Freescale Semiconductor
Technical Data

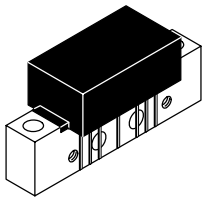
Document Number: MHW1346N
Rev. 3, 5/2006

RoHS

CATV Amplifier Module

MHW1346N

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



CASE 1302-01, STYLE 1

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

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
- Replaced MHW1346. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

Table 1. 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

Table 2. Electrical Characteristics (V_{CC} = 24 Vdc, T_C = +30°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						dBc
(V_{out} = +50 dBmV per Ch., Worst Case)						
5-175 MHz	22-Channel FLAT	CSO_{22}	—	-76	-72	
5-200 MHz	26-Channel FLAT	CSO_{26}	—	-75	—	

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Table 2. Electrical Characteristics (V_{CC} = 24 Vdc, T_C = 30°C, 75 Ω system, unless otherwise noted) **(continued)**

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

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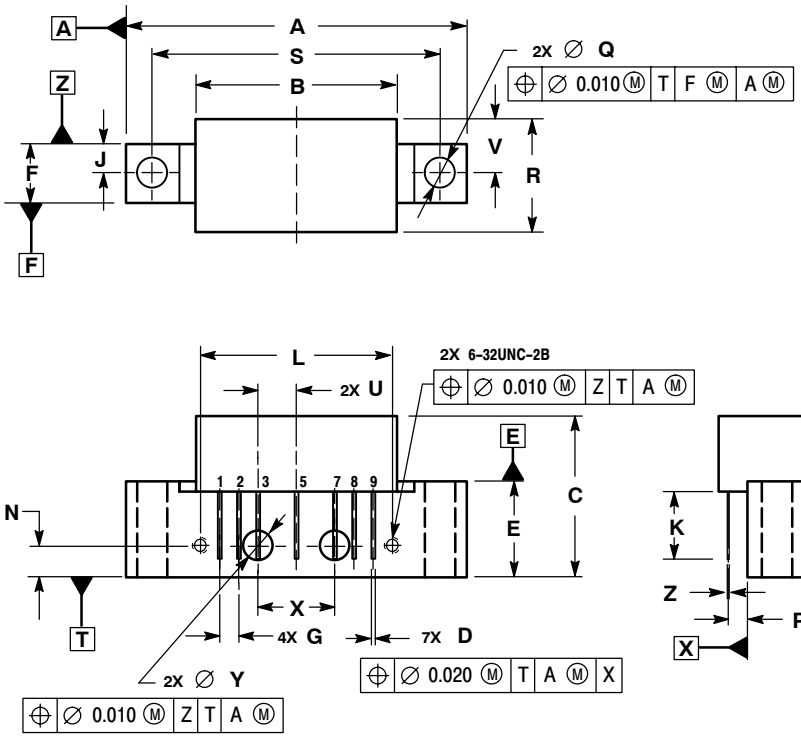
PACKAGE DIMENSIONS



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 E

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