ISG56526

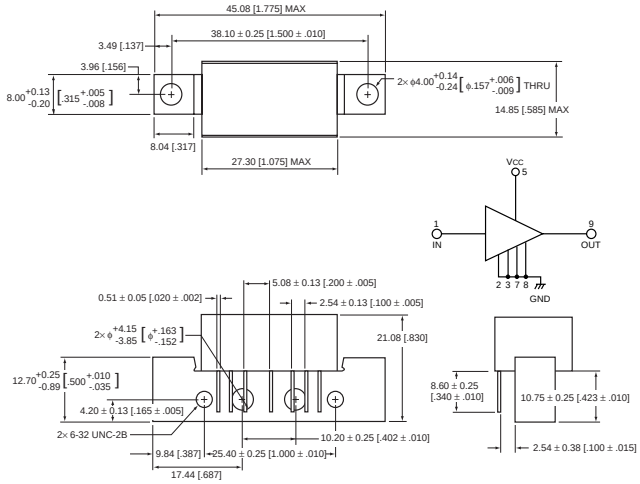
5 TO 65 MHz SILICON CATV 26 dB HYBRID AMPLIFIER

FEATURES

- **FLAT GAIN RESPONSE FROM 5 TO 65 MHz: f = ±0.2 dB**
- **INPUT AND OUTPUT MATCHING TO 75 OHMS: RL = > 19 dB**
- **LOW DISTORTION: P1dB = 78 dBmV**
- **LOW NOISE: 3.0dB**
- **AUTOMATED SURFACE MOUNT CONSTRUCTION**

OUTLINE DIMENSIONS (Units in mm [inches])

ISG56526



DESCRIPTION

The ISG56526 is a low noise, low distortion hybrid amplifier specified for use in return path HFC Cable TV applications. The ISG56526 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 Ω System)

PART NUMBER				ISG56526		
SYMBOLS	**PARAMETERS**	**CONDITIONS**	**UNITS**	**MIN**	**TYP**	**MAX**
	Frequency Range	Min (f_L) to Max (f_H) +5%	MHz	5		65
G	Gain (S_{21})	F_H = 65 MHz	dB	24.9	25.5	26.4
G_F	Gain Flatness	F_L to F_H	dB		±0.15	±0.2
RL_{IN}	Input Return Loss (S_{11})	5-10 MHz	dB	29	35	
RL_{IN}	Input Return Loss (S_{11})	11-65 MHz	dB	19	21	
RL_{OUT}	Output Return Loss	5-10 MHz	dB	24	25	
RL_{OUT}	Output Return Loss	11-65 MHz	dB	19	15	
NF	Noise Figure	5-65 MHz NF	dB		3.0	3.3
	Reverse Isolation (S_{12})	RF_{OUT} to RF_{IN}, over F_H to F_L	dB		29	
CTB	Composite Triple Beat	See Note 1	dBc			-70
XM	Cross Modulation	See Note 1	dBc			-60
CSO	Composite 2nd Order Distortion	See Note 1	dBc			-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	Single tone at any channel frequency	dBmV		78	
V_{CC}	Supply Voltage		V		24	
I_{OP}	Operating Current		mA	180	190	200
Ω	Input & Output Impedance		ohms		75	

Note:

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

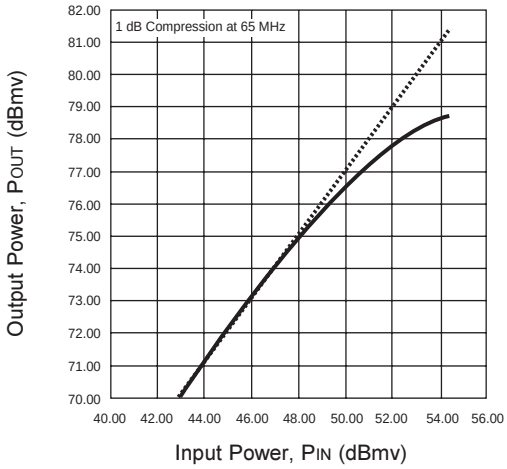
ABSOLUTE MAXIMUM RATINGS[1]

(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

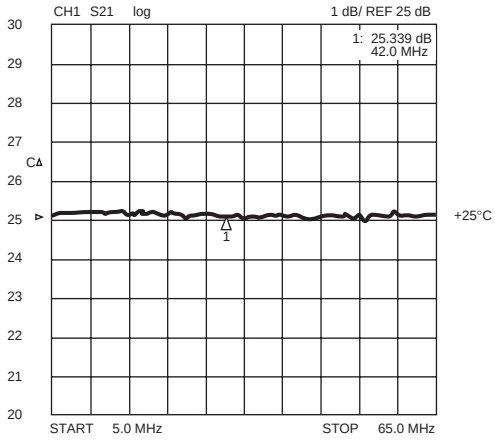
Note:
1. Operation in excess of any one of these parameters may result in permanent damage.

power in vs power out @ 65 MHz

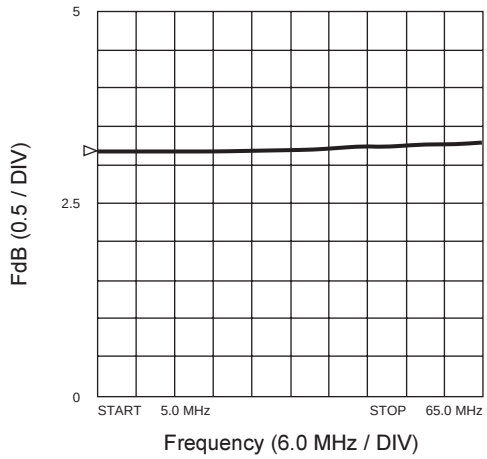


TYPICAL PERFORMANCE CURVES (T_A = 25°C)

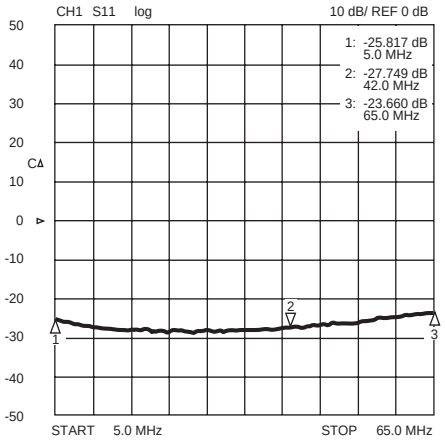
GAIN vs. FREQUENCY



NOISE FIGURE



INPUT RETURN LOSS



OUTPUT RETURN LOSS