

5 TO 210 MHz SILICON CATV 24 dB LOW POWER HYBRID AMPLIFIER

FEATURES

OUTLINE DIMENSIONS (Units in mm [inches])

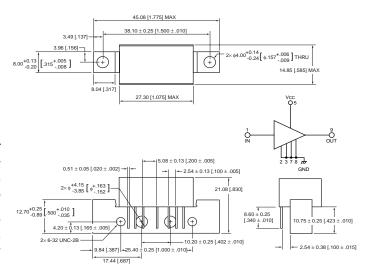
FLAT GAIN RESPONSE FROM 5 TO 210 MHz; f = ±0.25 dB

ISG52124-L

- INPUT AND OUTPUT MATCHING TO 75 OHMS: RL = > 18 dB
- LOW VOLTAGE = 12V
- LOW CURRENT 90 mA TYP
- AUTOMATED SURFACE MOUNT CONSTRUCTION

DESCRIPTION

The ISG52124-L is a low Power 12V Broadband hybrid amplifier module developed for return path optical and RF applications in (HFC) CATV systems. The ISG52124-L 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.



ELECTRICAL CHARACTERISTICS (Vcc = 12 V, ± 10%, TA = 25°C, 75 Ohm System)

PART NUMBER		ISG52124-L		
PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
Supply Voltage	V		12	
Operating Current	mA	80	90	120
Bandwidth	MHz	5		210
Gain at f = 42 MHz	dB	23.5	24	24.5
Gain Flatness	dB			±0.25
Input Return Loss	dB		18	
Output Return Loss	dB		18	
Noise Figure at f = 65 MHz	dB		4.5	5
Output Power at 1 dB Gain Compression Point	dBmV	70	72	
Composite Triple Beat ¹ (+50 dBmV/ch)	dBc		-63	-60
Cross Modulation ¹ (+50 dBmV/ch)	dBc		-56	-53
2nd Order Distortion ¹ (+50 dBmV/ch)	dBc		-66	-62
Characteristic Impedance	ohms		75	
	PARAMETERS AND CONDITIONS Supply Voltage Operating Current Bandwidth Gain at f = 42 MHz Gain Flatness Input Return Loss Output Return Loss Noise Figure at f = 65 MHz Output Power at 1 dB Gain Compression Point Composite Triple Beat¹ (+50 dBmV/ch) Cross Modulation¹ (+50 dBmV/ch) 2nd Order Distortion¹ (+50 dBmV/ch)	PARAMETERS AND CONDITIONS Supply Voltage V Operating Current mA Bandwidth MHz Gain at f = 42 MHz dB Gain Flatness dB Input Return Loss dB Output Return Loss dB Noise Figure at f = 65 MHz dB Output Power at 1 dB Gain Compression Point dBmV Composite Triple Beat¹ (+50 dBmV/ch) dBc Cross Modulation¹ (+50 dBmV/ch) dBc 2nd Order Distortion¹ (+50 dBmV/ch) dBc	PARAMETERS AND CONDITIONS UNITS MIN Supply Voltage V V Operating Current mA 80 Bandwidth MHz 5 Gain at f = 42 MHz dB 23.5 Gain Flatness dB Input Return Loss Output Return Loss dB Input Return Loss Noise Figure at f = 65 MHz dB Input Return Loss Noise Figure at f = 65 MHz dB Input Return Loss Output Power at 1 dB Gain Compression Point dB 70 Composite Triple Beat¹ (+50 dBmV/ch) dBc Input Cross Modulation¹ (+50 dBmV/ch) Cons Modulation¹ (+50 dBmV/ch) dBc Input Cross Modulation¹ (+50 dBmV/ch)	PARAMETERS AND CONDITIONS UNITS MIN TYP Supply Voltage V 12 Operating Current mA 80 90 Bandwidth MHz 5 Gain at f = 42 MHz dB 23.5 24 Gain Flatness dB 18 Input Return Loss dB 18 Output Return Loss dB 18 Noise Figure at f = 65 MHz dB 4.5 Output Power at 1 dB Gain Compression Point dBmV 70 72 Composite Triple Beat¹ (+50 dBmV/ch) dBc -63 Cross Modulation¹ (+50 dBmV/ch) dBc -56 2nd Order Distortion¹ (+50 dBmV/ch) dBc -66

Note:

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4/1/2005

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

ABSOLUTE MAXIMUM RATINGS¹

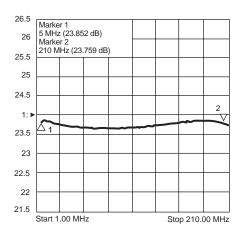
(TA = 25 °C unless otherwise noted)

SYMBOLS	PARAMETERS	UNITS	RATINGS
Vcc	DC Supply	VDC	+28
Vin	RF Input Voltage (Single Tone)	dBmV	+65
Tc	Operating Case Temperature Range	°C	-20 to +100
Тѕтс	Storage Temperature Range	°C	-40 to +100

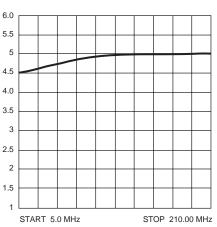
Note:

TYPICAL PERFORMANCE CURVES (TA = 25°C)

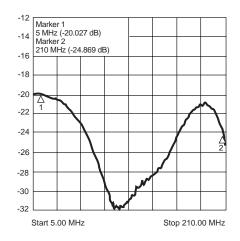
GAIN vs. FREQUENCY



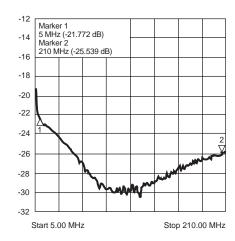
NOISE FIGURE



INPUT RETURN LOSS



OUTPUT RETURN LOSS



2

4/1/2005

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