

FM FRONT-END

The KIA6058F is designed for a FM front-end application, which is suitable to a portable radio or a radio cassette.

Comparing with conventional types, supply voltage dependence, overload characteristics and spurious radiation characteristics are improved.

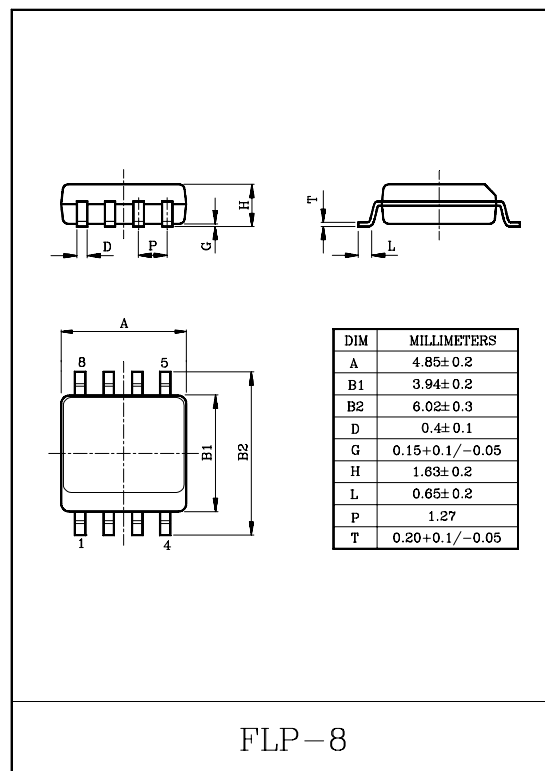
FEATURES

- Wide supply voltage range : $V_{CC}=1.6\sim6.0V$.
- 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}	6	V
Power Dissipation (Note)	P_D	240	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 $2mW/^\circ C$ for KIA6058F



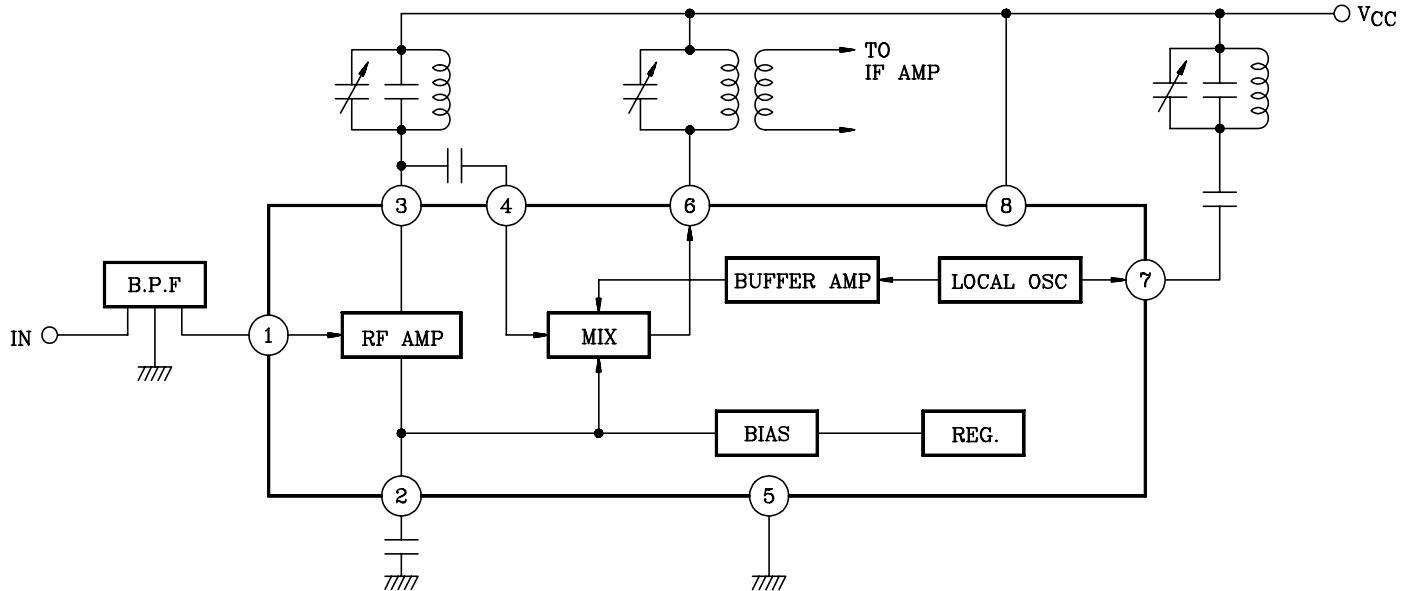
KIA6058F

ELECTRICAL CHARACTERISTICS

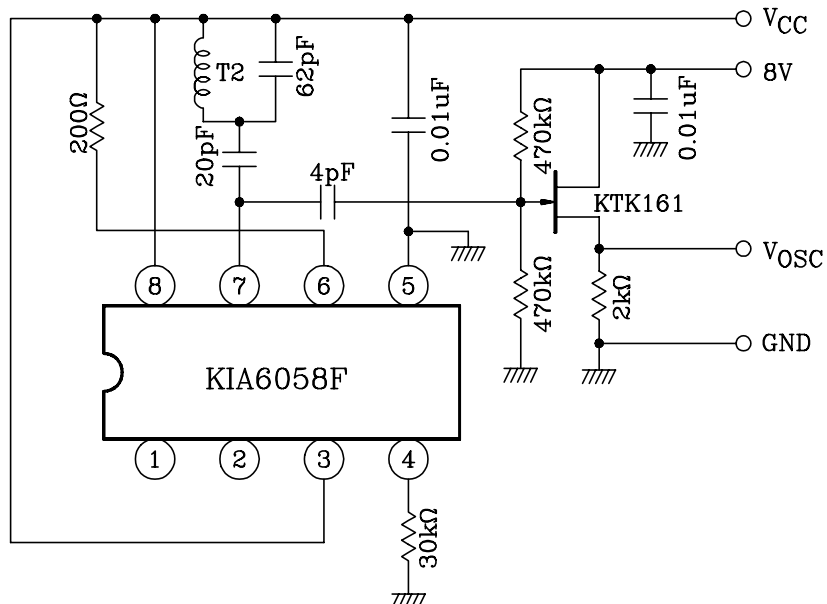
(V_{CC}=3V, f=98MHz, f_m=1kHz, Δf=22.5kHz dev, T_a=25°C)

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		V _{OSC}	1	f _{OSC} =60MHz	70	110	180	mV _{rms}
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

BLOCK DIAGRAM



TEST CIRCUIT 1



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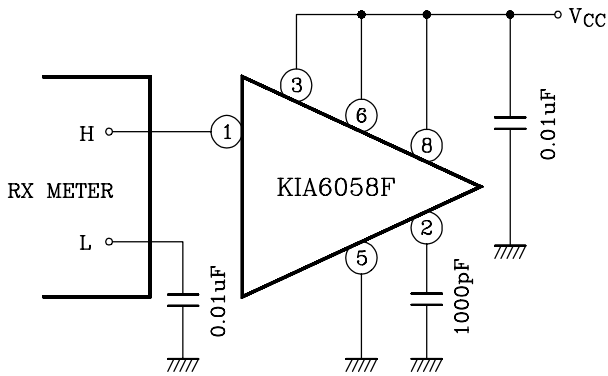


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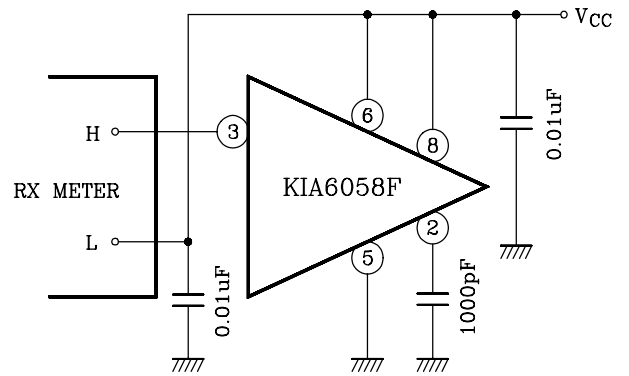
TEST CIRCUIT 3

INPUT, OUTPUT IMPEDANCE

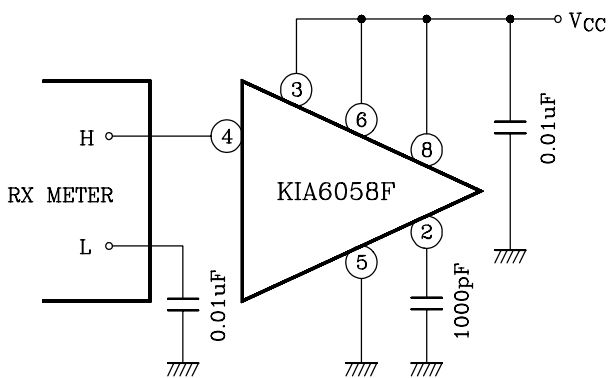
(1) r_{ip1}



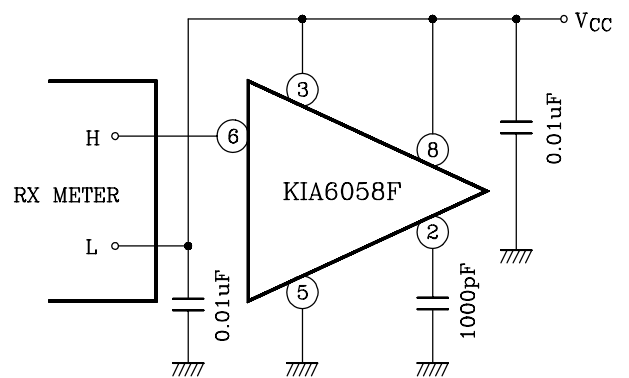
(2) r_{op3} , c_{op3}



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

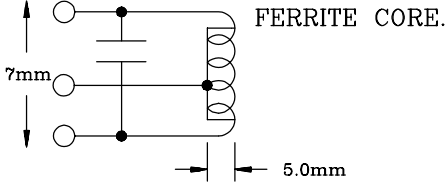
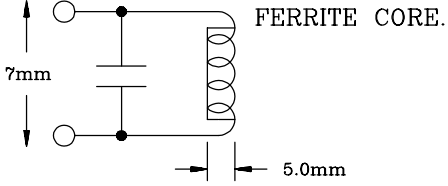
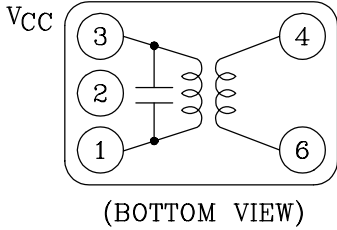
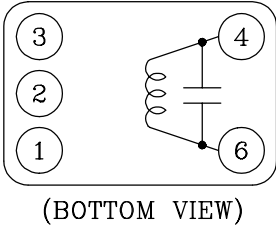


(4) r_{op6} , c_{op6}



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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	0.7mmφ $2\frac{1}{4}$ T Center Tap (Japan Band)	15pF (External)	
T2 OSC COIL	100MHz	100	0.7mmφ $2\frac{1}{2}$ T (Japan Band)	15pF (External)	
T3 IFT	10.7MHz	115	① - ③ 14T ④ - ⑥ 1T Wire 0.12mmφ UEW Ⓚ : KSFI604 Ⓢ : 5764 or Equivalent	75pF	 (BOTTOM VIEW)
T4 QUAD COIL	10.7MHz	150	④ - ⑥ 14T Wire 0.12mmφ UEW Ⓚ : KSCO902 Ⓢ : 44M-933A or Equivalent	47pF	 (BOTTOM VIEW)

Band Pass Filter (B.P.F)

SOSHIN ELECTRIC CO., LTD. BPWB5

Tuning Capacitor

ALPS ELECTRIC CO., LTD. CB41EL933

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

Ⓢ : SUMIDA ELECTRIC CO., LTD.