

The RF Line

CATV Amplifier Module

MHW1346

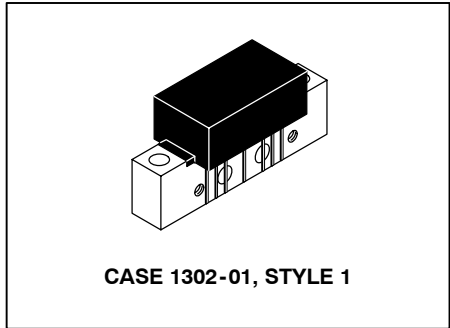
Features

- Specified for 22- and 26-Channel Loading
- Excellent Distortion Performance
- Superior Gain, Return Loss and DC Current Stability over Temperature
- Capable of Handling Multiple Channels in the Return Path with Good Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

**5- 200 MHz, 35 dB GAIN
26-CHANNEL
CATV HIGH-SPLIT
REVERSE AMPLIFIER
MODULE**

Applications

- CATV Systems Operating in the 5 to 200 MHz Frequency Range
- Designed for Broadband Applications Requiring Low Distortion Characteristics
- Specified for Use as a Return Path Amplifier for Low-, Mid- and High-Split 2-Way Cable TV Systems



Description

- 24 Vdc Supply, 5 to 200 MHz, CATV Reverse Amplifier Module

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+ 65	dBmV
DC Supply Voltage	V_{CC}	+ 28	Vdc
Operating Case Temperature Range	T_C	- 20 to +100	°C
Storage Temperature Range	T_{stg}	- 40 to +100	°C

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

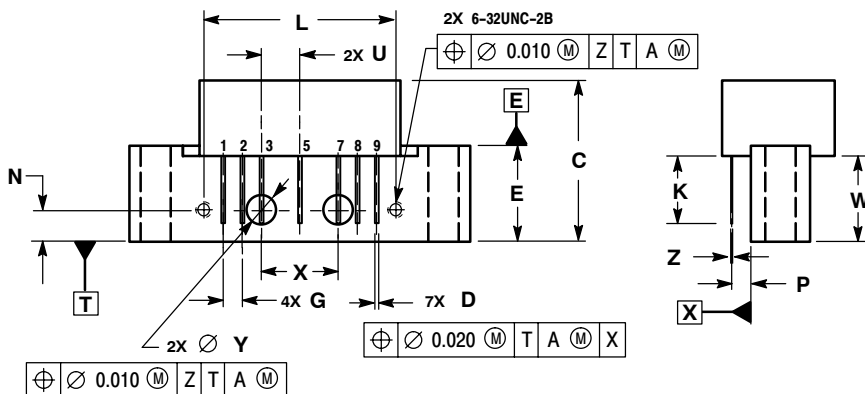
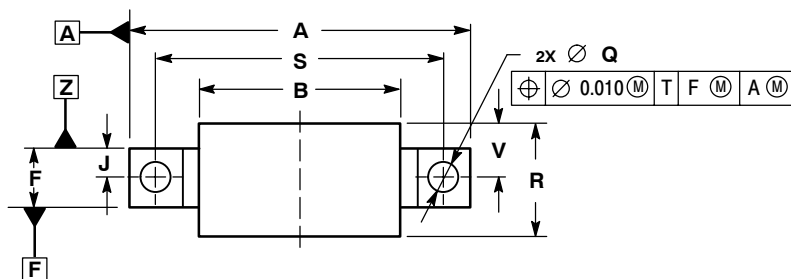
Characteristic	Symbol	Min	Typ	Max	Unit
Bandwidth All	BW	5	—	200	MHz
Power Gain (f = 5 MHz)	G_p	34.5	35	35.8	dB
Slope (5-200 MHz)	S	0	—	1.0	dB
Gain Flatness (Peak To Valley) (5-200 MHz)	G_F	—	0.6	1	dB
Return Loss — Input/Output	IRL/ORL				dB
(@ f = 5-65 MHz)		20	24	—	
(@ f = 65-200 MHz)		16	20	—	
Composite Second Order ($V_{out} = +50$ dBmV per Ch., Worst Case)					dBc
5-175 MHz 22-Channel FLAT	CSO_{22}	—	-76	-72	
5-200 MHz 26-Channel FLAT	CSO_{26}	—	-75	—	

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

Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion ($V_{out} = +50$ dBmV per Ch., Worst Case)					dBc
	22-Channel FLAT	—	- 64	- 60	
26-Channel FLAT	XMD ₂₆	—	- 63	—	
Composite Triple Beat ($V_{out} = +50$ dBmV per Ch., Worst Case)					dBc
	5-175 MHz	—	- 72	- 68	
5-200 MHz	CTB ₂₆	—	- 70	—	
Noise Figure ($f = 200$ MHz)	NF	—	3.5	5	dB
DC Current	I_{DC}	310	325	350	mA

NOTES

PACKAGE DIMENSIONS



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

Information in this document is provided solely to enable system and software implementers to use Motorola products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits or integrated circuits based on the information in this document.

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals", must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part.

MOTOROLA and the Stylized M Logo are registered in the US Patent and Trademark Office. All other product or service names are the property of their respective owners. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

© Motorola Inc. 2004

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
 852-26668334

HOME PAGE: <http://motorola.com/semiconductors>

