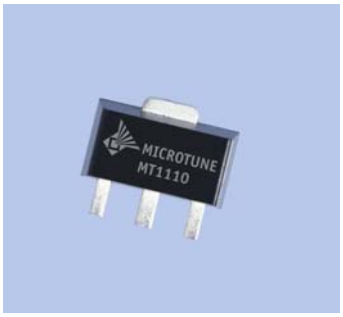
MICROTUNE®

RF SILICON AND SUBSYSTEMS SOLUTIONS
FOR BROADBAND COMMUNICATIONS AND AUTOMOTIVE ELECTRONICS

MT1110 RF AMPLIFIER

PRODUCT BRIEF

The MT1110 RF amplifier is designed for broadband CATV distribution, car TV applications, and infrastructure applications.



MT1110 RF Amplifier

The Microtune MT1110 radio frequency (RF) amplifier is a 75Ω internally matched amplifier designed for broadband CATV distribution, car TV applications, and infrastructure applications.

The MT1110 is built using high-performance silicon-germanium (SiGe) technology and offers 15 dB gain with an industry best noise figure of 3.0 dB. It achieves a third-order intercept point of 80 dBmV while drawing the industry's lowest current, 76 mA, from a single 5V supply.

The MT1110's Darlington circuit topology produces high linearity with very low noise, while maintaining matched input and output impedances. Two AC coupling capacitors, a bias resistor, and an optional inductor are the only external components required.

The MT1110 is available in an SOT-89 package for the extended industrial and automotive temperature range of -40°C to +85°C.

The MT1110 is highly suitable for applications such as car TV antenna amplifiers or splitters for car TV receivers.

APPLICATIONS

- Set-top box
- Home gateways
- CATV broadband distribution
- Cable splitters
- Laser drivers
- Optical receivers
- Car TV antenna amplifiers
- Splitters for car TV receivers
- Wireless data
- PA driver amplifier
- IF amplifier

FEATURES

- Cascadable 75Ω gain block
- 15 dB gain
- 3 dB noise figure
- Unconditionally stable
- 20 dB input return loss
- 1 MHz to 1600 MHz 3 dB bandwidth
- Typical OIP3 at 76 mA is 80 dBmV at 850 MHz
- Single 5V supply
- Adjustable current consumption
- SOT-89 package
- Industry standard pin-out for drop-in compatibility

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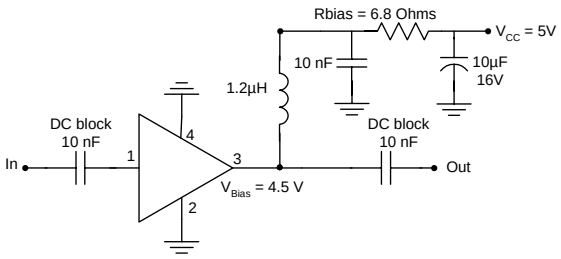
AC ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT
Power gain		15		dB
3 dB gain bandwidth	1		1600	MHz
Noise figure		3		dB
Composite triple beat				
79 channels, output = 25 dBmV/tone		-72		dBc
112 channels, output = 25 dBmV/tone		-71		dBc
132 channels, output = 25 dBmV/tone		-70		dBc
Composite second order (sum)				
79 channels, output = 25 dBmV/tone		-61		dBc
112 channels, output = 25 dBmV/tone		-58		dBc
132 channels, output = 25 dBmV/tone		-53		dBc
Composite second order (difference)				
79 channels, output = 25 dBmV/tone		-54		dBc
112 channels, output = 25 dBmV/tone		-53		dBc
132 channels, output = 25 dBmV/tone		-52		dBc
Cross modulation				
79 channels, output = 25 dBmV/tone		-68		dBc
112 channels, output = 25 dBmV/tone		-65		dBc
132 channels, output = 25 dBmV/tone		-63		dBc

TYPICAL APPLICATION



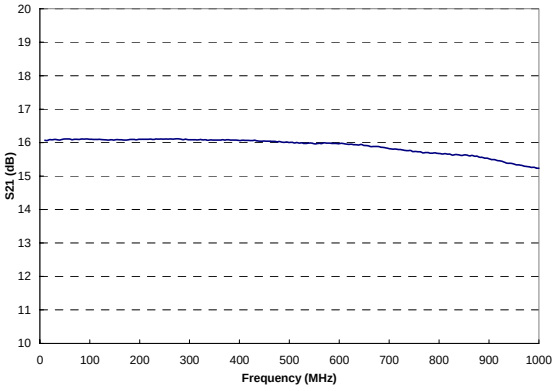


Figure 1 Power Gain vs. Frequency

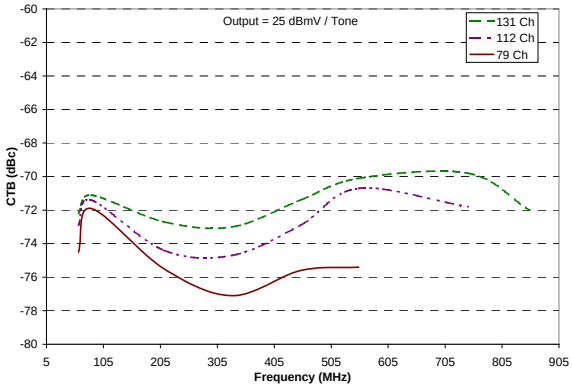


Figure 2 CTB vs. Frequency

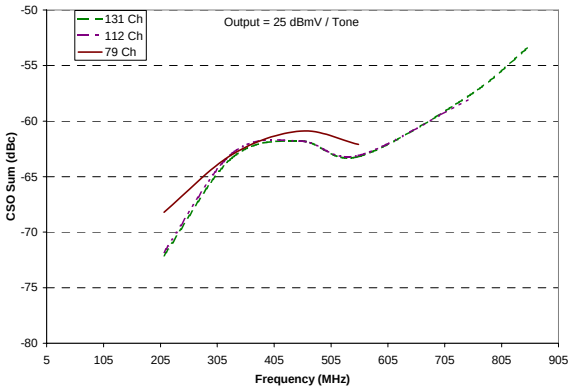


Figure 3 CSO Sum vs. Frequency

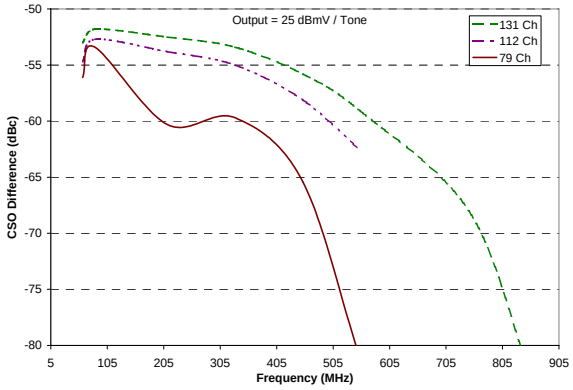


Figure 4 CSO Difference vs. Frequency

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