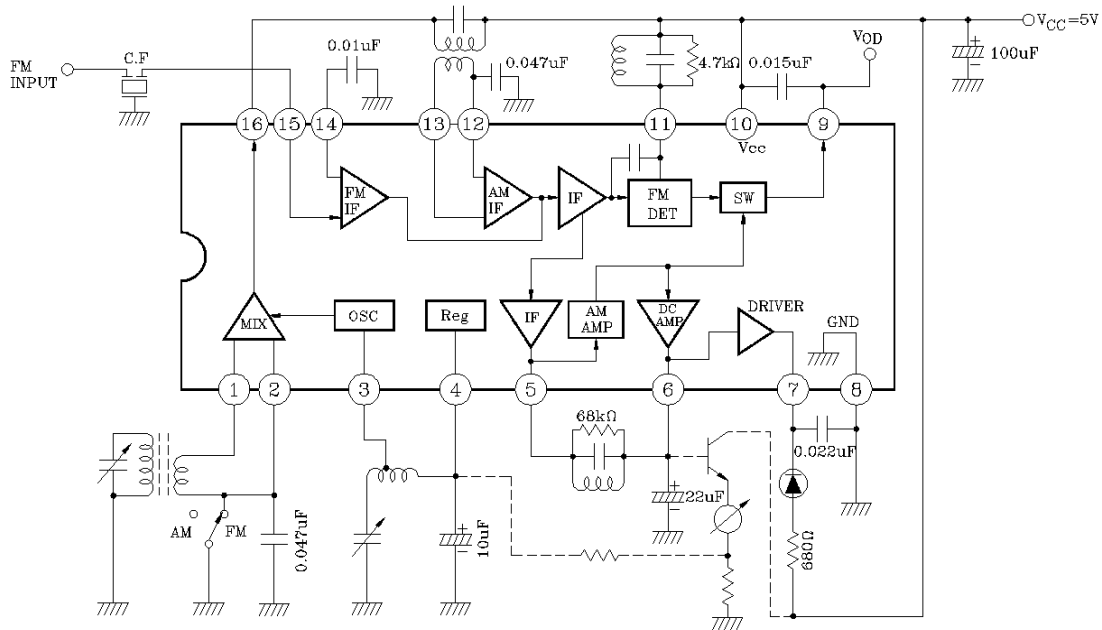
#### MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	8	V
Lamp Current	I <sub>LAMP</sub>	10	mA
Power Dissipation (Note)	P <sub>D</sub>	750	mW
Operating Temperature	T <sub>opr</sub>	-25~75	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

Note : Derated above Ta=25°C in the Proportion of 6mW/°C for KIA6040P.

# KIA6040P

## BLOCK DIAGRAM



Note : The dot line denotes a tuning meter application.

## ELECTRICAL CHARACTERISTICS

### 1. DC CHARACTERISTICS ( $V_{CC}=5V$ , Terminal voltage at no signal)

PIN NO.	ITEM	SYMBOL	Typ.		UNIT
			AM	FM	
1	(AM MIX IN)	$V_1$	1.5	0	V
2	(AM MIX BYPASS)	$V_2$	1.5	0	V
3	(AM OSC)	$V_3$	2.3	2.3	V
4	(Reg)	$V_4$	2.3	2.3	V
5	(AM IF OUT)	$V_5$	1.0	0.9	V
6	(Meter OUT)	$V_6$	1.0	0.9	V
7	(LED)	$V_7$	-	-	V
8	(GND)	$V_8$	0	0	V
9	(DET OUT)	$V_{19}$	1.4	1.5	V
10	( $V_{CC}$ )	$V_{10}$	5.0	5.0	V
11	(FM DET)	$V_{11}$	5.0	5.0	V
12	(AM IF BYPASS)	$V_{12}$	1.5	1.5	V
13	(AM IF IN)	$V_{13}$	1.5	1.5	V
14	(FM IF BYPASS)	$V_{14}$	1.5	1.5	V
15	(FM IF IN)	$V_{15}$	1.5	1.5	V
16	(AM MIX OUT)	$V_{16}$	5.0	5.0	V

# KIA6040P

## 2. AC CHARACTERISTICS

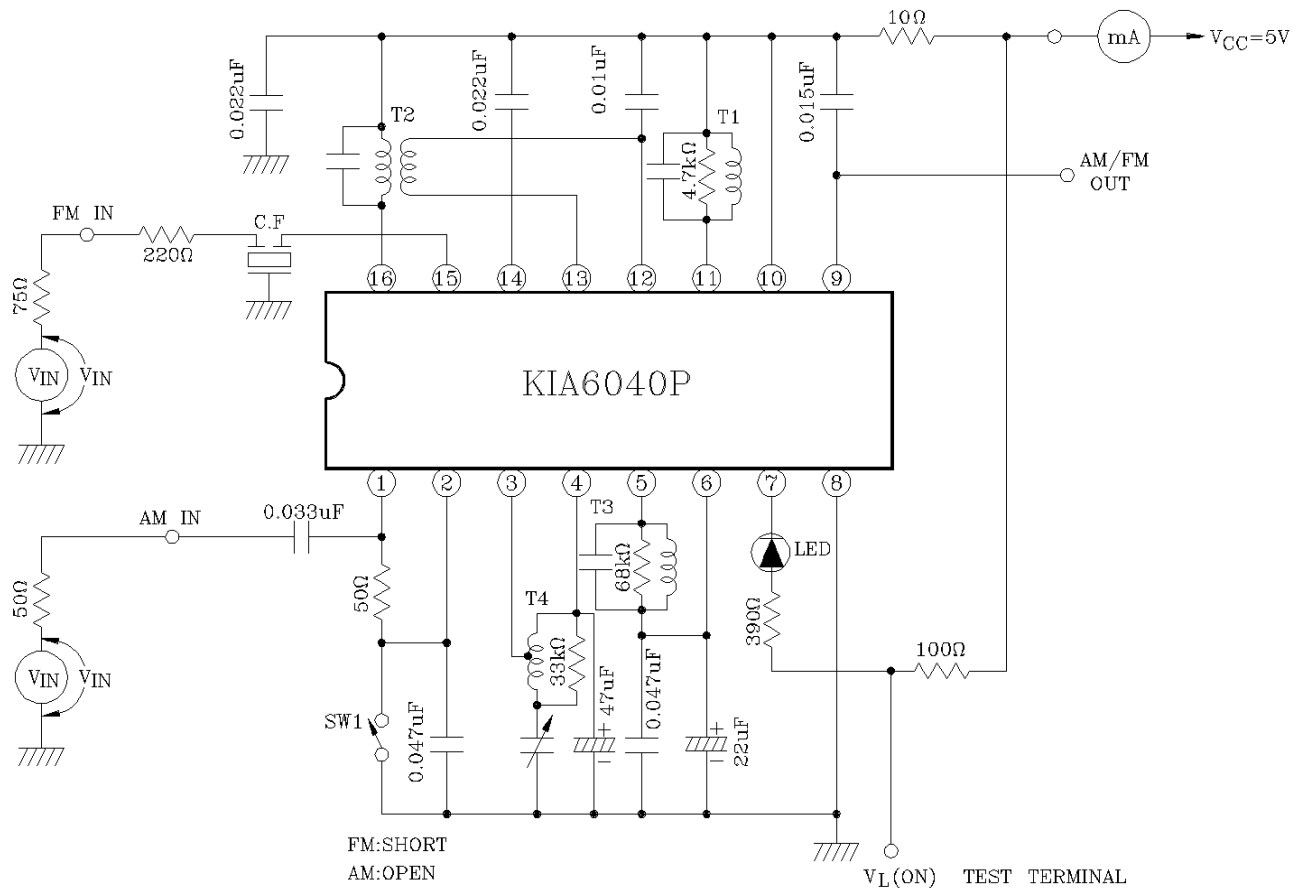
( Ta=25°C, Vcc=5V, FM: f=10.7kHz, Δf=±22.5kHz dev., fm=400Hz

AM: f=1MHz, Mod=30%, fm=400Hz )

CHARACTERISTIC		SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current		I <sub>CC(1)</sub>	1	FM V <sub>IN</sub> =0	-	10	15	mA
		I <sub>CC(2)</sub>		AM V <sub>IN</sub> =0	-	7	10	
FM	Input Limiting Voltage	V <sub>IN(dim)</sub>	1	-3dB Limiting	-	40	46	dBμ
	Recovered Output Voltage	V <sub>OD</sub>	1	V <sub>IN</sub> =66dBμ	57	85	114	mV <sub>rms</sub>
	Signal to Noise Ratio	S/N	1	V <sub>IN</sub> =80dBμ	-	65	-	dBμ
	Total Harmonic Distortion	THD	1	V <sub>IN</sub> =80dBμ	-	0.05	-	%
	AM Rejection Ratio	AMR	1	V <sub>IN</sub> =80dBμ	-	38	-	dBμ
	Meter Drive Voltage	V <sub>M</sub>	1	V <sub>IN</sub> =100dBμ	1.6	1.75	1.9	V
	Lamp ON Sensitivity	V <sub>L</sub>	1	I <sub>L</sub> =1mA	-	46	52	dB
AM	Gain	G <sub>V</sub>	1	V <sub>IN</sub> =26dBμ	20	30	60	mV <sub>rms</sub>
	Recovered Output Voltage	V <sub>OD</sub>	1	V <sub>IN</sub> =60dBμ	65	95	125	mV <sub>rms</sub>
	Signal to Noise Ratio	S/N	1	V <sub>IN</sub> =60dBμ	-	47	-	dB
	Total Harmonic Distortion	THD	1	V <sub>IN</sub> =60dBμ	-	1.0	-	%
	Meter Drive Voltage	V <sub>M</sub>	1	V <sub>IN</sub> =100dBμ	1.6	1.75	1.9	V
	Lamp ON Sensitivity	V <sub>L</sub>	1	I <sub>L</sub> =1mA	-	32	-	dBμ
	Local OSC Stop Voltage	V <sub>stop</sub>	1	R <sub>DUMP</sub> =∞	-	1.5	-	V
Pin ⑨ Output Resistance		R <sub>09</sub>	-	f=1kHz	-	3.0	-	kΩ

# KIA6040P

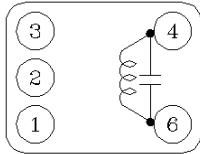
## TEST CIRCUIT



# KIA6040P

## COIL DATA (TEST CIRCUIT)

T<sub>1</sub> FM DETECTOR COIL

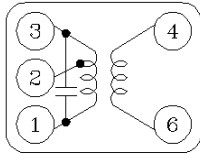


(BOTTOM VIEW)

C <sub>o</sub> (pF)	f (MHz)	Q <sub>o</sub>	TURNS
4-6		4-6	4-6
47	10.7	150	14

Ⓚ : KSC0902  
 Ⓢ : 44M-933A or  
 SIMILAR  
 WIRE : 0.12mm $\phi$  UEW

T<sub>2</sub> AM IFT (MIX OUT)

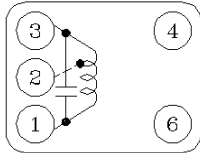


(BOTTOM VIEW)

C <sub>o</sub> (pF)	f (MHz)	Q <sub>o</sub>	TURNS		
1-3		4-6	1-2	2-3	4-6
180	455	150	90	62	8

Ⓚ : KS M308  
 Ⓢ : 48T-423 or SIMILAR  
 WIRE : 0.07mm $\phi$  UEW

T<sub>3</sub> AM IFT (DET)

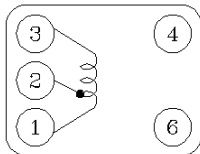


(BOTTOM VIEW)

C <sub>o</sub> (pF)	f (MHz)	Q <sub>o</sub>	TURNS
1-3		1-3	1-
180	455	110	152

Ⓚ : KSAD106  
 Ⓢ : 44M-935C or  
 SIMILAR  
 WIRE : 0.07mm $\phi$  UEW

T<sub>4</sub> MW OSC



(BOTTOM VIEW)

f (kHz)	L( $\mu$ H)	Q <sub>o</sub>	TURNS	
	1-3	1-3	1-2	2-3
796	288	120	13	75

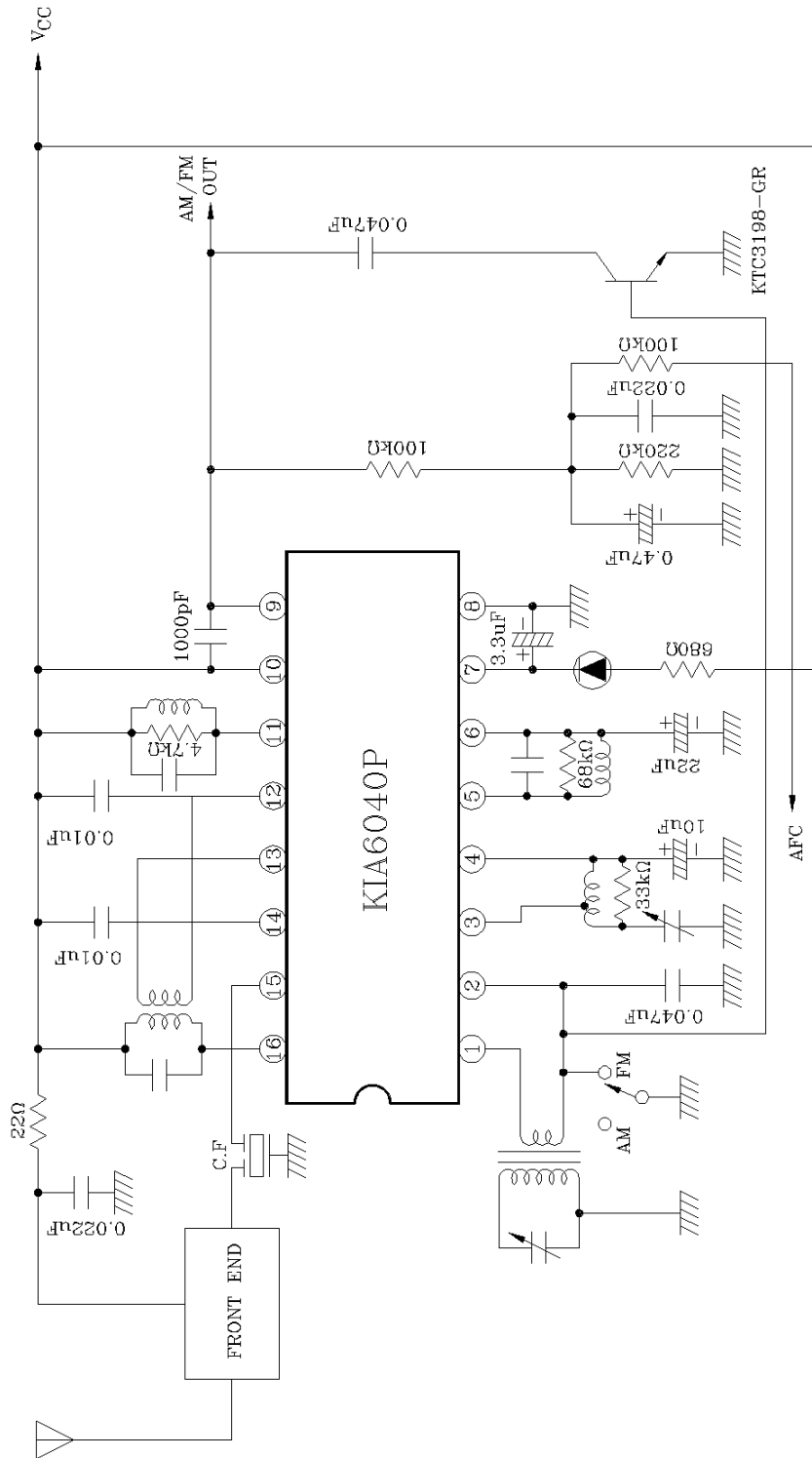
Ⓚ : KSA0408  
 Ⓢ : 0137-262 or SIMILAR  
 WIRE : 0.08mm $\phi$  UEW

NOTE : Ⓚ : KWANG SUNG ELECTRIC CO., LTD.  
 (Tel : 02)716-0034

Ⓢ : SUMIDA ELECTRIC CO., LTD.

# KIA6040P

## APPLICATION CIRCUIT



# KIA6040P

