

ISG52124

5 TO 210 MHz SILICON CATV 24 dB HYBRID AMPLIFIER



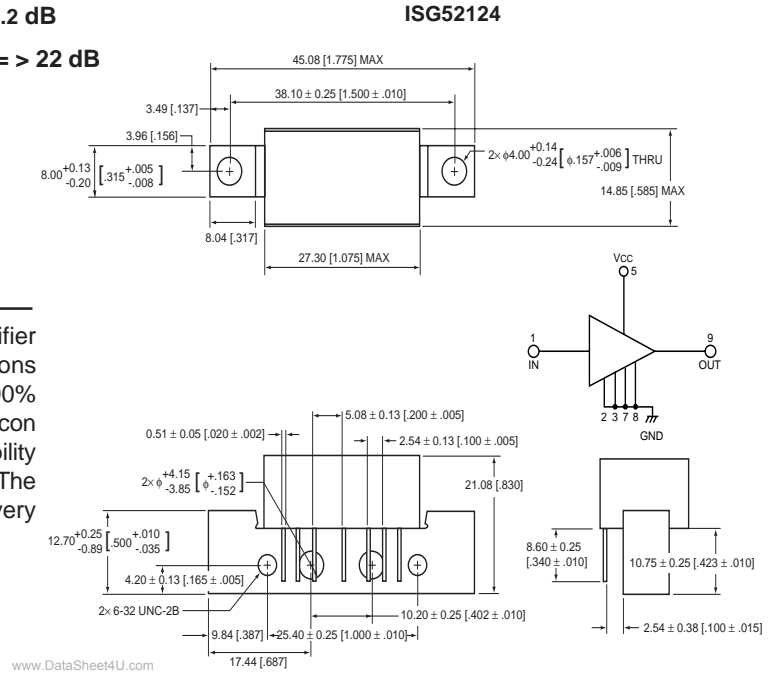
FEATURES

- FLAT GAIN RESPONSE FROM 5 TO 210 MHz: $f = \pm 0.2$ dB
- INPUT AND OUTPUT MATCHING TO 75 OHMS: $R_L = > 22$ dB
- LOW DISTORTION: 78 dBmV
- AUTOMATED SURFACE MOUNT CONSTRUCTION

DESCRIPTION

The ISG52124 is a low Distortion Broadband hybrid amplifier module developed for return path optical and RF applications in (HFC) CATV systems. The ISG52124 is comprised of 100% surface mount components, including high performance silicon transistors. It features excellent noise, gain, and thermal stability across a wide range of operating conditions and frequencies. The amplifiers are manufactured to ISO9002 standards, are very rugged and exhibit excellent unit to unit uniformity.

OUTLINE DIMENSIONS (Units in mm [inches])



ELECTRICAL CHARACTERISTICS ($V_{CC} = 24$ V, $\pm 10\%$, $T_A = 25^\circ\text{C}$, 75 Ohm System)

PART NUMBER			ISG52124		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
V_{CC}	Supply Voltage	V		24	
I_{OP}	Operating Current	mA	185	193	200
BW	Bandwidth	MHz	5		210
G_A	Gain at $f = 42$ MHz	dB	23.5	24	24.5
ΔG	Gain Flatness	dB			± 0.2
R_{LIN}	Input Return Loss	dB	18	22	
R_{LOUT}	Output Return Loss	dB	18	22	
NF	Noise Figure at $f = 65$ MHz	dB		4.5	5
P_{1dB}	Output Power at 1 dB Gain Compression Point	dBmV	77	78	
CTB	Composite Triple Beat ¹ (+50 dBmV/ch)	dBc		-70	-67
XM	Cross Modulation ¹ (+50 dBmV/ch)	dBc		-62	-59
CSO	2nd Order Distortion ¹ (+50 dBmV/ch)	dBc		-70	-67
	Characteristic Impedance	ohms		75	

Note:

1. Composite Triple Beat, Cross Modulation, 2nd Order Distortion are all measured with 22 channels (T7-T13,2-6,A-7) at 50 dBmV/ch output and at 25°C.

Performance tests and ratings for Sirenza Microdevices' products were performed internally by Sirenza and measured using specific computer systems and/or components and reflect the approximate performance of the products as measured by those tests. Any difference in circuit implementation, test software, or test equipment may affect actual performance. The information provided herein is believed to be reliable at press time and Sirenza Microdevices assumes no responsibility for the use of this information. All such use shall be entirely at the user's own risk. Prices and specifications for Sirenza Microdevices' products are subject to change without notice. Buyers should consult Sirenza Microdevices' standard terms and conditions of sale for Sirenza's limited warranty with regard to its products. No patent rights or licenses to any of the circuits described herein are implied or granted to any third party. Sirenza Microdevices does not authorize or warrant any product for use in life-support devices and/or systems.

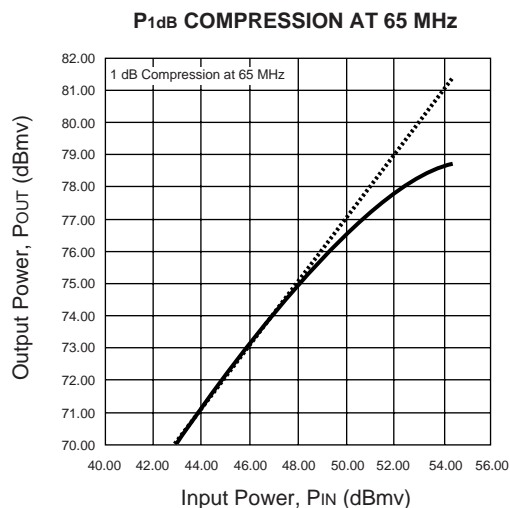
ABSOLUTE MAXIMUM RATINGS¹

(T_A = 25 °C unless otherwise noted)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{CC}	DC Supply	V _{DC}	+28
V _{IN}	RF Input Voltage (Single Tone)	dBmV	+65
T _C	Operating Case Temperature Range	°C	-20 to +100
T _{STG}	Storage Temperature Range	°C	-40 to +100

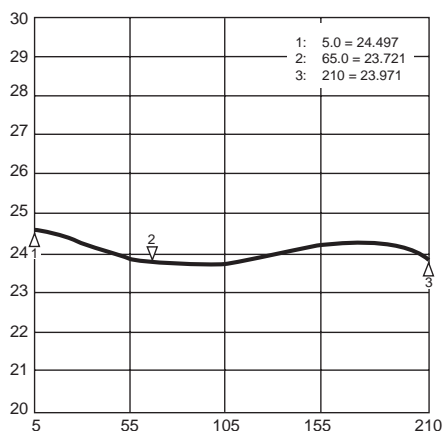
Note:

1. Operation in excess of any one of these parameters may result in permanent damage.

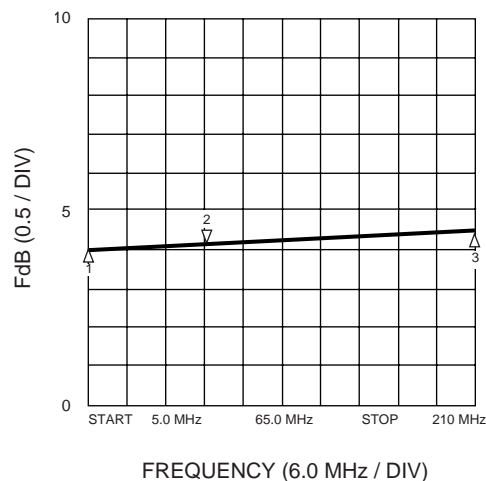


TYPICAL PERFORMANCE CURVES (T_A = 25°C)

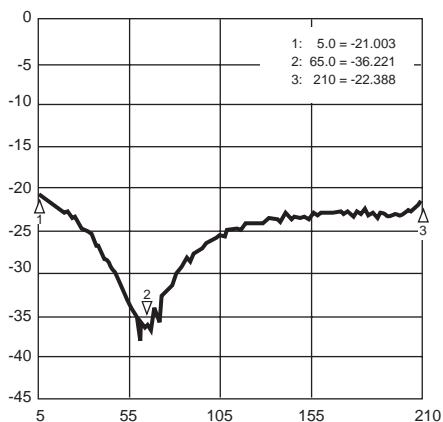
GAIN VS. FREQUENCY



NOISE FIGURE



INPUT RETURN LOSS



OUTPUT RETURN LOSS

