

# ISG56518



## 5 TO 65 MHz SILICON CATV 18 dB HYBRID AMPLIFIER

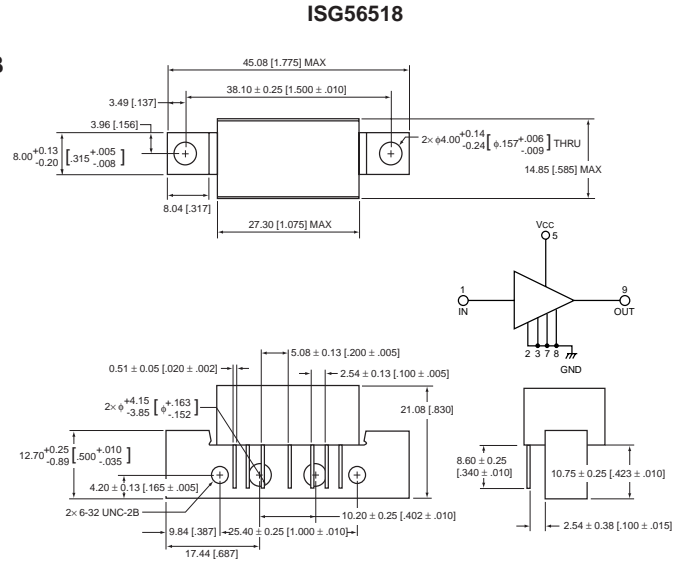
### FEATURES

- FLAT GAIN RESPONSE FROM 5 TO 65 MHz:  $f = \pm 0.2$  dB
- INPUT AND OUTPUT MATCHING TO 75 OHMS:  $R_L = > 22$  dB
- LOW DISTORTION:  $P_{1dB} = 78$  dBmV
- LOW NOISE: 3.9dB
- AUTOMATED SURFACEMOUNT CONSTRUCTION

### DESCRIPTION

The ISG56518 is a low noise, low distortion hybrid amplifier specified for use in return path HFC Cable TV applications. The ISG56518 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			ISG56518		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
GA	Gain at $f = 42$ MHz	dB	18	18.2	18.4
$\Delta G$	Gain Flatness	dB			$\pm 0.15$
RLIN	Input Return Loss	dB	22	25	
RLOUT	Output Return Loss	dB	20	22	
NF	Noise Figure	dB		3.9	4.5
CTB	Composite Triple Beat <sup>1</sup> (+50 dBmV/ch)	dBc		-68	-63
XM	Cross Modulation <sup>1</sup> (+50 dBmV/ch)	dBc		-58	-54
CSO	Composite 2nd Order Distortion <sup>1</sup> (+50 dBmV/ch)	dBc		-75	-69
$P_{1dB}$	Output Power at 1 dB Gain Compression Point	dBmV		72	
VCC	Supply Voltage	V		24	
IOP	Operating Current	mA	95	110	130
BW	Bandwidth	MHz	5		65
$\Omega$	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.

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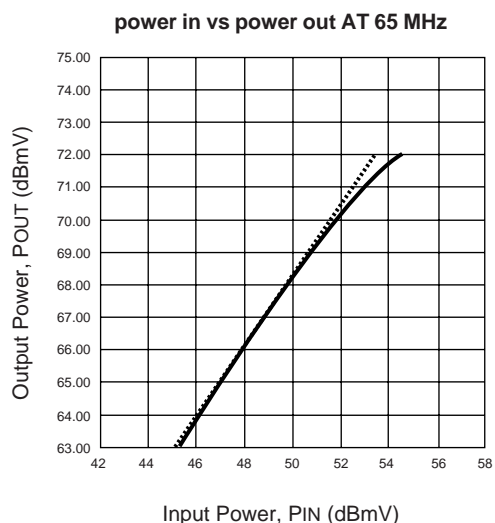
### ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

(TA = 25 °C unless otherwise noted)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V <sub>CC</sub>	DC Supply	V <sub>DC</sub>	+28
V <sub>IN</sub>	RF Input Voltage (Single Tone)	dBmV	+65
T <sub>C</sub>	Operating Case Temperature Range	°C	-20 to +100
T <sub>STG</sub>	Storage Temperature Range	°C	-40 to +100

Note:

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



### TYPICAL PERFORMANCE CURVES (TA = 25°C)

