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Freescale Semiconductor
Technical Data

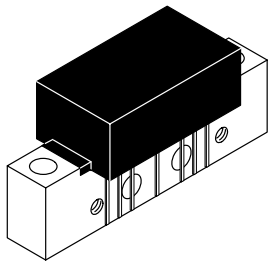
Document Number: MHW6342TN
Rev. 7, 4/2006

RoHS

CATV Amplifier Module

MHW6342TN

550 MHz
35.2 dB GAIN
77-CHANNEL
CATV AMPLIFIER MODULE



CASE 1302-01, STYLE 1

Features

- Specified for 77-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 550 MHz Frequency Range
- Single Module High Gain Line Amplifier in Cable TV Distribution System

Description

- 24 Vdc Supply, 40 to 550 MHz, CATV Forward Amplifier Module
- Replaced MHW6342T. 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}	+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°C, 75 Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	550	MHz
Power Gain	50 MHz 550 MHz	G_p	33.5 34.5	34.5 35.2	35.5 —	dB
Slope		S	0	0.7	2	dB
Gain Flatness (Peak To Valley)		G_F	—	0.3	0.8	dB
Return Loss — Input/Output (Z_o = 75 Ohms)	40 - 550 MHz 450 - 550 MHz	IRL/ORL	18 16	— —	— —	dB
Second Order Intermodulation Distortion (V_{out} = +46 dBmV per ch., Ch 2, M13, M22) (V_{out} = +44 dBmV per ch., Ch 2, M30, M39)		IMD	— —	- 80 - 74	— —	dBc
Cross Modulation Distortion (V_{out} = +46 dBmV per ch.) (V_{out} = +44 dBmV per ch.)	60-Channel FLAT 77-Channel FLAT	XMD_{60} XMD_{77}	— —	- 62 - 63	— - 57	dBc

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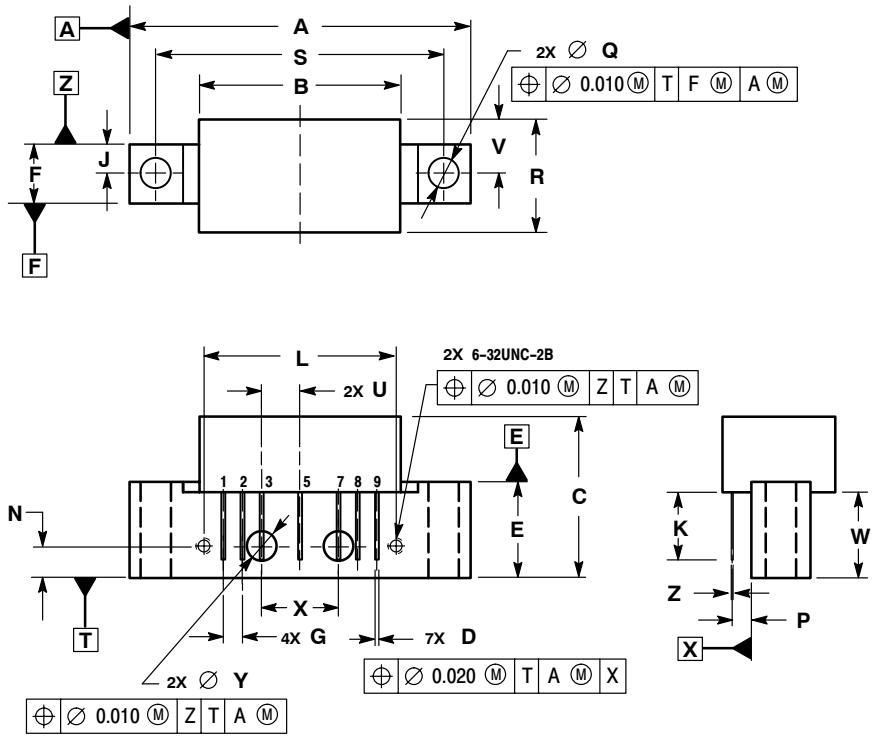
Table 2. Electrical Characteristics (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system unless otherwise noted) **(continued)**

Characteristic		Symbol	Min	Typ	Max	Unit
Composite Triple Beat						dBc
(V_{out} = +46 dBmV per ch.)	60-Channel FLAT	CTB_{60}	—	-64	—	
(V_{out} = +44 dBmV per ch.)	77-Channel FLAT	CTB_{77}	—	-63	-57	
Composite Second Order						dBc
(V_{out} = +46 dBmV/ch, 60-Channel FLAT)		CSO_{60}	—	-70	—	
(V_{out} = +44 dBmV/ch, 77-Channel FLAT)		CSO_{77}	—	-65	-57	
Noise Figure	550 MHz	NF	—	5.5	6.5	dB
DC Current		I_{DC}	—	310	340	mA

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.

	INCHES		MILLIMETERS	
DIM	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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