Single-Chip System for Radios
Monolithic IC LMF501

Outline

This is a monolithic IC designed for use as a single-chip AM radio. It can be used to configure an AM radio with few external components.
It is ideal for use in watch radios, lighter-radios and other applications intended to operate on low voltage and current.

Features

1. Operation at low voltages possible　　V_{CC} : 1.1V
2. Operates with low current consumption
3. Compact, lightweight
4. Broad AGC range

Package

TO-92A (LMF501T-2)

Absolute Maximum Ratings

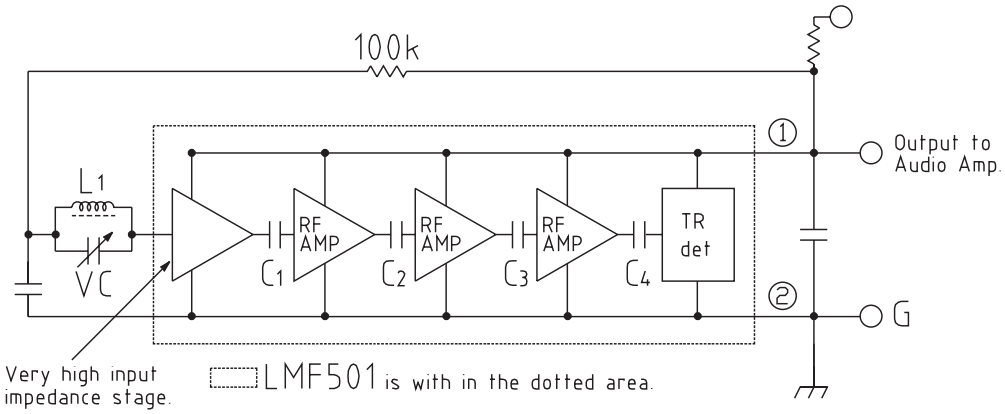
Item	Symbol	Ratings	Units
Operating temperature	T_{OPR}	–30~+80	℃
Storage temperature	T_{STG}	–40~+125	℃
Power supply current	V_{CC}	1.5	V

Electrical Characteristics

Item	Symbol	Min.	Typ.	Max.	Units
Power supply voltage	V_{CC}		1.4		V
Operating output voltage	V_{OUT}	0.8		1.5	V
Circuit current	I_{CC}		0.3		mA
Practical frequency range	fR	150		3000	kHz
Input resistance	Z_{IN}		4		MΩ
Audio distortion	THD		4		%
AGC range	AGC	30			dB
Power gain	Gp		70		dB

Measurement conditions:　Except where noted otherwise, in measurement circuits1
V_{CC}=1.4 V, RAGC=1.5kΩ
Modulator: f=1000Hz 40%, V_{IN}=1m V/rms

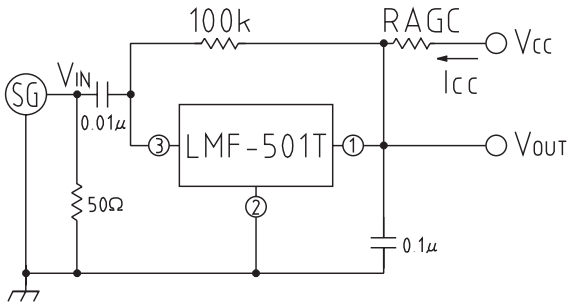
Block Diagram



Elemental Characteristics

1. Vcc		1.3V~
2. Operating voltage		(Output)1.0~1.5V
3. Input sensitivity		0.3mA typ.
4. f		300k ~ 3MHz
5. Input resistance		4MΩ typ.

Measurement Circuit



Application Circuits