

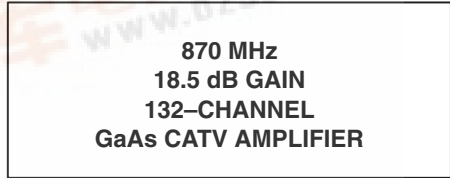
The RF Line

Gallium Arsenide CATV Amplifier Module



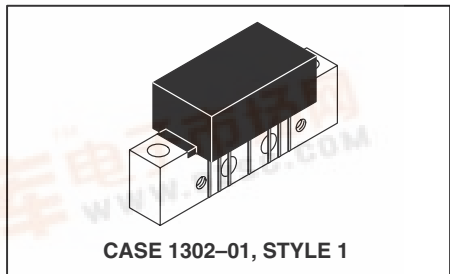
Features

- Specified for 79-, 112- and 132-Channel Loading
- Excellent Distortion Performance
- Built-in Input Diode Protection
- GaAs FET Transistor Technology
- Unconditionally Stable Under All Load Conditions



Applications

- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Output Stage Amplifier on Applications Requiring Low Power Dissipation and High Output Performance
- Driver Amplifier in Linear General Purpose Applications



Description

- 24 Vdc Supply, 40 to 870 MHz, CATV GaAs Forward Amplifier

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+65	dBmV
DC Supply Voltage	V_{CC}	+26	Vdc
Operating Case Temperature Range	T_C	-20 to +100	°C
Storage Temperature Range	T_{stg}	-40 to +100	°C

ESD MAXIMUM RATINGS

Rating	Input Value	Output Value	Unit
Surge Voltage per IEC 1000-4-5	300	300	V
Human Body Model per Mil. Std. 1686	2	2	kV

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	17.5	18	18.5	dB
		870 MHz	18	18.5	19.5	
Slope	S	0.2	0.6	1.2	dB	
Gain Flatness (40-870 MHz, Peak-to-Valley)	G_F	—	0.3	0.8	dB	
Return Loss — Input ($Z_0 = 75$ Ohms)	IRL	40-200 MHz	20	—	—	dB
		200-600 MHz	19	—	—	
		600-870 MHz	18	—	—	
Return Loss — Output ($Z_0 = 75$ Ohms)	ORL	40-200 MHz	20	—	—	dB
		200-600 MHz	19	—	—	
		600-870 MHz	18	—	—	

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

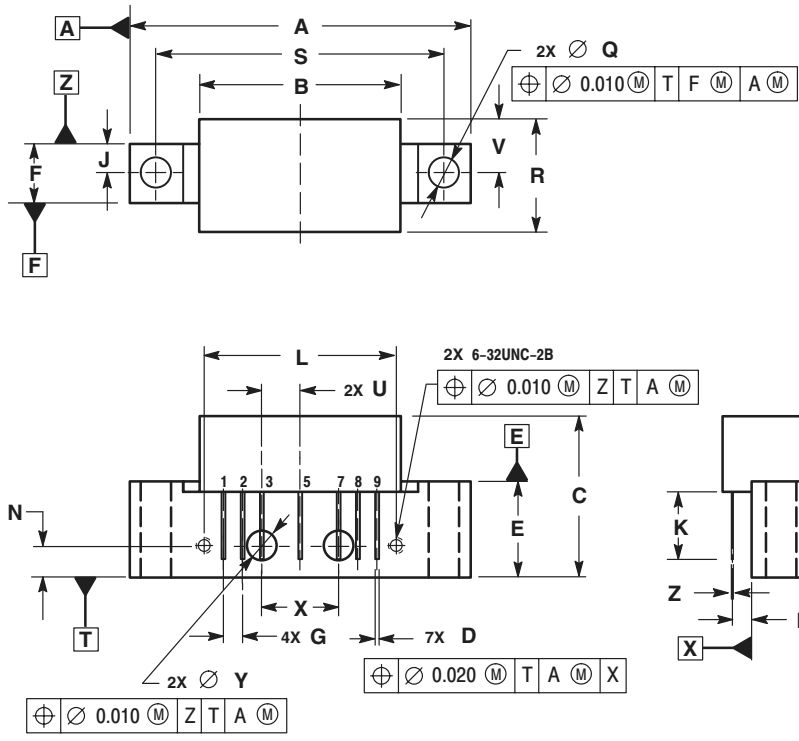
Characteristic	Symbol	Min	Typ	Max	Unit	
Composite Second Order ($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case) 132-Channel FLAT ($V_{out} = +46 \text{ dBmV/ch.}$, Worst Case) 112-Channel FLAT ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) 79-Channel FLAT	CSO ₁₃₂ CSO ₁₁₂ CSO ₇₉	— — —	-67 -65 -72	-60 -61 -64	dBc	
Cross Modulation Distortion @ Ch 2 ($V_{out} = +44 \text{ dBmV/ch.}$, FM = 55 MHz) 132-Channel FLAT ($V_{out} = +46 \text{ dBmV/ch.}$, FM = 55 MHz) 112-Channel FLAT ($V_{out} = +48 \text{ dBmV/ch.}$, FM = 55 MHz) 79-Channel FLAT	XMD ₁₃₂ XMD ₁₁₂ XMD ₇₉	— — —	-58 -58 -58	-52 -52 -52	dBc	
Composite Triple Beat ($V_{out} = +44 \text{ dBmV/ch.}$, Worst Case) 132-Channel FLAT ($V_{out} = +46 \text{ dBmV/ch.}$, Worst Case) 112-Channel FLAT ($V_{out} = +48 \text{ dBmV/ch.}$, Worst Case) 79-Channel FLAT	CTB ₁₃₂ CTB ₁₁₂ CTB ₇₉	— — —	-62 -61 -64	-58 -58 -60	dBc	
Noise Figure 50 MHz 870 MHz	NF	— —	4 3.7	5.0 5.0	dB	
DC Current ($V_{DC} = 24 \text{ V}$, $T_C = -20^\circ\text{C}$ to $+100^\circ\text{C}$)	I_{DC}		230	250	265	mA

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NOTES

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PACKAGE DIMENSIONS



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

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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How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

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

Technical Information Center: 1-800-521-6274

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

