ISG52124

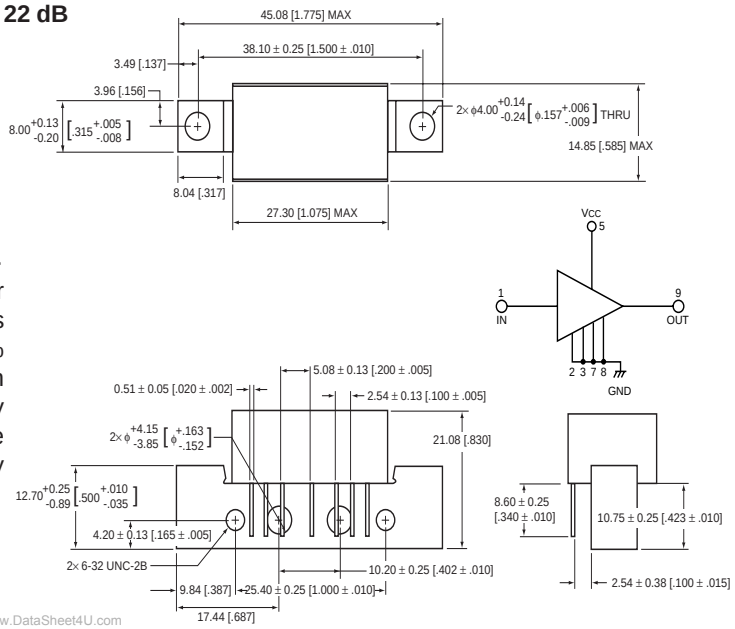
5 TO 210 MHz SILICON CATV 24 dB HYBRID AMPLIFIER

FEATURES

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

OUTLINE DIMENSIONS (Units in mm [inches])

ISG52124



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.

ELECTRICAL CHARACTERISTICS (V_{CC} = 24 V, ± 10%, T_A = 25°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
RL_{IN}	Input Return Loss	dB	18	22	
RL_{OUT}	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.

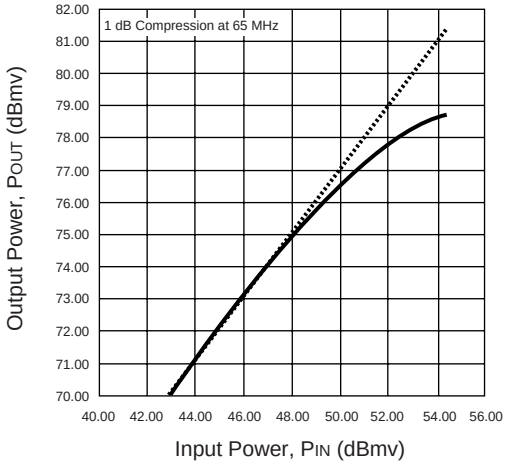
ABSOLUTE MAXIMUM RATINGS[1]

(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

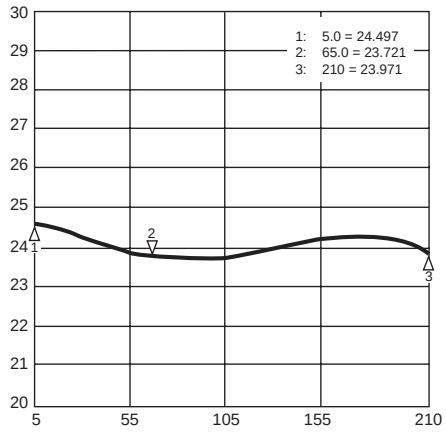
Note:
1. Operation in excess of any one of these parameters may result in permanent damage.

P_{1dB} COMPRESSION AT 65 MHz

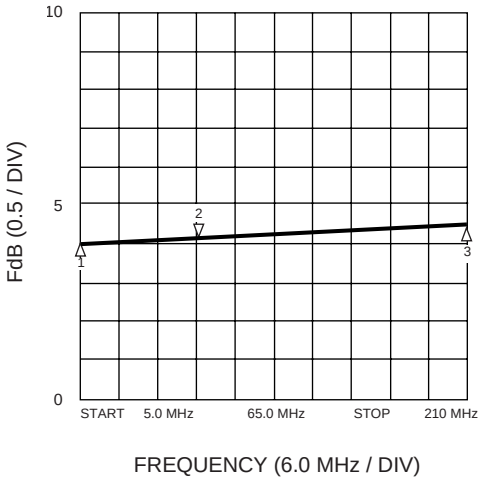


TYPICAL PERFORMANCE CURVES (T_A = 25°C)

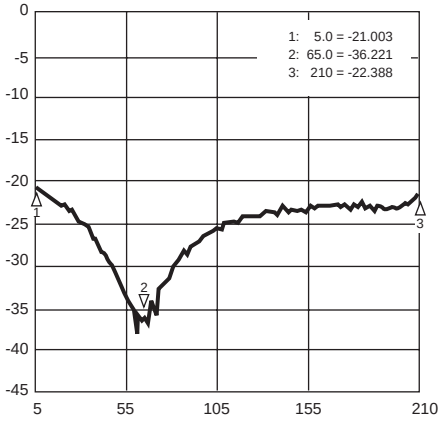
GAIN VS. FREQUENCY



NOISE FIGURE



INPUT RETURN LOSS



OUTPUT RETURN LOSS