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Freescale Semiconductor
Technical Data

Document Number: MHW8342N

Rev. 3, 5/2006



CATV Amplifier Module

Features

- Specified for up to 132-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 870 MHz Frequency Range
- Single Module High Gain Line Amplifier in Cable TV Distribution System

Description

- 24 Vdc Supply, 40 to 870 MHz, CATV High Gain Forward Amplifier Module
- Replaced MHW8342. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

MHW8342N

**870 MHz
35.5 dB GAIN
132-CHANNEL
CATV AMPLIFIER MODULE**

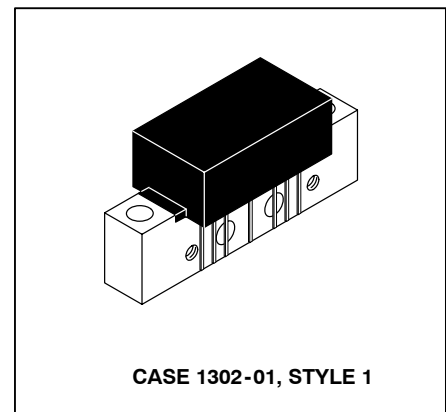


Table 1. Maximum Ratings

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	—	870	MHz	
Power Gain	G_p	50 MHz	33.2	34	34.8	dB
		870 MHz	34	35.5	37	
Slope	S	0.5	1.5	2.75	dB	
Gain Flatness (Peak To Valley)	G_F	—	0.3	0.8	dB	
Return Loss — Input ($Z_o = 75$ Ohms)	IRL	40-80 MHz	22	28	—	dB
		80-320 MHz	18	25	—	
		320-640 MHz	16	22	—	
		640-870 MHz	14	19	—	
Return Loss — Output ($Z_o = 75$ Ohms)	ORL	40-80 MHz	22	28	—	dB
		80-240 MHz	19	25	—	
		240-640 MHz	17	22	—	
		640-870 MHz	15	22	—	

ARCHIVE INFORMATION

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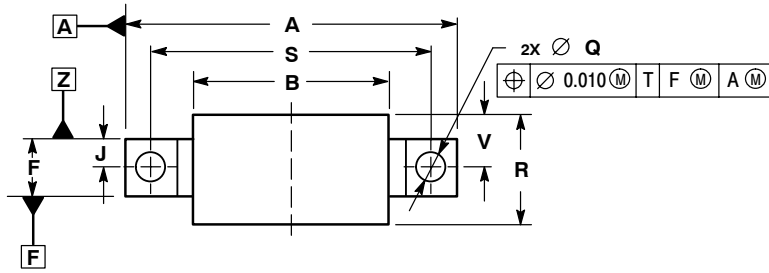
Table 2. Electrical Characteristics ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75Ω system unless otherwise noted) (continued)

Characteristic		Symbol	Min	Typ	Max	Unit
Composite Second Order ($V_{out} = +44$ dBmV/ch., Worst Case)	79-Channel FLAT	CSO_{79}	—	-65	-60	dBc
	112-Channel FLAT	CSO_{112}	—	-55	-50	
	132-Channel FLAT	CSO_{132}	—	-48	-44	
Cross Modulation Distortion ($V_{out} = +44$ dBmV, FM = 55.25 MHz)	79-Channel FLAT	XMD_{79}	—	-63	-60	dBc
	112-Channel FLAT	XMD_{112}	—	-56	-52	
	132-Channel FLAT	XMD_{132}	—	-56	-50	
Composite Triple Beat ($V_{out} = +44$ dBmV/ch., Worst Case)	79-Channel FLAT	CTB_{79}	—	-64	-62	dBc
	112-Channel FLAT	CTB_{112}	—	-54	-51	
	132-Channel FLAT	CTB_{132}	—	-50	-46	
Noise Figure	50 MHz	NF	—	3.5	4.5	dB
	550 MHz		—	4.5	—	
	870 MHz		—	5.5	6.5	
DC Current		I_{DC}	310	325	350	mA

ARCHIVE INFORMATION

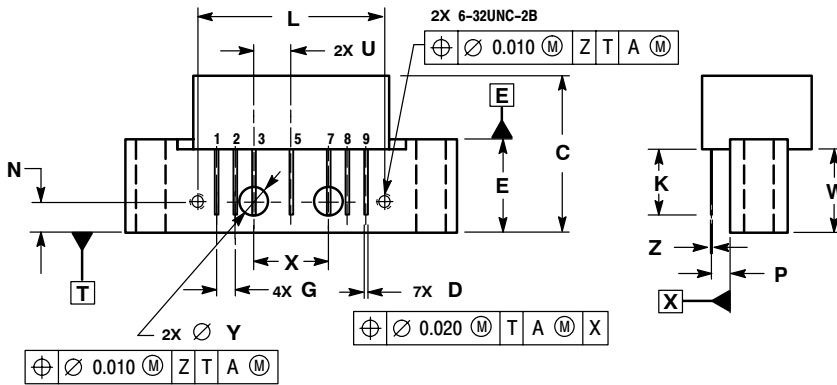
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PACKAGE DIMENSIONS



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
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 E

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