



SANYO Semiconductors DATA SHEET

LA8175M — Monolithic Linear IC Broadband Amplifier

Overview

The LA8175M is a broadband general purpose, low cost, high linearity RF amplifier IC. The device offers 7 dB gain, 4.5 dB noise figure and achieves an input third order intercept point of +24 dBm. The device is suitable to design tuner applications.

Features

- 7 dB Gain
- 4.5 dB Noise Figure
- Typical IIP3 is +24 dBm
- Single +5 V supply

Applications

- Set top box
- Cable splitters
- Antenna System

Specifications

Absolute Maximum Ratings at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum Supply voltage	$V_{CC\text{ max}}$		5.5	V
Allowable power dissipation	$P_d\text{ max}$	$T_a \leq 75\text{ }^\circ\text{C}$ When mounted on printed circuit board	TBD	W
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

Recommended Operating Conditions at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		5.0	V
Operating supply voltage range	$V_{CC\text{ op}}$		4.5 to 5.25	V

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Electrical Characteristics

DC Electrical Characteristics at $T_a = 25\text{ }^\circ\text{C}$, $V_{CC} = 5.0\text{ V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply voltage	V_{CC}		4.75	5.0	5.25	V
Supply current	I_{CCO}			75		mA

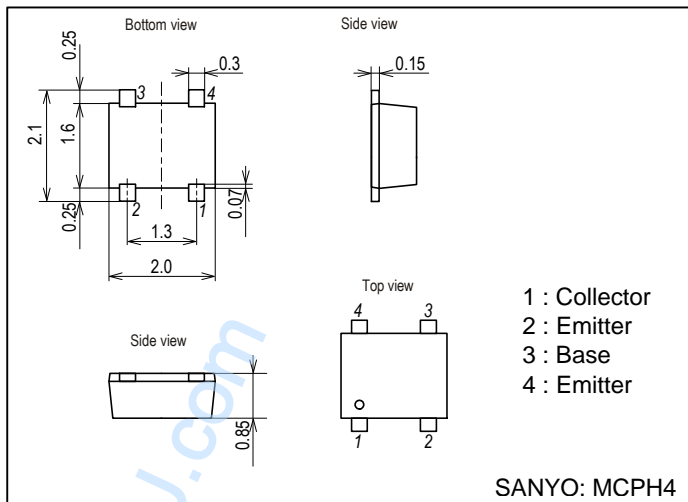
AC Electrical Characteristics at $T_a = 25\text{ }^\circ\text{C}$, $V_{CC} = 5.0\text{ V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input frequency range	f_{in}		50		860	MHz
Input return loss	S11				-10	dB
Output return loss	S22				-15	dB
Noise Figure	NF			4.5		dB
Power Gain	G_p			7		dB
Input 1dB Compression Point	P1dB					dBm
Input Third-Order Intercept Point	IIP3			24		dBm
Input Second-Order Intercept Point	IIP2			34		dBm

Package Dimensions

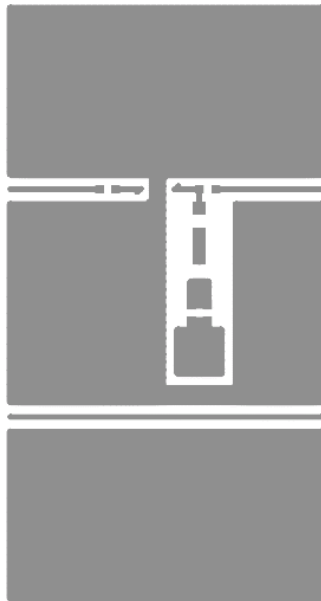
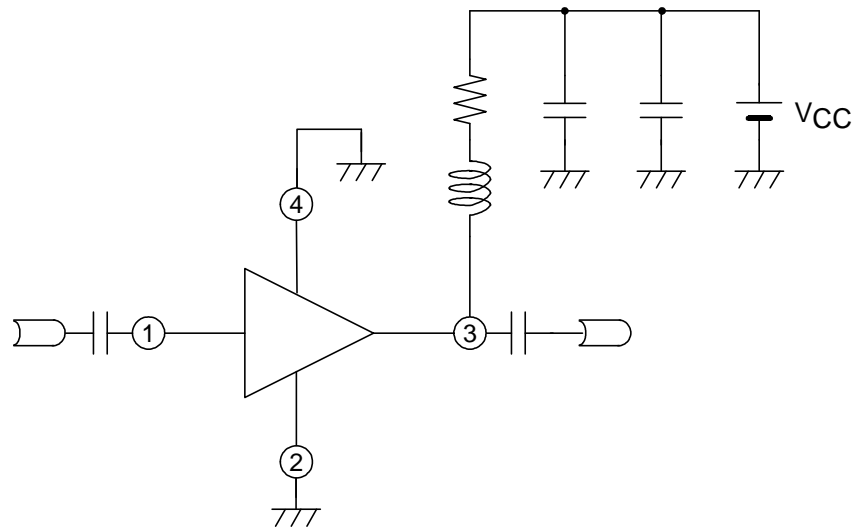
unit : mm

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Block Diagram

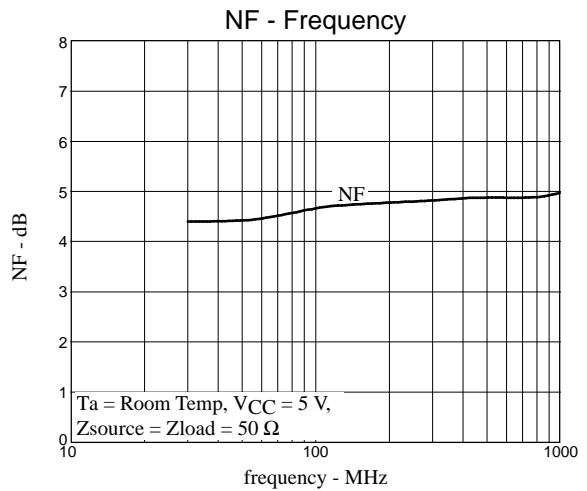
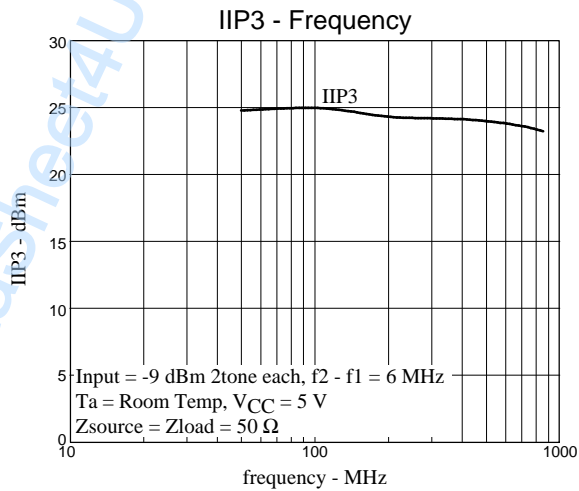
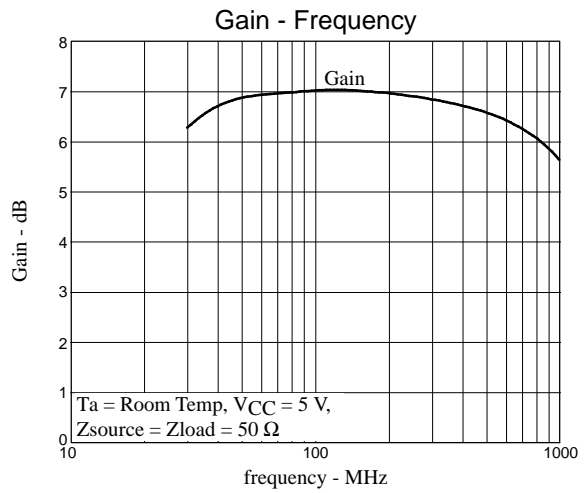
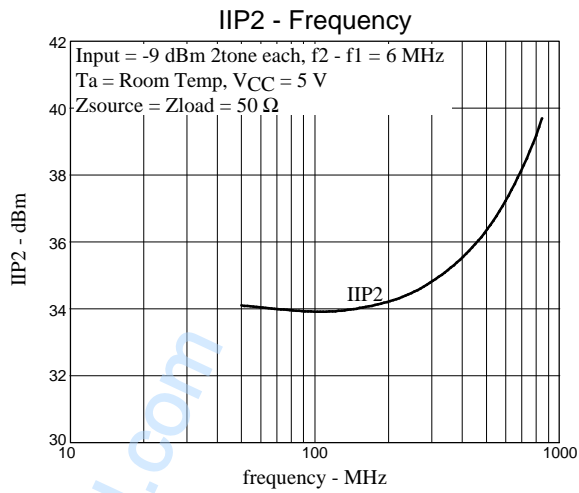
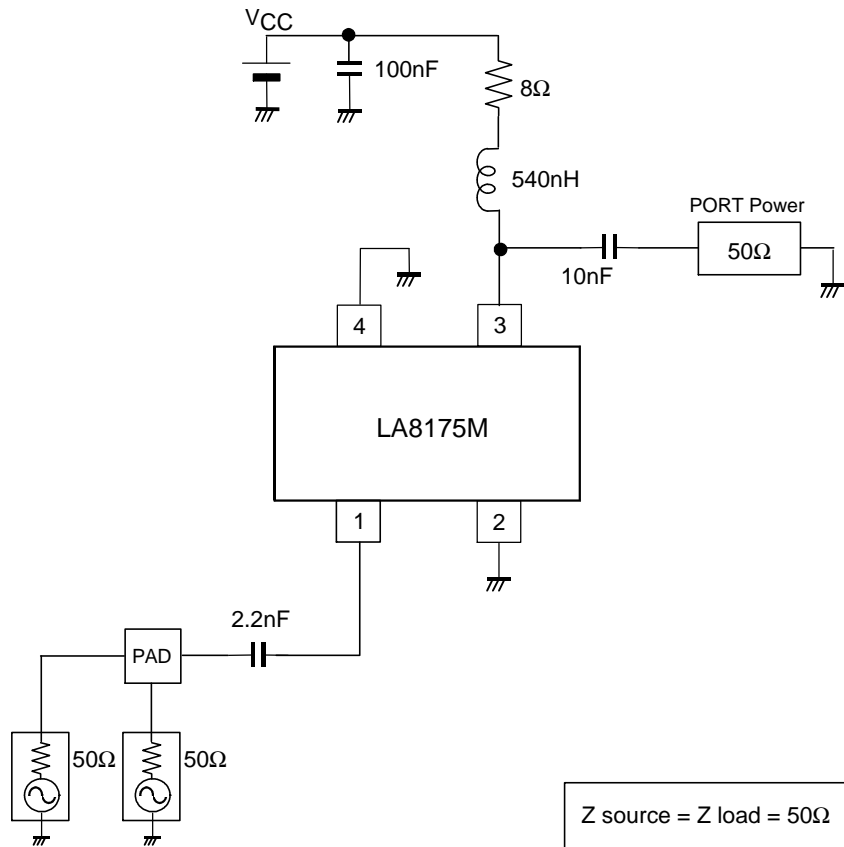


36x19mm

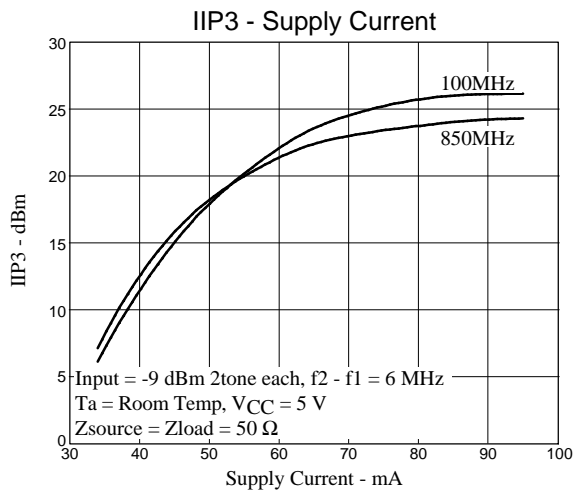
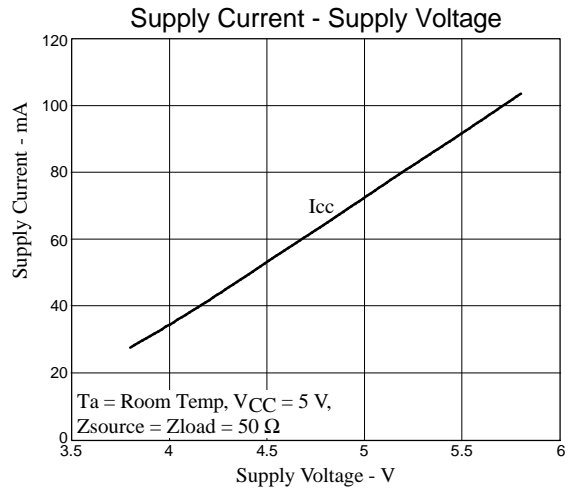
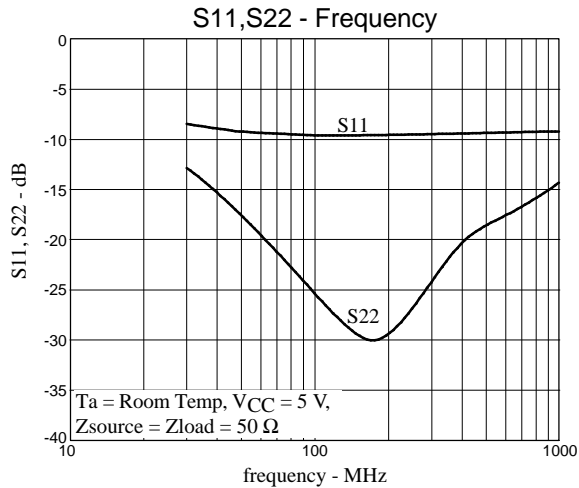
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Test Circuit



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