

The RF Line
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

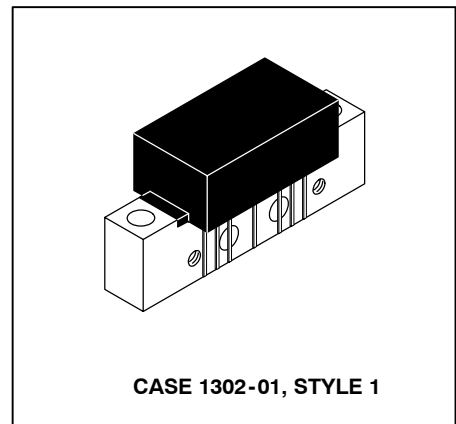
- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Single Module High Gain Line Amplifier in Cable TV Distribution System

Description

- 24 Vdc Supply, 40 to 870 MHz, CATV High Gain Forward Amplifier Module

MHW8342

870 MHz
35.5 dB GAIN
132-CHANNEL
CATV AMPLIFIER MODULE



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, $T_C = +30^\circ\text{C}$, 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	—	

Freescale Semiconductor, Inc.

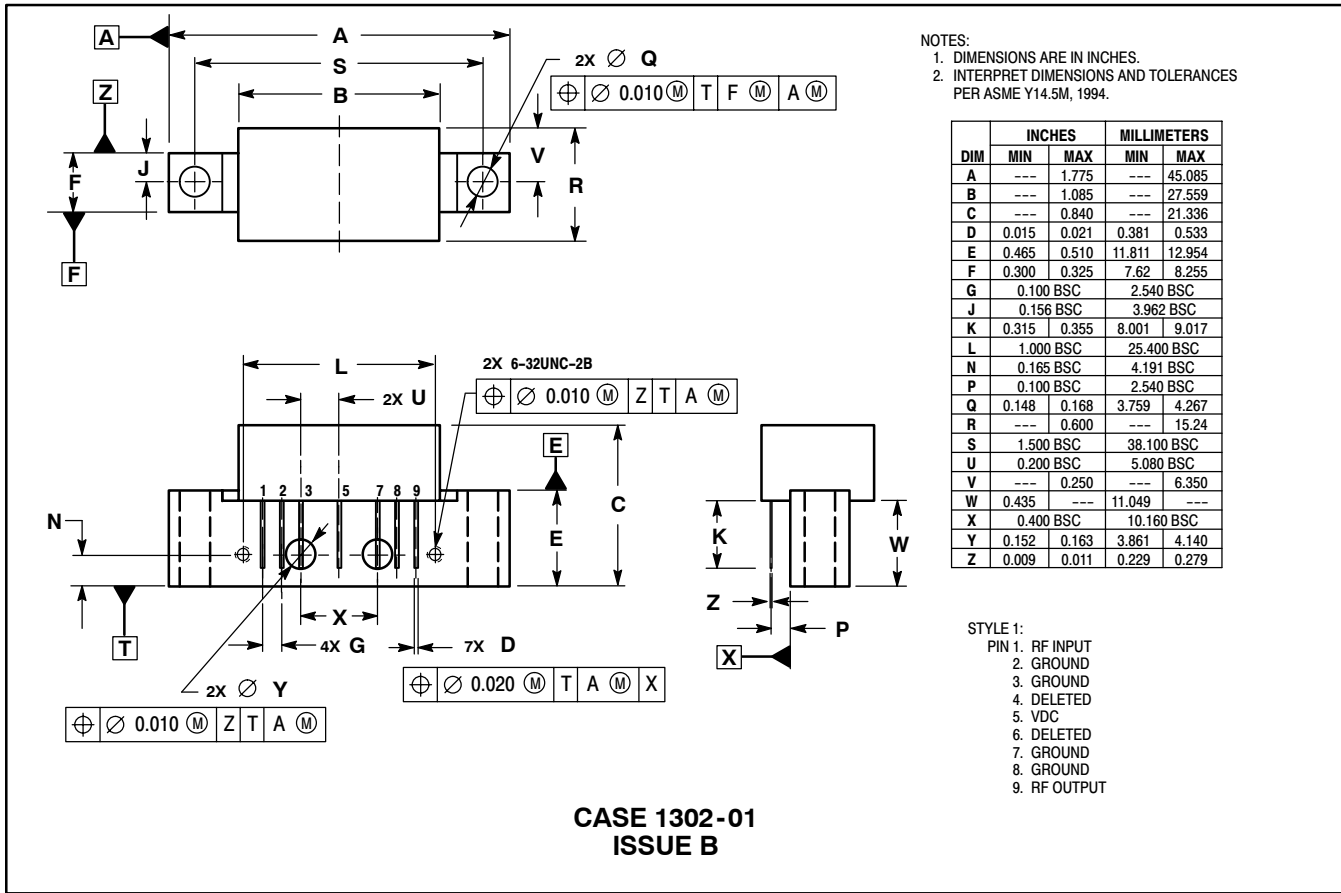
ELECTRICAL CHARACTERISTICS — continued ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, $75\ \Omega$ system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Composite Second Order						dBc
($V_{out} = +44$ dBmV/ch., Worst Case)	79-Channel FLAT	CSO_{79}	—	-65	-60	
($V_{out} = +44$ dBmV/ch., Worst Case)	112-Channel FLAT	CSO_{112}	—	-55	-50	
($V_{out} = +44$ dBmV/ch., Worst Case)	132-Channel FLAT	CSO_{132}	—	-48	-44	
Cross Modulation Distortion						dBc
($V_{out} = +44$ dBmV, FM = 55.25 MHz)	79-Channel FLAT	XMD_{79}	—	-63	-60	
($V_{out} = +44$ dBmV, FM = 55.25 MHz)	112-Channel FLAT	XMD_{112}	—	-56	-52	
($V_{out} = +44$ dBmV, FM = 55.25 MHz)	132-Channel FLAT	XMD_{132}	—	-56	-50	
Composite Triple Beat						dBc
($V_{out} = +44$ dBmV/ch., Worst Case)	79-Channel FLAT	CTB_{79}	—	-64	-62	
($V_{out} = +44$ dBmV/ch., Worst Case)	112-Channel FLAT	CTB_{112}	—	-54	-51	
($V_{out} = +44$ dBmV/ch., Worst Case)	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

NOTES

Freescale Semiconductor, Inc.

PACKAGE DIMENSIONS



CASE 1302-01
 ISSUE B

Information in this document is provided solely to enable system and software implementers to use Motorola products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits or integrated circuits based on the information in this document.

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals", must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part.

MOTOROLA and the Stylized M Logo are registered in the US Patent and Trademark Office. All other product or service names are the property of their respective owners. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

© Motorola Inc. 2004

HOW TO REACH US:

USA/EUROPE/LOCATIONS NOT LISTED:
 Motorola Literature Distribution
 P.O. Box 5405, Denver, Colorado 80217
 1-800-521-6274 or 480-768-2130

JAPAN: Motorola Japan Ltd.; SPS, Technical Information Center,
 3-20-1, Minami-Azabu, Minato-ku, Tokyo 106-8573, Japan
 81-3-3440-3569

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre,
 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong
 852-26668334

HOME PAGE: <http://motorola.com/semiconductors>



MOTOROLA

For More Information On This Product,
 Go to: www.freescale.com

MHW8342/D

Freescale Semiconductor, Inc.