

FM FRONT-END

The KIA6058S/AS are designed for a FM front-end application, which are suitable to a portable radio or a radio cassette. Comparing with conventional types, supply voltage dependence, overload characteristics and spurious radiation characteristics are improved.

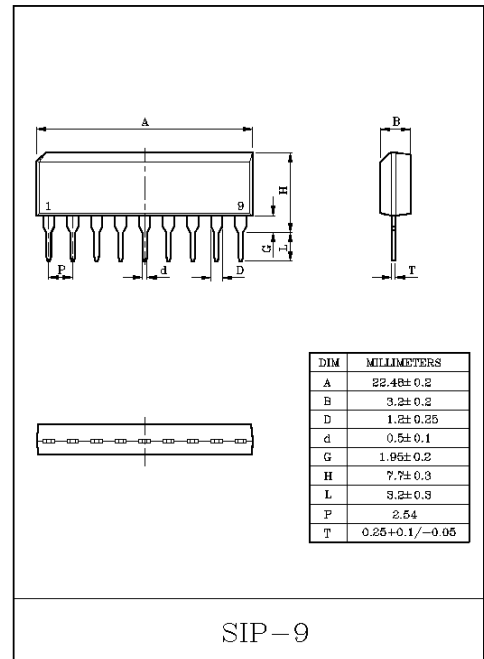
FEATURES

- Wide supply voltage range : $V_{CC(opr.)}=1.6\sim6.0V$.
- Excellent supply voltage dependence of local oscillator : Oscillation stop $V_{CC}=0.9V$ (Typ.).
- Improved inter-modulation characteristics by double balanced type mixer circuit.
- Low spurious radiation.
- Built-in clamping diode for the local oscillator output.

MAXIMUM RATINGS ($T_a=25^{\circ}C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	8	V
Power Dissipation (Note)	P_D	500	mW
Operating Temperature	T_{opr}	$-25\sim75$	$^{\circ}C$
Storage Temperature	T_{stg}	$-55\sim150$	$^{\circ}C$

Note : Derated above $T_a=25^{\circ}C$ in the proportion of $4mW/^{\circ}C$ for KIA6058S/AS



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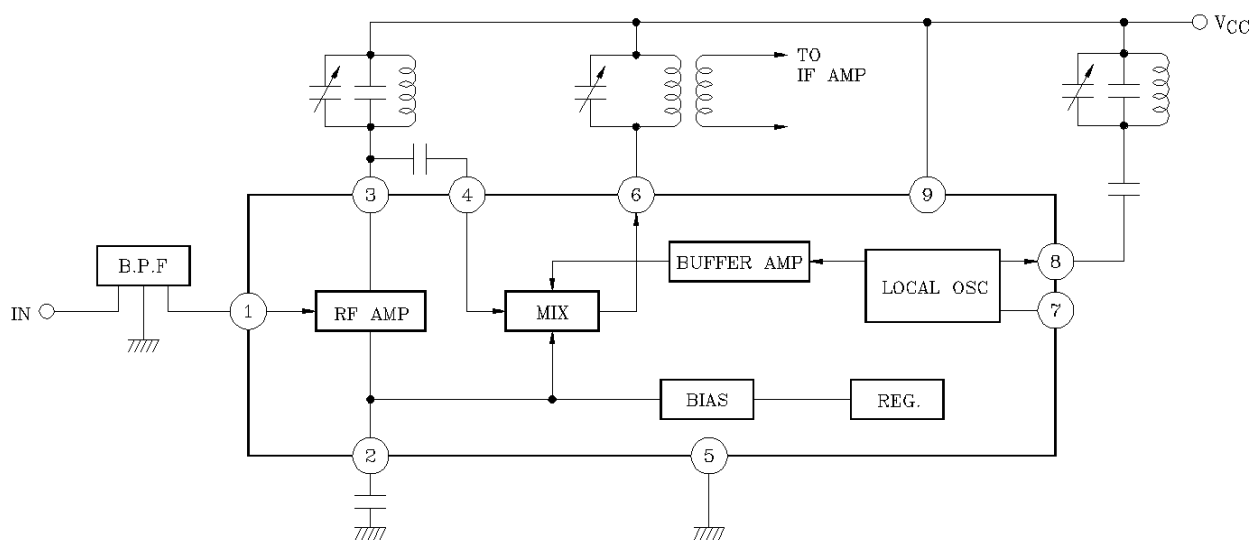
ELECTRICAL CHARACTERISTICS

($V_{CC}=5V$, $f=98MHz$, $f_m=1kHz$, $\Delta f=22.5kHz$ dev., $T_a=25^{\circ}C$)

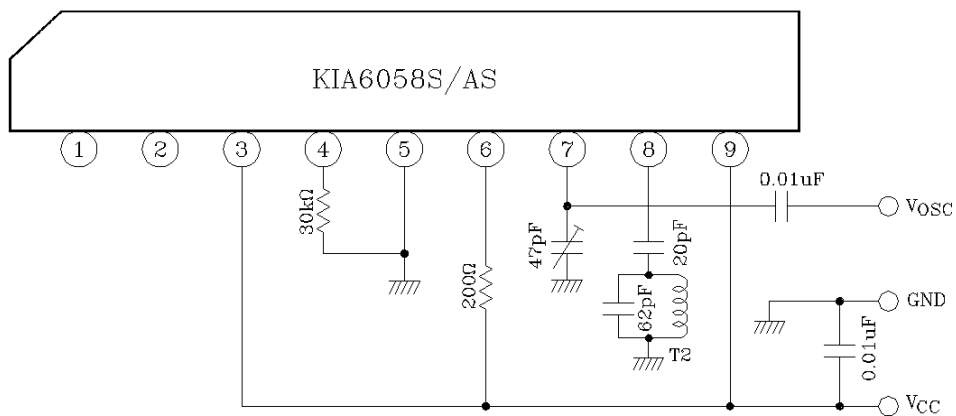
CHARACTERISTIC		SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current		I _{CC}	2	V _{IN} =0	-	5.2	8.0	mA
-3dB Limiting Sensitivity		V _{IN(lim)}	2		-	3.0	7.0	dBμ
Quiescent Sensitivity		Q _S	2		-	11.0	-	dBμ
Conversion Gain		G _C	-		-	31	-	dB
Local OSC Voltage	KIA6058S	V _{OSC}	1	fosc=60MHz	150	230	350	mV _{rms}
	KIA6058AS				90	165	220	
Pin ① Impedance	Parallel Input Resistance	r _{ip1}	3	f=98MHz	-	57	-	Ω
Pin ③ Impedance	Parallel Output Resistance	r _{op3}	3		-	25	-	kΩ
	Parallel Output Capacitance	c _{op3}			-	2.0	-	pF
Pin ④ Impedance	Parallel Input Resistance	r _{ip4}	3		-	2.7	-	kΩ
	Parallel Input Capacitance	c _{ip4}			-	3.3	-	pF
Pin ⑥ Impedance	Parallel Output Resistance	r _{op6}	3	f=10.7MHz	-	100	-	kΩ
	Parallel Output Capacitance	c _{op6}			-	4.8	-	pF
Local OSC Stop Voltage		V _{stop}	1		-	0.9	1.3	V

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BLOCK DIAGRAM

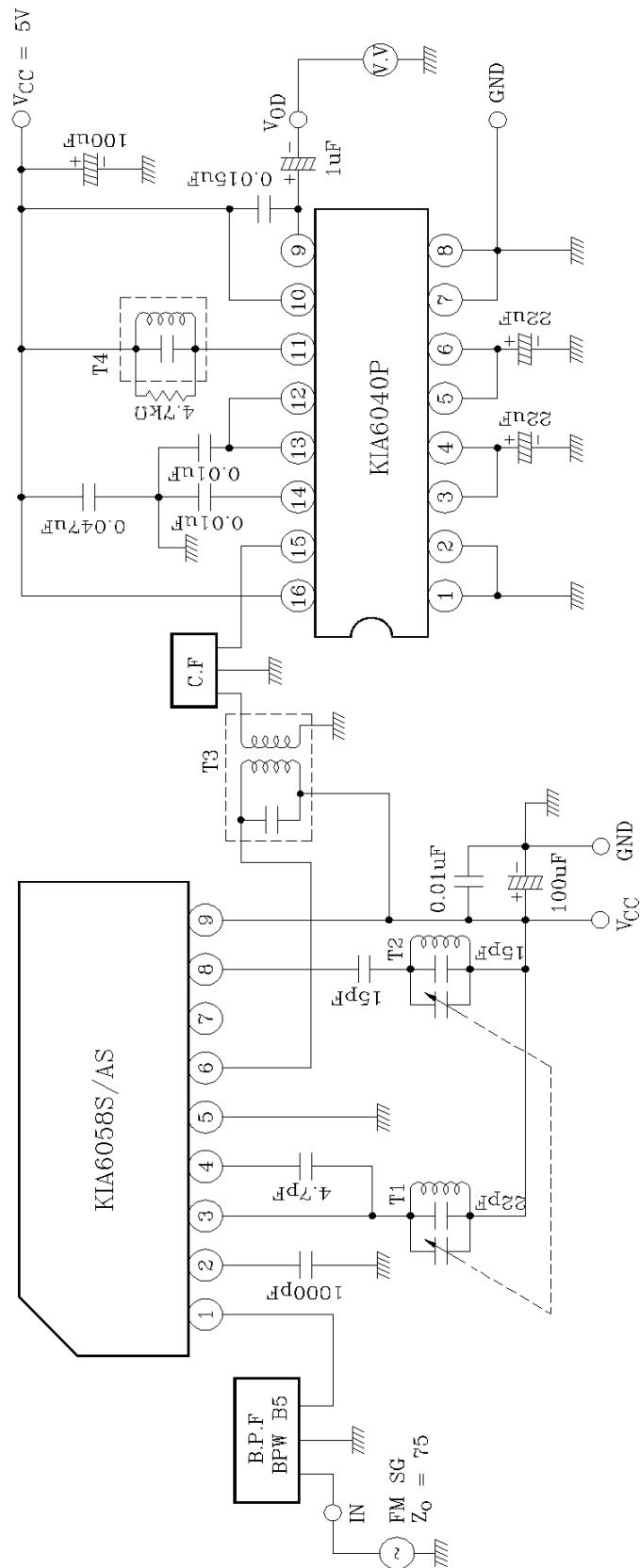


TEST CIRCUIT 1



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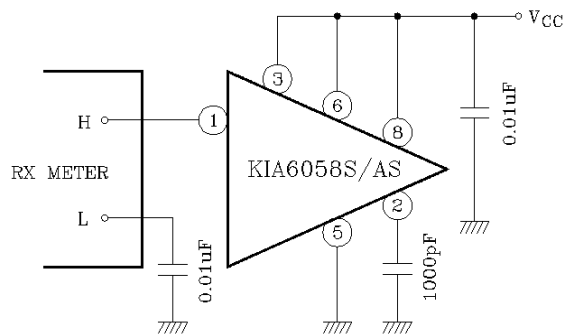
TEST CIRCUIT 2



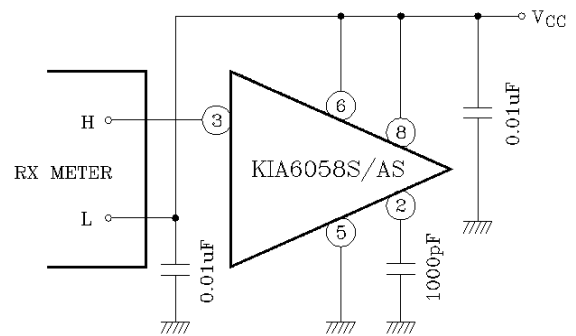
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TEST CIRCUIT 3 INPUT, OUTPUT IMPEDANCE

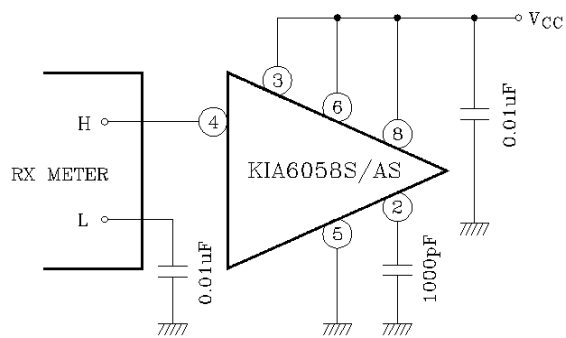
(1) r_{ip1}



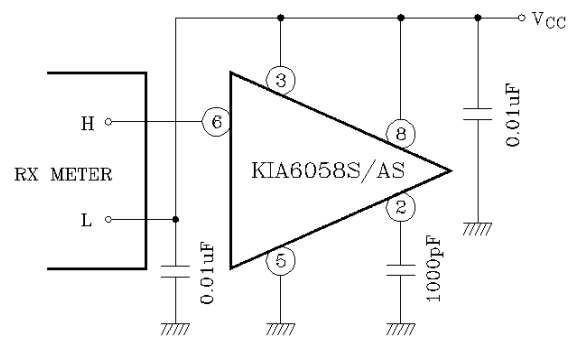
(2) r_{op3} , c_{op3}



(3) r_{ip4} , c_{ip4}

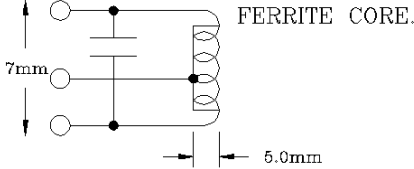
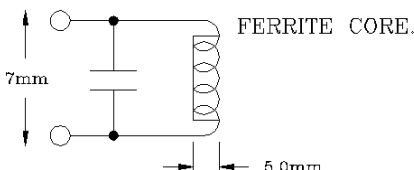
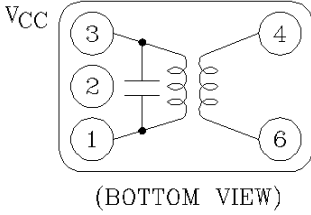
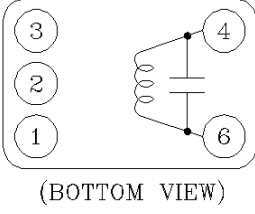


(4) r_{op6} , c_{op6}



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TEST CIRCUIT COIL DATA (Japan Band for 76.0MHz to 108.0MHz)

COIL	f ₀	Q ₀	TURNS	CAPACITANCE	
T1 RF Coil	100MHz	100	0.7mm ϕ $2\frac{1}{4}$ T Center Tap (Japan Band)	15pF (External)	
T2 OSC Coil	100MHz	100	0.7mm ϕ $2\frac{1}{2}$ T (Japan Band)	15pF (External)	
T3 IFT	10.7MHz	115	① - ③ 12T ④ - ⑥ 1T Wire 0.12mm ϕ UEW Ⓚ : KSFI604 Ⓢ : 5764 or Equivalent	75pF	
T4 Quad Coil	10.7MHz	150	④ - ⑥ 14T Wire 0.12mm ϕ UEW Ⓚ : KSC0902 Ⓢ : 44M-933A or Equivalent	47pF	

Band Pass Filter (B.P.F)
SOSHIN ELECTRIC CO., LTD. BPWB5

Tuning Capacitor
ALPS ELECTRIC CO., LTD. CB41EL933

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

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