



# A6058

## LINEAR INTEGRATED CIRCUIT

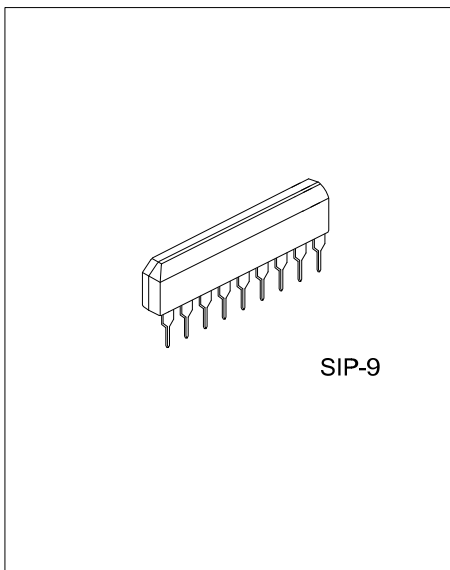
### FM FRONT-END

#### 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)

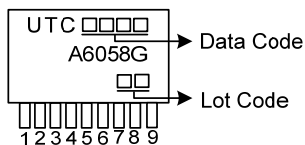


#### ORDERING INFORMATION

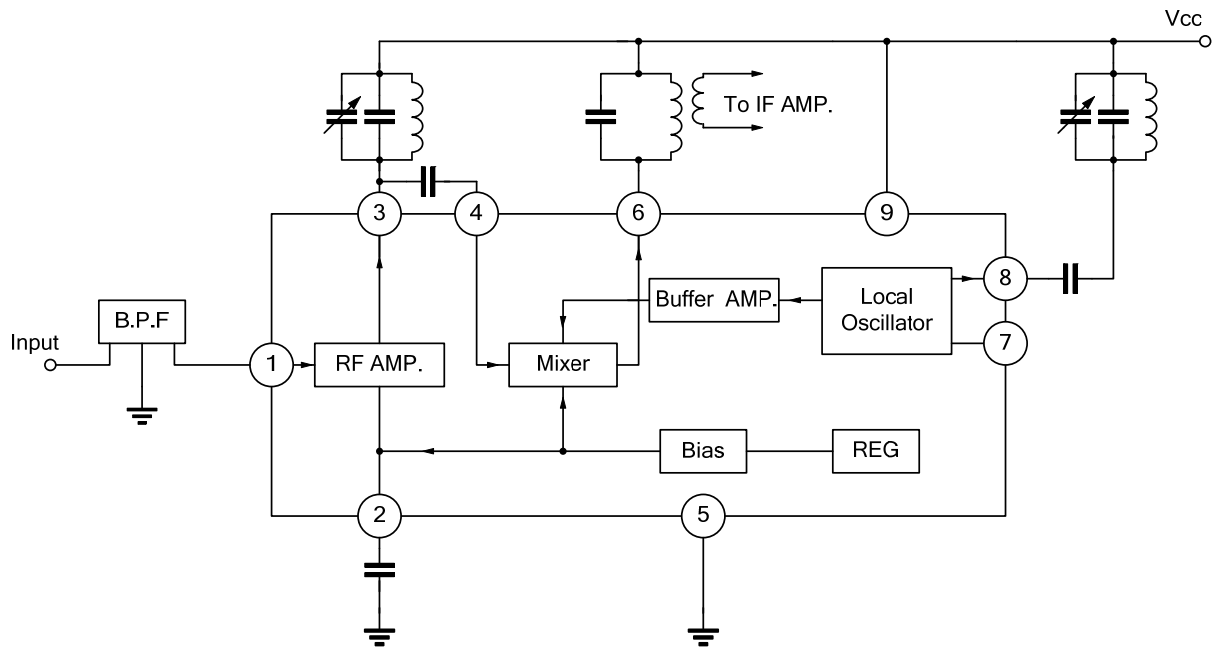
Ordering Number	Package	Packing
A6058G-G09-T	SIP-9	Tube

<p>A6058G-G09-T</p> <pre> graph TD     A6058G-G09-T --- L1[ ]     L1 --- L2[ ]     L1 --- L3[ ]     L2 --- L4[ ]     L3 --- L5[ ]     L4 --- L6[ ]     L5 --- L7[ ]     L6 --- L8[ ]     L7 --- L9[ ]     L8 --- L10[ ]     L9 --- L11[ ]     L10 --- L12[ ]     L11 --- L13[ ]     L12 --- L14[ ]     L13 --- L15[ ]     L14 --- L16[ ]     L15 --- L17[ ]     L16 --- L18[ ]     L17 --- L19[ ]     L18 --- L20[ ]     L19 --- L21[ ]     L20 --- L22[ ]     L21 --- L23[ ]     L22 --- L24[ ]     L23 --- L25[ ]     L24 --- L26[ ]     L25 --- L27[ ]     L26 --- L28[ ]     L27 --- L29[ ]     L28 --- L30[ ]     L29 --- L31[ ]     L30 --- L32[ ]     L31 --- L33[ ]     L32 --- L34[ ]     L33 --- L35[ ]     L34 --- L36[ ]     L35 --- L37[ ]     L36 --- L38[ ]     L37 --- L39[ ]     L38 --- L40[ ]     L39 --- L41[ ]     L40 --- L42[ ]     L41 --- L43[ ]     L42 --- L44[ ]     L43 --- L45[ ]     L44 --- L46[ ]     L45 --- L47[ ]     L46 --- L48[ ]     L47 --- L49[ ]     L48 --- L50[ ]     L49 --- L51[ ]     L50 --- L52[ ]     L51 --- L53[ ]     L52 --- L54[ ]     L53 --- L55[ ]     L54 --- L56[ ]     L55 --- L57[ ]     L56 --- L58[ ]     L57 --- L59[ ]     L58 --- L60[ ]     L59 --- L61[ ]     L60 --- L62[ ]     L61 --- L63[ ]     L62 --- L64[ ]     L63 --- L65[ ]     L64 --- L66[ ]     L65 --- L67[ ]     L66 --- L68[ ]     L67 --- L69[ ]     L68 --- L70[ ]     L69 --- L71[ ]     L70 --- L72[ ]     L71 --- L73[ ]     L72 --- L74[ ]     L73 --- L75[ ]     L74 --- L76[ ]     L75 --- L77[ ]     L76 --- L78[ ]     L77 --- L79[ ]     L78 --- L80[ ]     L79 --- L81[ ]     L80 --- L82[ ]     L81 --- L83[ ]     L82 --- L84[ ]     L83 --- L85[ ]     L84 --- L86[ ]     L85 --- L87[ ]     L86 --- L88[ ]     L87 --- L89[ ]     L88 --- L90[ ]     L89 --- L91[ ]     L90 --- L92[ ]     L91 --- L93[ ]     L92 --- L94[ ]     L93 --- L95[ ]     L94 --- L96[ ]     L95 --- L97[ ]     L96 --- L98[ ]     L97 --- L99[ ]     L98 --- L100[ ]         </pre> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) T: Tube (2) G09: SIP-9 (3) G: Halogen Free and Lead Free</p>
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#### MARKING



## ■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=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.

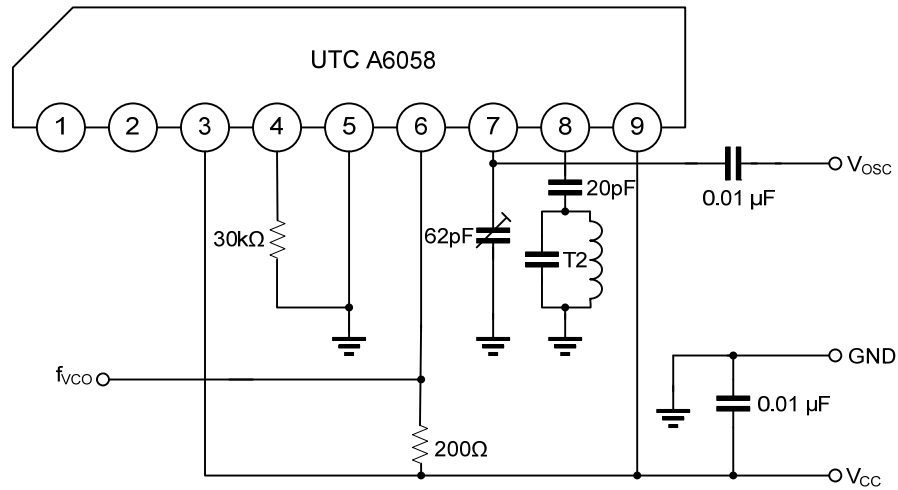
### ■ ELECTRICAL CHARACTERISTICS

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

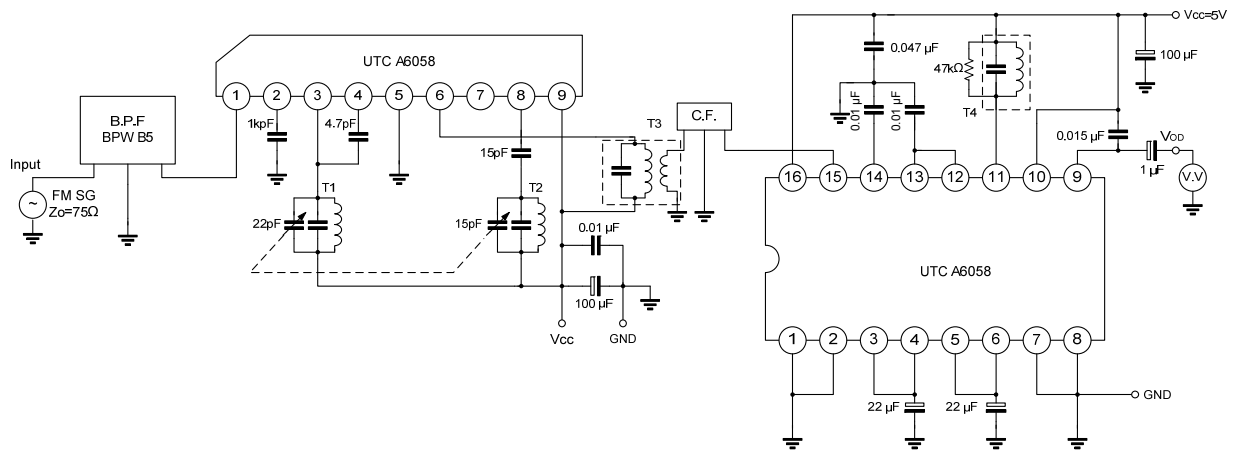
PARAMETER	SYMBOL	TEST CIRCUIT	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Quiescent Current	I <sub>Q</sub>		V <sub>IN</sub> =0		5.2	8	mA	
-3dB Limiting Sensitivity	V <sub>IN(LIMIT)</sub>	2	-3dB		3	7	dBμ	
Quiescent Sensitivity	Q <sub>s</sub>	2			11		dBμ	
Conversion Gain	G <sub>c</sub>				31		dB	
Local OSC Voltage	V <sub>OSC</sub>	1	f <sub>OSC</sub> =60MHz	90	165	220	mV <sub>RMS</sub>	
Pin 1 Impedance	Parallel Input Resistance	R <sub>IP1</sub>	3		57		Ω	
Pin 3 Impedance	Parallel Output Resistance	R <sub>IP3</sub>	3	f=83MHz	25		kΩ	
		C <sub>OP3</sub>			2.0		pF	
Pin 4 Impedance	Parallel Input Resistance	R <sub>IP4</sub>	3		2.7		kΩ	
		C <sub>OP4</sub>			3.3		pF	
Pin 6 Impedance	Parallel Output Resistance	R <sub>IP6</sub>	3		f=10.7MHz	100		kΩ
		C <sub>OP6</sub>			4.8		pF	
Local OSC Stop Voltage	V <sub>STOP</sub>	1			0.9	1.3	V	

## ■ TEST CIRCUITS

### Test Circuit 1



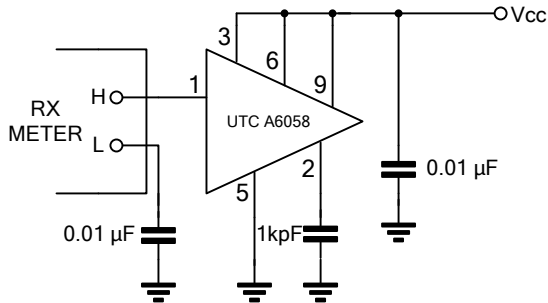
### Test Circuit 2



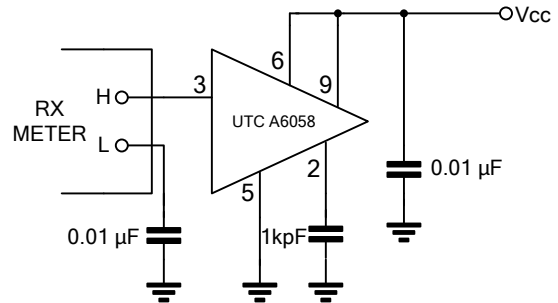
## TEST CIRCUITS(Cont.)

### Test Circuit 3

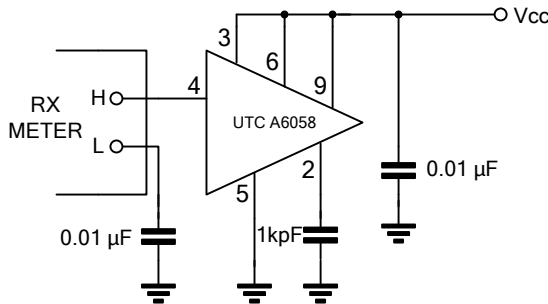
(a) Rip1



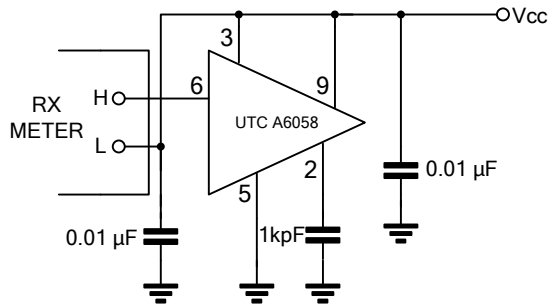
(b) ROP3,COP3



(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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