

The RF Line

Gallium Arsenide

CATV Amplifier Module

Features

- Specified for 79-, 112- and 132-Channel Loading
- Excellent Distortion Performance
- Integrated ESD Protection Diodes
- GaAs FET Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

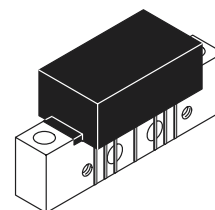
- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications

Description

- 24 Vdc Supply, 40 to 870 MHz, CATV GaAs Forward Amplifier Module

MHW9236

870 MHz
23.8 dB GAIN
132-CHANNEL
GaAs CATV AMPLIFIER MODULE



CASE 1302-01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+65	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

ESD MAXIMUM RATINGS

Rating	Input Value	Output Value	Unit
Surge Voltage per IEC 1000-4-5	200	200	V
Human Body Model per Mil. Std. 1686	2	2	kV

ELECTRICAL CHARACTERISTICS ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	870	MHz
Power Gain 870 MHz	G_p	23	23.8	24.3	dB
Slope 40-870 MHz	S	0	0.55	1.2	dB
Gain Flatness (40-870 MHz, Peak-to-Valley)	G_F	—	—	0.8	dB
Return Loss — Input ($Z_o = 75$ Ohms)	IRL	20 18	— —	— —	dB
		40-500 MHz $f > 500$ MHz			

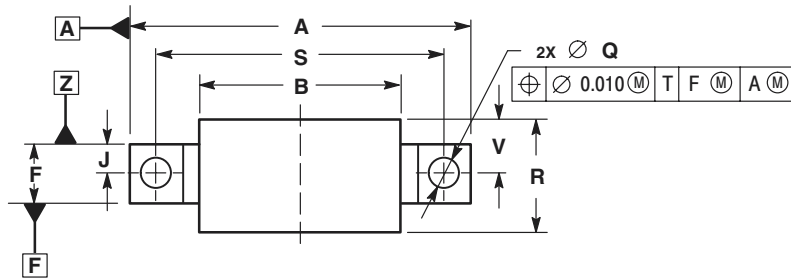


ELECTRICAL CHARACTERISTICS – continued ($V_{CC} = 24 \text{ Vdc}$, $T_C = +30^\circ\text{C}$, 75Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Return Loss — Output ($Z_0 = 75 \text{ Ohms}$)	40–300 MHz 301–750 MHz $f > 750 \text{ MHz}$	ORL	20 19 16	— — —	— — —	dB
Composite Second Order ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +46 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case)	79–Channel FLAT 112–Channel FLAT 132–Channel FLAT	CSO_{79} CSO_{112} CSO_{132}	— — —	–66 –64 –64	–63 –60 –60	dBc
Cross Modulation Distortion @ Ch 2 ($V_{out} = +48 \text{ dBmV/ch.}$, FM = 55.25 MHz) ($V_{out} = +46 \text{ dBmV/ch.}$, FM = 55.25 MHz) ($V_{out} = +44 \text{ dBmV/ch.}$, FM = 55.25 MHz)	79–Channel FLAT 112–Channel FLAT 132–Channel FLAT	XMD_{79} XMD_{112} XMD_{132}	— — —	–57 –57 –57	–50 –50 –50	dBc
Composite Triple Beat ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +46 \text{ dBmV/ch.}$, Worst Case) ($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case)	79–Channel FLAT 112–Channel FLAT 132–Channel FLAT	CTB_{79} CTB_{112} CTB_{132}	— — —	–66 –66 –68	–60 –60 –60	dBc
Noise Figure	50 MHz 550 MHz 750 MHz 870 MHz	NF	— — — —	5.0 5.0 5.0 5.3	6.0 — — 6.5	dB
DC Current ($V_{DC} = 24 \text{ V}$, $T_C = 45^\circ\text{C}$)		I_{DC}	240	255	270	mA

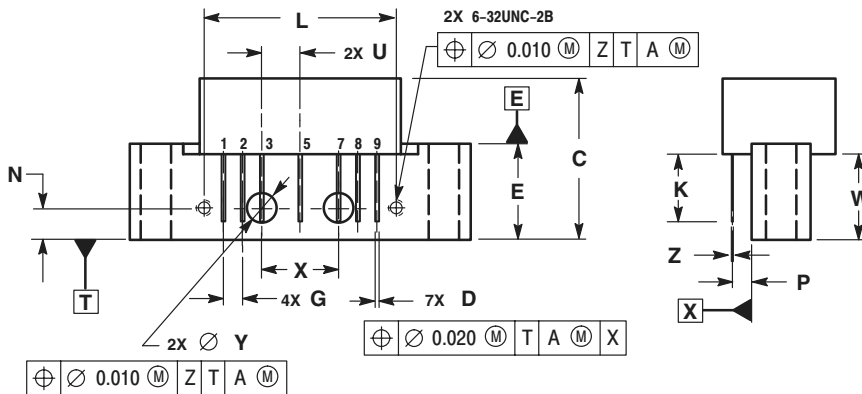
NOTES

PACKAGE DIMENSIONS



- NOTES:
 1. DIMENSIONS ARE IN INCHES.
 2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	---	1.775	---	45.085
B	---	1.085	---	27.559
C	---	0.840	---	21.336
D	0.015	0.021	0.381	0.533
E	0.465	0.510	11.811	12.954
F	0.300	0.325	7.62	8.255
G	0.100 BSC		2.540 BSC	
J	0.156 BSC		3.962 BSC	
K	0.315	0.355	8.001	9.017
L	1.000 BSC		25.400 BSC	
N	0.165 BSC		4.191 BSC	
P	0.100 BSC		2.540 BSC	
Q	0.148	0.168	3.759	4.267
R	---	0.600	---	15.24
S	1.500 BSC		38.100 BSC	
U	0.200 BSC		5.080 BSC	
V	---	0.250	---	6.350
W	0.435	---	11.049	---
X	0.400 BSC		10.160 BSC	
Y	0.152	0.163	3.861	4.140
Z	0.009	0.011	0.229	0.279



- STYLE 1:
 PIN 1: RF INPUT
 2: GROUND
 3: GROUND
 4: DELETED
 5: VDC
 6: DELETED
 7: GROUND
 8: GROUND
 9: RF OUTPUT

CASE 1302-01 ISSUE B

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HOW TO REACH US:

USA/EUROPE/LOCATIONS NOT LISTED:
 Motorola Literature Distribution
 P.O. Box 5405, Denver, Colorado 80217
 1-800-521-6274 or 480-768-2130

JAPAN: Motorola Japan Ltd.; SPS, Technical Information Center,
 3-20-1, Minami-Azabu, Minato-ku, Tokyo 106-8573, Japan
 81-3-3440-3569

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre,
 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong
 852-2668334

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MHW9236/D