

The RF Line
CATV Amplifier Module

MHW7242A

Features

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

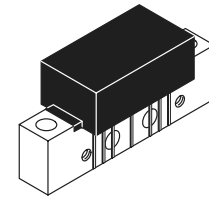
Applications

- CATV Systems Operating in the 40 to 750 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 750 MHz, CATV Forward Amplifier

750 MHz
24.7 dB GAIN
110–CHANNEL
CATV AMPLIFIER



CASE 1302–01, STYLE 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

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	—	750	MHz
Power Gain	G_p	23.2	24	24.8	dB
		24	24.7	26	
Slope	S	0	0.6	1.5	dB
Gain Flatness (40–750 MHz, Peak To Valley)	G_F	—	0.4	0.6	dB
Return Loss — Input/Output ($Z_0 = 75$ Ohms)	IRL/ORL	20	—	—	dB
		—	—	0.007	dB/MHz
Composite Second Order					dBc
($V_{out} = +40$ dBmV/ch., Worst Case)	CSO_{110}	—	–69	–62	
($V_{out} = +44$ dBmV/ch., Worst Case)	CSO_{77}	—	–78	—	

Freescale Semiconductor, Inc.

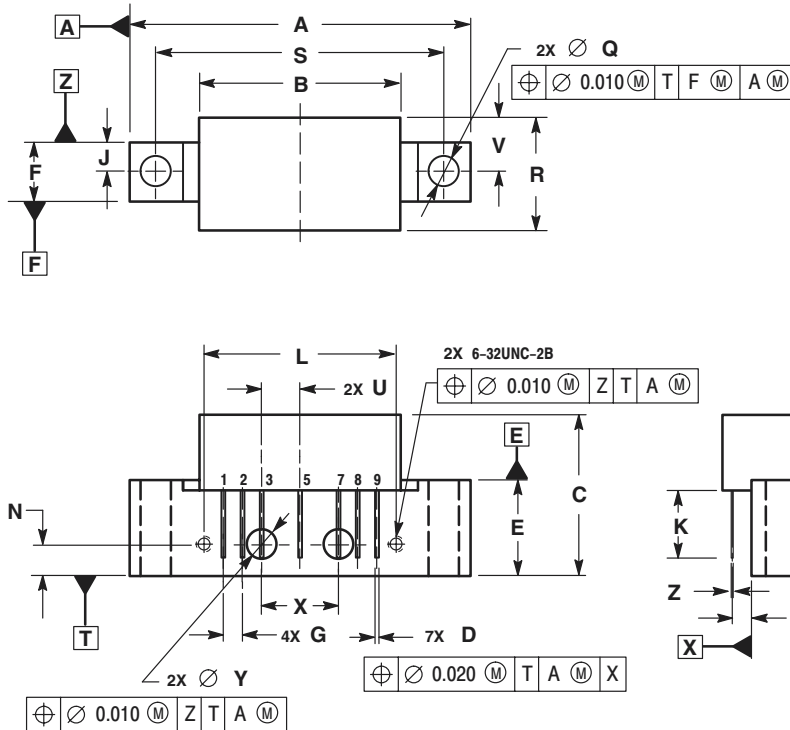
ELECTRICAL CHARACTERISTICS — continued ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ($V_{out} = +40$ dBmV/ch., FM = 55 MHz) ($V_{out} = +44$ dBmV/ch., FM = 55 MHz)	110-Channel FLAT	XMD_{110}	—	-63	-61	dBc
	77-Channel FLAT	XMD_{77}	—	-58	—	
Composite Triple Beat ($V_{out} = +40$ dBmV/ch., Worst Case) ($V_{out} = +44$ dBmV/ch., Worst Case)	110-Channel FLAT	CTB_{110}	—	-67	-63	dBc
	77-Channel FLAT	CTB_{77}	—	-64	—	
Noise Figure	50 MHz	NF	—	4.8	5.5	dB
	750 MHz		—	5.5	7	
DC Current		I_{DC}	280	318	350	mA

NOTES

Freescale Semiconductor, Inc.

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 B

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