

CATV Amplifier Module

Features

- Specified for 77-, 110-, 128- and 152- Channel Loading
- Excellent Distortion Performance
- Superior Gain, Return Loss and DC Current Stability over Temperature
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

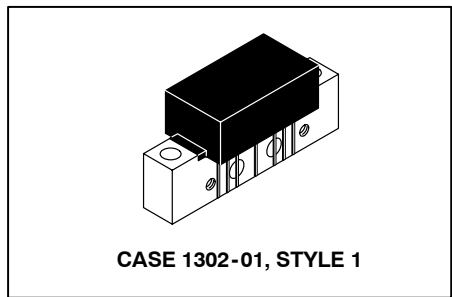
- CATV Systems Operating in the 40 to 1000 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

Description

- 24 Vdc Supply, 40 to 1000 MHz, CATV Forward Amplifier Module

MHW9242A

**1000 MHz
24 dB GAIN
152-CHANNEL
CATV AMPLIFIER MODULE**



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Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+55	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

Table 2. 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	—	1000	MHz		
Power Gain	G_p	50 MHz 23.2	—	24.8	dB		
		1000 MHz 24	—	26			
Slope	S	0	—	2.5	dB		
Gain Flatness (40 - 1000 MHz, Peak-to-Valley)	G_F	—	—	1.0	dB		
Return Loss — Input/Output ($Z_0 = 75$ Ohms)	IRL/ORL	@ 40 MHz 20	—	—	dB		
		@ $f > 40$ MHz (Derate) —	—	0.01		dB/MHz	
Composite Second Order					dBc		
($V_{out} = +38$ dBmV/ch; Worst Case)		152-Channel FLAT	CSO_{152}	—		- 66	- 61
($V_{out} = +38$ dBmV/ch; Worst Case)		128-Channel FLAT	CSO_{128}	—		- 69	—
($V_{out} = +40$ dBmV/ch; Worst Case)		110-Channel FLAT	CSO_{110}	—		- 69	—
($V_{out} = +44$ dBmV/ch; Worst Case)	77-Channel FLAT	CSO_{77}	—	- 78	—		
Cross Modulation Distortion @ Ch 2					dBc		
($V_{out} = +38$ dBmV/ch., FM= 55 MHz)		152-Channel FLAT	XMD_{152}	—		- 62	- 59
($V_{out} = +38$ dBmV/ch, FM = 55.25 MHz)		128-Channel FLAT	XMD_{128}	—		- 65	—
($V_{out} = +40$ dBmV/ch, FM = 55.25 MHz)		110-Channel FLAT	XMD_{110}	—		- 63	—
($V_{out} = +44$ dBmV/ch, FM = 55.25 MHz)	77-Channel FLAT	XMD_{77}	—	- 58	—		

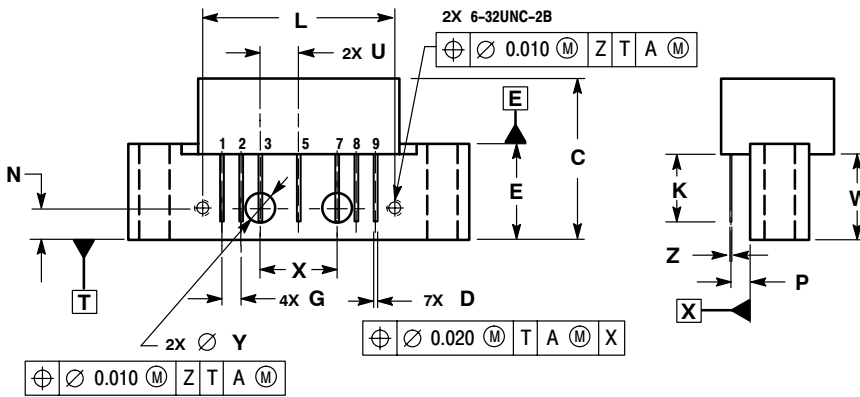
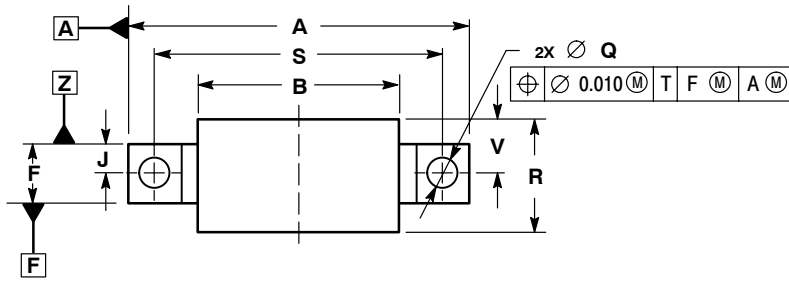
Table 2. Electrical Characteristics ($V_{CC} = 24 \text{ Vdc}$, $T_C = +30^\circ\text{C}$, 75Ω system unless otherwise noted) (continued)

Characteristic	Symbol	Min	Typ	Max	Unit
Composite Triple Beat					dBc
($V_{out} = +38 \text{ dBmV/ch.}$, Worst Case) 152-Channel FLAT	CTB_{152}	—	- 64	- 58	
($V_{out} = +38 \text{ dBmV/ch.}$, Worst Case) 128-Channel FLAT	CTB_{128}	—	- 68	—	
($V_{out} = +40 \text{ dBmV/ch.}$, Worst Case) 110-Channel FLAT	CTB_{110}	—	- 67	—	
($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case) 77-Channel FLAT	CTB_{77}	—	- 64	—	
Noise Figure					dB
f = 50 MHz	NF	—	4.8	5.5	
f = 750 MHz		—	5.5	7.0	
f = 860 MHz		—	5.8	7.5	
f = 1000 MHz		—	—	8.0	
DC Current	I_{DC}	280	318	350	mA

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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

How to Reach Us:

Home Page:
www.freescale.com

E-mail:
support@freescale.com

USA/Europe or Locations Not Listed:
Freescale Semiconductor
Technical Information Center, CH370
1300 N. Alma School Road
Chandler, Arizona 85224
+1-800-521-6274 or +1-480-768-2130
support@freescale.com

Europe, Middle East, and Africa:
Freescale Halbleiter Deutschland GmbH
Technical Information Center
Schatzbogen 7
81829 Muenchen, Germany
+44 1296 380 456 (English)
+46 8 52200080 (English)
+49 89 92103 559 (German)
+33 1 69 35 48 48 (French)
support@freescale.com

Japan:
Freescale Semiconductor Japan Ltd.
Headquarters
ARCO Tower 15F
1-8-1, Shimo-Meguro, Meguro-ku,
Tokyo 153-0064
Japan
0120 191014 or +81 3 5437 9125
support.japan@freescale.com

Asia/Pacific:
Freescale Semiconductor Hong Kong Ltd.
Technical Information Center
2 Dai King Street
Tai Po Industrial Estate
Tai Po, N.T., Hong Kong
+800 2666 8080
support.asia@freescale.com

For Literature Requests Only:
Freescale Semiconductor Literature Distribution Center
P.O. Box 5405
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