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Freescale Semiconductor
 Technical Data

Document Number: MHW8242AN
 Rev. 7, 4/2006



CATV Amplifier Module

Features

- Specified for 77- 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 MHW8242A. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

MHW8242AN

**860 MHz
 25 dB GAIN
 128-CHANNEL
 CATV AMPLIFIER MODULE**

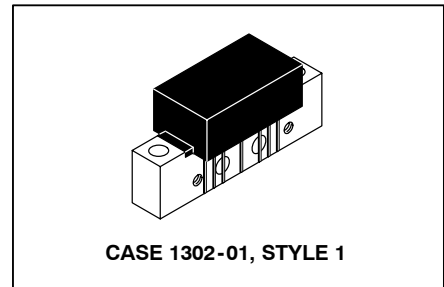


Table 1. Maximum Ratings

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	—	860	MHz
Power Gain	G_p	23.2 24	24 25	24.8 26	dB
Slope	S	0	0.8	1.8	dB
Gain Flatness (40 - 860 MHz, Peak To Valley)	G_F	—	0.4	0.8	dB
Return Loss — Input/Output ($Z_o = 75$ Ohms)	IRL/ORL	20 —	— —	— 0.007	dB dB/MHz
Composite Second Order ($V_{out} = +38$ dBmV/ch., Worst Case) ($V_{out} = +44$ dBmV/ch., Worst Case)	CSO_{128} CSO_{77}	— —	-69 -78	-62 —	dBc
Cross Modulation Distortion @ Ch 2 ($V_{out} = +38$ dBmV/ch., FM = 55 MHz) ($V_{out} = +44$ dBmV/ch., FM = 55 MHz)	XMD_{128} XMD_{77}	— —	-65 -58	-62 —	dBc
Composite Triple Beat ($V_{out} = +38$ dBmV/ch., Worst Case) ($V_{out} = +44$ dBmV/ch., Worst Case)	CTB_{128} CTB_{77}	— —	-68 -64	-64 —	dBc
Noise Figure	NF	— —	4.8 5.8	5.5 7.5	dB
DC Current	I_{DC}	280	318	350	mA

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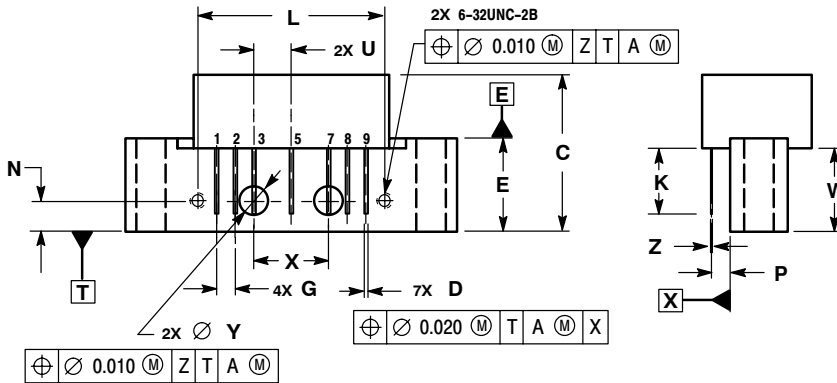
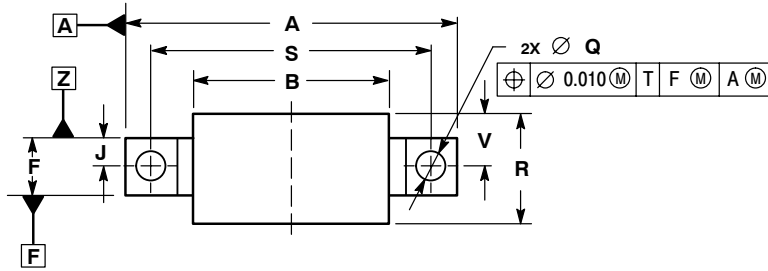
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NOTES

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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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