

Gallium Arsenide CATV Amplifier Module

Features

- Specified for 79- and 112-Channel Loading
- Excellent Distortion Performance
- Higher Output Capability
- Built-in Input Diode Protection
- GaAs FET Transistor Technology
- Unconditionally Stable Under All Load Conditions
- Output Port Ring Wave Protection

Applications

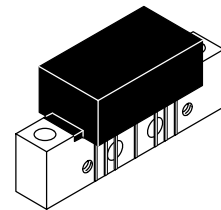
- CATV Systems Operating in the 47 to 870 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications

Description

- 24 Vdc Supply, 47 to 870 MHz, CATV GaAs Forward Power Doubler Amplifier Module
- Replaced MHW8188A. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

MHW8188AN

**870 MHz
20.3 dB GAIN
112-CHANNEL
GaAs CATV AMPLIFIER MODULE**



CASE 1302-01, STYLE 1

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+75	dBmV
DC Supply Voltage	V_{CC}	+26	Vdc
Operating Case Temperature Range	T_C	-20 to +100	°C
Storage Temperature Range	T_{stg}	-40 to +100	°C

Table 2. ESD Maximum Ratings

Rating	Input Value	Output Value	Unit
Surge Voltage per IEC 1000-4-5	300	300	V
Human Body Model per Mil. Std. 1686	2	2	kV

Table 3. Electrical Characteristics ($V_{CC} = 24$ Vdc, $T_C = +45^\circ\text{C}$, 75 Ω system unless otherwise noted)

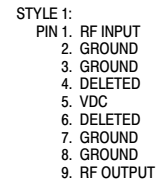
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	47	—	870	MHz
Power Gain 870 MHz	G_p	19.7	20.3	20.9	dB
Slope 47-870 MHz	S	0	0.5	1.0	dB
Gain Flatness (47-870 MHz, Peak-to-Valley)	G_F	—	—	0.5	dB
Return Loss — Input ($Z_o = 75$ Ohms)	IRL	20 18 16	— — —	— — —	dB
Return Loss — Output ($Z_o = 75$ Ohms)	ORL	20 18	— —	— —	dB

Table 3. Electrical Characteristics ($V_{CC} = 24 \text{ Vdc}$, $T_C = +45^\circ\text{C}$, 75Ω system unless otherwise noted) **(continued)**

Characteristic		Symbol	Min	Typ	Max	Unit
Composite Second Order ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +56 \text{ dBmV @ 870 MHz Equiv}$) ($V_{out} = +58 \text{ dBmV @ 870 MHz Equiv}$)	112-Channel FLAT	CSO_{112}	—	-66	-64	dBc
	79-Channel FLAT	CSO_{79}	—	-70	-68	
	112-Channel, 12 dB Tilt	CSO_{112}	—	-65	-63	
	79-Channel, 12 dB Tilt	CSO_{79}	—	-69	-67	
Cross Modulation Distortion @ Ch 2 ($V_{out} = +48 \text{ dBmV/ch.}$, FM = 55.25 MHz) ($V_{out} = +48 \text{ dBmV/ch.}$, FM = 55.25 MHz) ($V_{out} = +56 \text{ dBmV @ 870 MHz Equiv}$) ($V_{out} = +58 \text{ dBmV @ 870 MHz Equiv}$)	112-Channel FLAT	XMD_{112}	—	-58	-56	dBc
	79-Channel FLAT	XMD_{79}	—	-61	-59	
	112-Channel, 12 dB Tilt	XMD_{112}	—	-53	-51	
	79-Channel, 12 dB Tilt	XMD_{79}	—	-60	-47	
Composite Triple Beat ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +56 \text{ dBmV @ 870 MHz Equiv}$) ($V_{out} = +58 \text{ dBmV @ 870 MHz Equiv}$)	112-Channel FLAT	CTB_{112}	—	-60	-58	dBc
	79-Channel FLAT	CTB_{79}	—	-66	-64	
	112-Channel, 12 dB Tilt	CTB_{112}	—	-57	-55	
	79-Channel, 12 dB Tilt	CTB_{79}	—	-63	-61	
Noise Figure	50 MHz	NF	—	4.5	—	dB
	550 MHz		—	4.5	—	
	750 MHz		—	4.5	—	
	870 MHz		—	4.5	—	
DC Current ($V_{DC} = 24 \text{ V}$, $T_C = 45^\circ\text{C}$)		I_{DC}	410	425	440	mA

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