



## A6058

## LINEAR INTEGRATED CIRCUIT

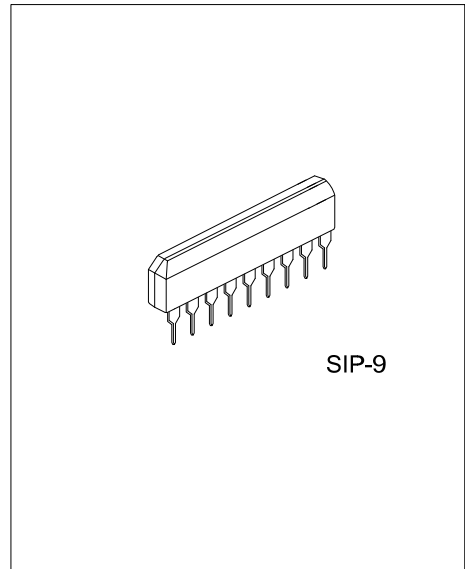
### FM FRONT-END

#### DESCRIPTION

The UTC **A6058** 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

- \* Excellent supply voltage dependence of local oscillator: oscillator stop  $V_{CC}=0.9V$ (typ)
- \* Improved inter-modulation characteristics by double balanced type mixer circuit
- \* Low spurious radiation
- \* Wide operating voltage range( 1.6V ~ 6V)



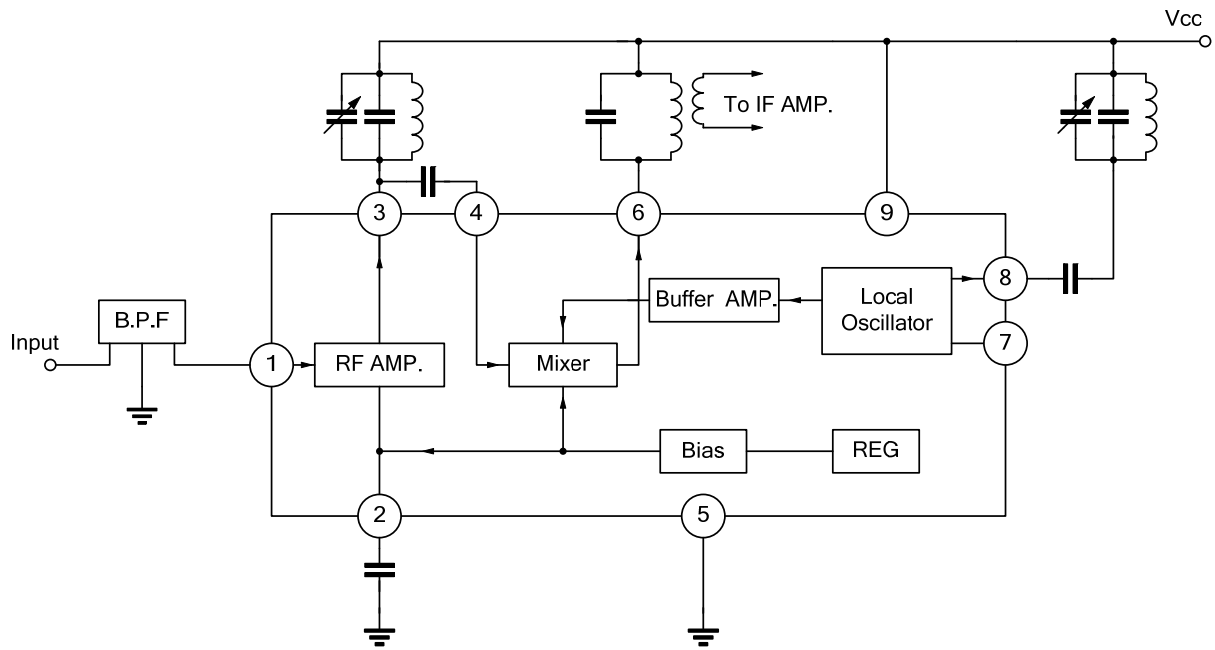
Lead-free: A6058L  
Halogen-free: A6058G

#### ORDERING INFORMATION

Ordering Number			Package	Packing
Normal	Lead Free Plating	Halogen Free		
A6058-G09-T	A6058L-G09-T	A6058G-G09-T	SIP-9	Tube

<p>A6058L-G09-T</p>	<p>(1)Packing Type (2)Package Type (3)Lead Plating</p>	<p>(1) T: Tube (2) G09: SIP-9 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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## ■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sub>CC</sub>	8	V
Power Dissipation	P <sub>D</sub>	500	mW
Operating Temperature	T <sub>OPR</sub>	-25 ~ +75	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

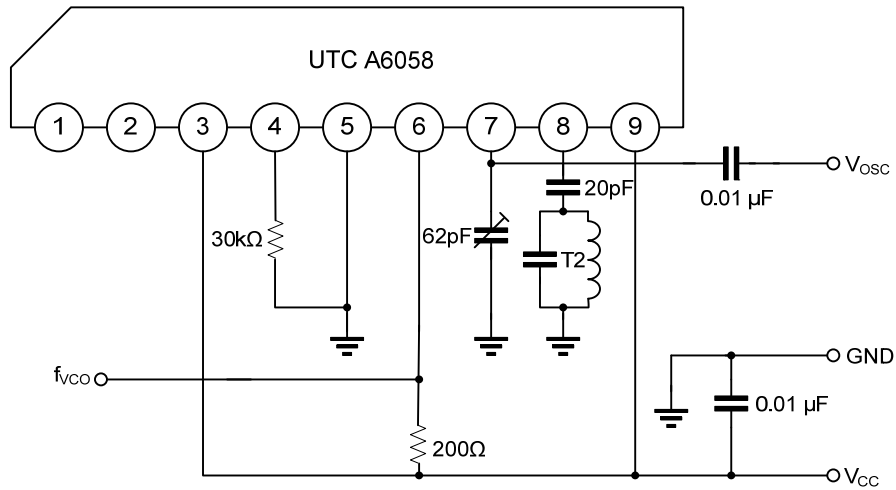
■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V<sub>CC</sub>=5V, f=83MHz, fm=1kHz, Δf=22.5kHz, unless otherwise specified)

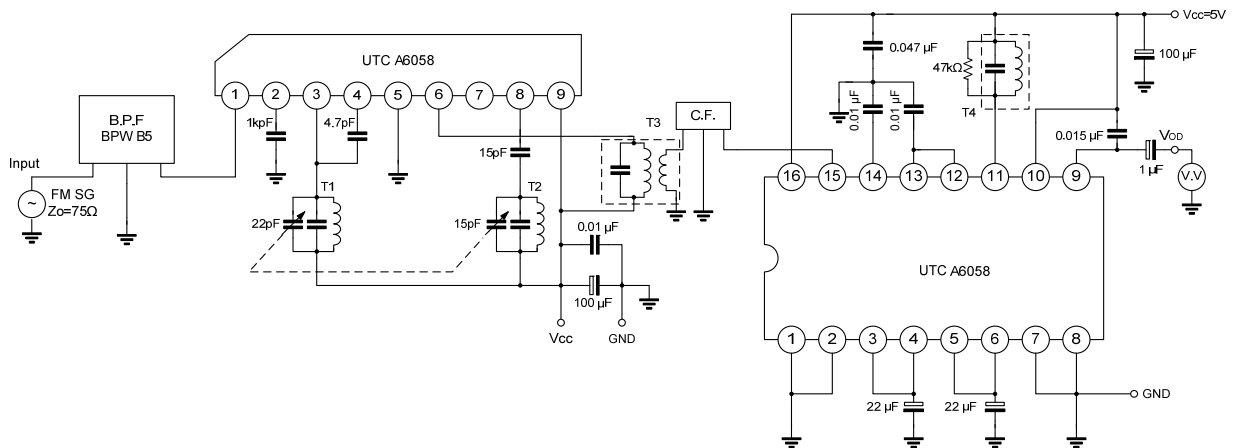
PARAMETER		SYMBOL	TEST CIRCUIT	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Quiescent Current		I <sub>Q</sub>		V <sub>IN</sub> =0		5.2	8	mA
-3dB Limiting Sensitivity		V <sub>IN(LIMIT)</sub>	2	-3dB		3	7	dBμ
Quiescent Sensitivity		Q <sub>s</sub>	2			11		dBμ
Conversion Gain		G <sub>c</sub>				31		dB
Local OSC Voltage		V <sub>OSC</sub>	1	f <sub>OSC</sub> =60MHz	90	165	220	mV <sub>RMS</sub>
Pin 1	Parallel Resistance Impedance	Input	R <sub>IP1</sub>	3		57		Ω
		Output	C <sub>OP1</sub>					pF
Pin 3	Parallel Resistance Impedance	Input	R <sub>IP3</sub>	3	f=83MHz	25		Ω
		Output	C <sub>OP3</sub>				2	
Pin 4	Parallel Resistance Impedance	Input	R <sub>IP4</sub>	3		2.7		Ω
		Output	C <sub>OP4</sub>				3.3	
Pin 6	Parallel Resistance Impedance	Input	R <sub>IP6</sub>	3	f=10.7MHz	100		Ω
		Output	C <sub>OP6</sub>				4.8	
Local OSC Stop Voltage		V <sub>STOP</sub>	1			0.9	1.3	V

## TEST CIRCUITS

### Test Circuit 1



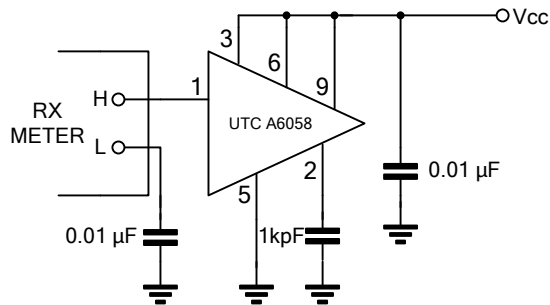
### Test Circuit 2



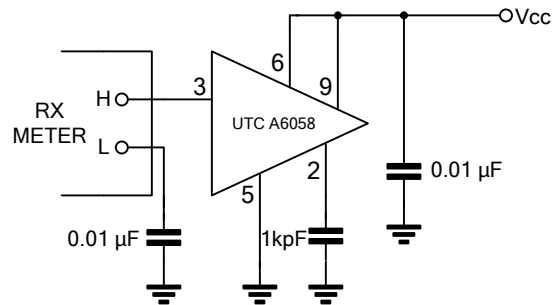
### ■ TEST CIRCUITS(Cont.)

#### Test Circuit 3

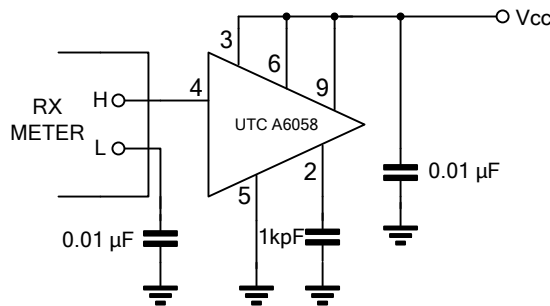
(a) Rip1



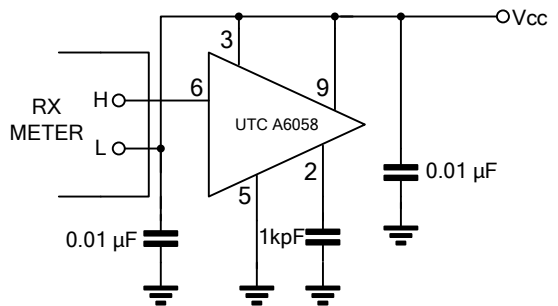
(b) ROP3,COP3



(c) Rip4,Cip4



(d) ROP6,COP6



### ■ TEST CIRCUIT COIL DATA

COIL	$f_0$	$Q_0$	TURNS	CAPACITANCE	
T1 RF COIL	100MHz	100	0.7mm $\varnothing$ ,2.25T Center Tap	15pF	
T2 OSC COIL	100MHz	100	0.7mm $\varnothing$ ,2.5T	15pF	
T3 IFT	10.7MHz	115	(1) ~ (3) 2T (4) ~ (6) 1T $\varnothing$ 0.12mm	75pF	
T4 QUAD COIL	10.7MHz	150	(4) ~ (6) 14T $\varnothing$ 0.12mm	47pF	

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