ISG56527

5 TO 65 MHz SILICON CATV 27 dB HYBRID AMPLIFIER

FEATURES

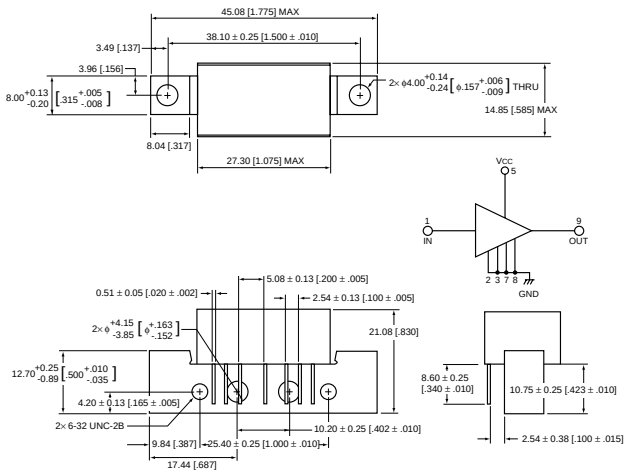
- **FLAT RESPONSE FROM 5 TO 65 MHz:**
  ± 0.15 dB
- **EXCELLENT RETURN LOSS AND STABILITY:**
  R_L = ≥ 20 dB
- **LOW DISTORTION:**
  P_{1dB} = 78 dBmV
- **RUGGED SURFACE MOUNT CONSTRUCTION**

DESCRIPTION

The ISG56527 is a hybrid amplifier module developed for digital return path applications in (HFC) CATV systems. 100% surface mount components are used in the construction of this amplifier. The active devices used are high performance NEC silicon transistors. The amplifiers are manufactured to ISO9002 standards and exhibit excellent unit to unit uniformity.

OUTLINE DIMENSIONS (Units in mm [inches])

ISG56527



ELECTRICAL CHARACTERISTICS (V_{CC} = 24 V, ± 10%, T_{CASE} = 25°C, 75 Ω system)

PART NUMBER				ISG56527		
SYMBOLS	**PARAMETERS**	**CONDITIONS**	**UNITS**	**MIN**	**TYP**	**MAX**
	Frequency Range	Min (f_L) to Max(f_H)+5%	MHz	5		65
G	Gain at +25°C	F_L to F_H	dB	26.5	27.0	28.0
G	Gain at -20°C to +100°C	F_L to F_H	dB	26.0	26.5	28.0
G_F	Gain Flatness	F_L to F_H	dB		±0.15	±0.2
RL_{IN}	Input Return Loss	F_L to F_H	dB	20	21	
RL_{OUT}	Output Return Loss	F_L to F_H	dB	20	21	
NF	Noise Figure	10-65 MHz	dB		3.1	3.4
CTB	Composite Triple Beat	See Note 1	dBc		-77	-70
X_M	Cross Modulation	See Note 1	dBc		-62	-60
CSO	Composite 2nd Order Distortion	See Note 1	dBc		-75	-72
	RF_{IN} to DC and DC to RF_{OUT}	0.3 MHz-5 MHz	dB			-10
P_{1dB}	Output Level at 1 dB Gain Compression	F_L to F_H	dBmV		78	
V_{CC}	Supply Voltage		V		24	
I_{OP}	Operating Current at +25°C		mA	180	192	205
	at -20°C to +100°C				216	225
Ω	Input & Output Impedance		ohms		75	

Note:
1. Composite Triple Beat, Cross Modulation and 2nd Order Distortion are all measured with 6 channels (T6 through T12) at 50 dBmV/ch output and at 25°C.

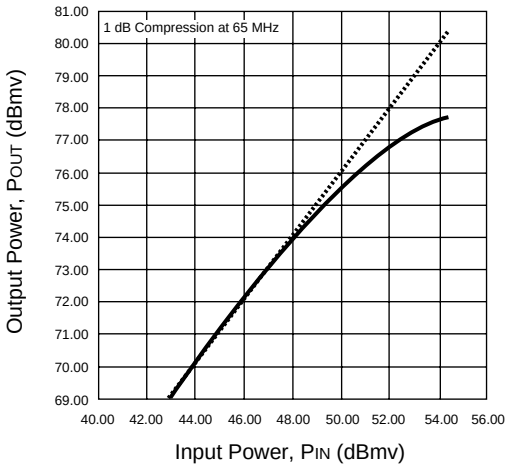
ABSOLUTE MAXIMUM RATINGS[1]

(T_C = 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

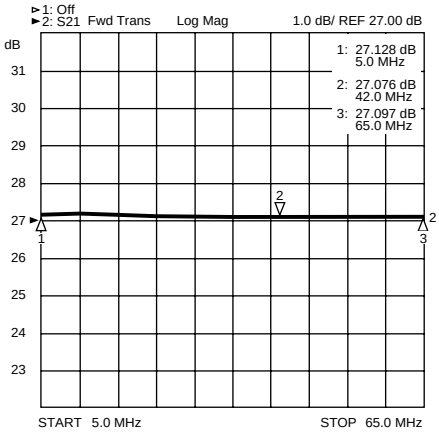
Note:
1. Operation in excess of any one of these parameters may result in permanent damage.

P1dB COMPRESSION AT 65 MHz

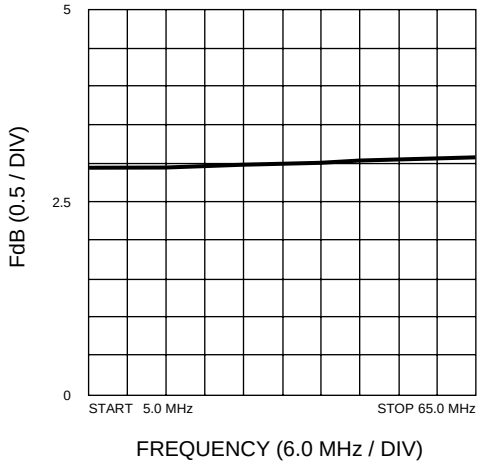


TYPICAL PERFORMANCE CURVES (T_A = 25°C)

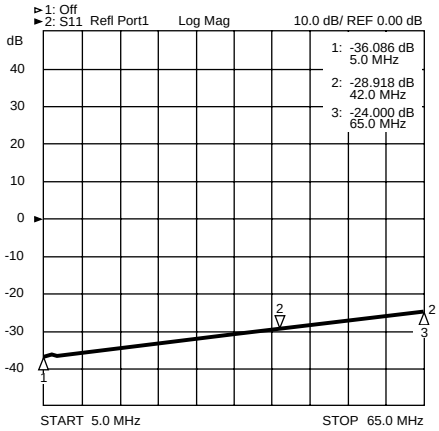
GAIN VS. FREQUENCY



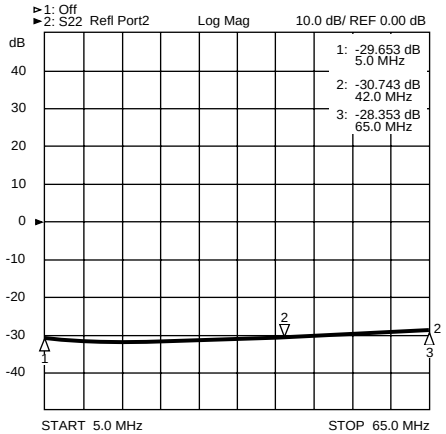
NOISE FIGURE



INPUT RETURN LOSS



OUTPUT RETURN LOSS



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