

ISG52124

5 TO 210 MHz SILICON CATV 24 dB HYBRID AMPLIFIER



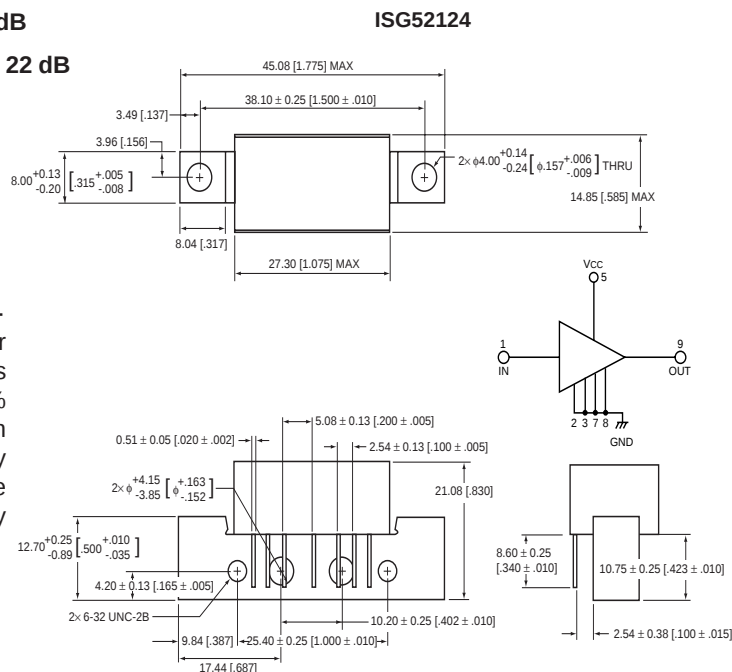
FEATURES

- 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 .

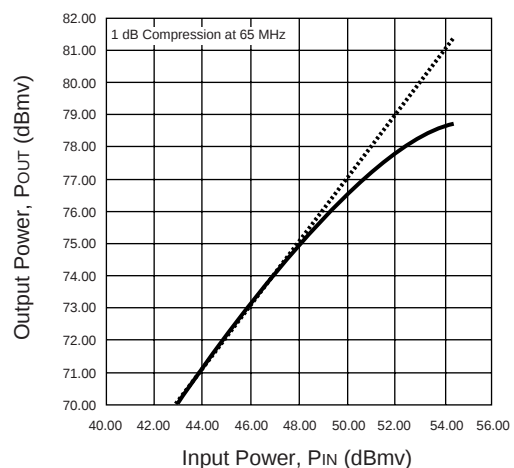
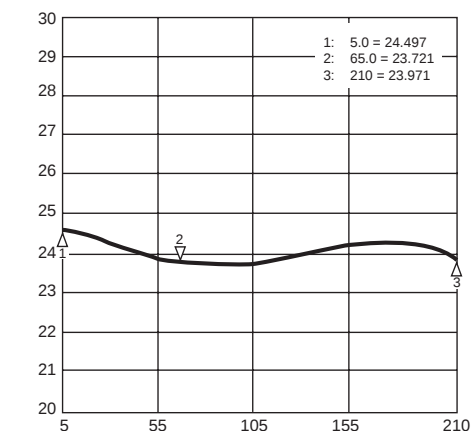
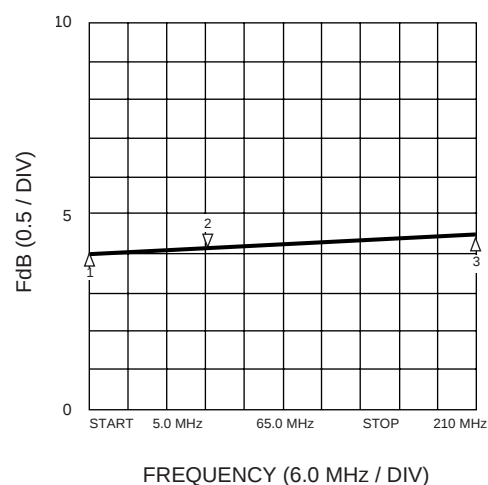
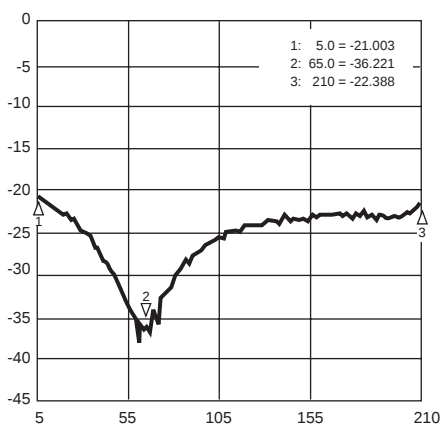
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ABSOLUTE MAXIMUM RATINGS¹(T_A = 25 °C unless otherwise noted)

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:

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

TYPICAL PERFORMANCE CURVES (T_A = 25°C)**P_{1dB} COMPRESSION AT 65 MHz****GAIN VS. FREQUENCY****NOISE FIGURE****INPUT RETURN LOSS****OUTPUT RETURN LOSS**