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Freescale Semiconductor
 Technical Data

Document Number: MHW8222BN
 Rev. 6, 4/2006



CATV Amplifier Module

Features

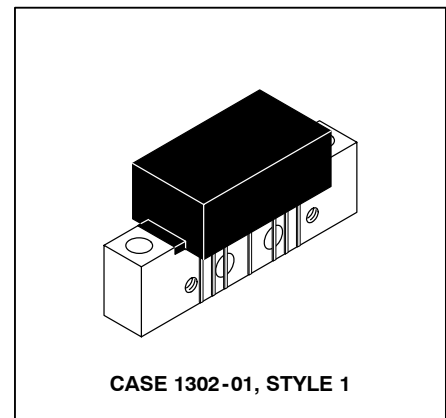
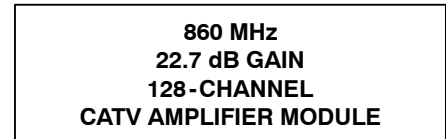
- Specified for 77-, 110- and 128-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

- CATV Systems Operating in the 40 to 860 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 860 MHz, CATV Forward Amplifier Module
- Replaced MHW8222B. There are no form, fit or function changes with this part replacement.
- RoHS Compliant



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Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
DC Supply Voltage	V _{CC}	+28	Vdc
RF Input Voltage (Single Tone)	V _{in}	+70	dBmV
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°C, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	860	MHz
Power Gain f = 50 MHz f = 860 MHz	G _p	21.4 21.8	21.9 22.7	22.4 24	dB
Slope (f = 40 - 860 MHz)	S	0.1	0.8	1.5	—
Gain Flatness (Peak To Valley) (f = 40 - 860 MHz)	G _F	—	0.4	0.6	—
Input/Output Return Loss @ f = 40 MHz	IRL/ORL	20	24	—	dB
Derate Return Loss @ f > 40 MHz	RLD	—	—	0.009	dB/MHz
Composite Second Order (V _{out} = +38 dBmV/ch; 128 Channels) (V _{out} = +40 dBmV/ch; 110 Channels) (V _{out} = +44 dBmV/ch; 77 Channels)	CSO ₁₂₈ CSO ₁₁₀ CSO ₇₇	— — —	-68 -64 -65	-60 -61 -62	dBc

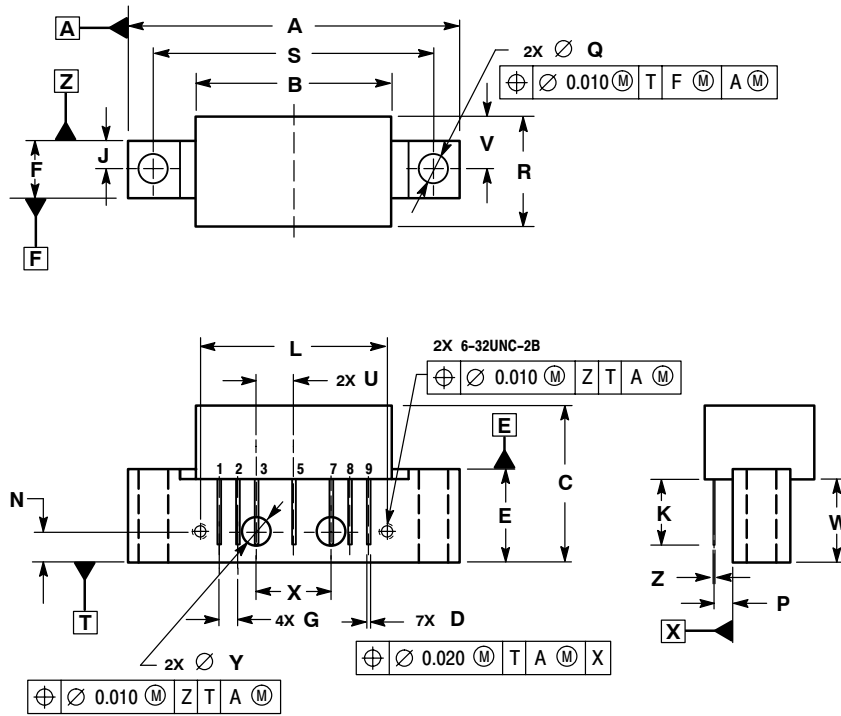
Table 2. Electrical Characteristics ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, $75\ \Omega$ system unless otherwise noted) (continued)

Characteristic	Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion ($V_{out} = +38$ dBmV/ch, 128-Channel @ $F_m = 55.25$ MHz) ($V_{out} = +40$ dBmV/ch, 110-Channel @ $F_m = 55.25$ MHz) ($V_{out} = +44$ dBmV/ch, 77-Channel @ $F_m = 55.25$ MHz)	XMD ₁₂₈ XMD ₁₁₀ XMD ₇₇	— — —	- 65 - 63 - 59	- 63 - 60 - 56	dBc
Composite Triple Beat ($V_{out} = +38$ dBmV/ch, 128-Channels, Worst Case) ($V_{out} = +40$ dBmV/ch, 110-Channels, Worst Case) ($V_{out} = +44$ dBmV/ch, 77-Channels, Worst Case)	CTB ₁₂₈ CTB ₁₁₀ CTB ₇₇	— — —	- 66 - 64 - 65	- 64 - 61 - 62	dBc
Noise Figure f = 50 MHz f = 750 MHz f = 860 MHz	NF	— — —	3.7 5 5.6	4.5 6.5 7	dB
DC Current	I _{DC}	180	220	240	mA

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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
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 E

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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
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