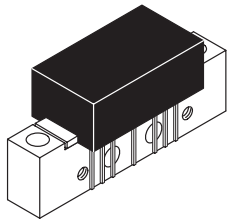
The RF Line

152-Channel (1000 MHz) CATV Line Extender Amplifier

- Specified for 152–Channel Performance
- Broadband Power Gain — @ f = 40–1000 MHz
  G_p = 24 dB
- Broadband Noise Figure
  NF = 8 dB (Max) @ 1000 MHz
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7 GHz f_T Ion–Implanted Transistors

MHW9242A

1000 MHz
24 dB GAIN
152–CHANNEL
CATV AMPLIFIER



CASE 714Y–03, 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)

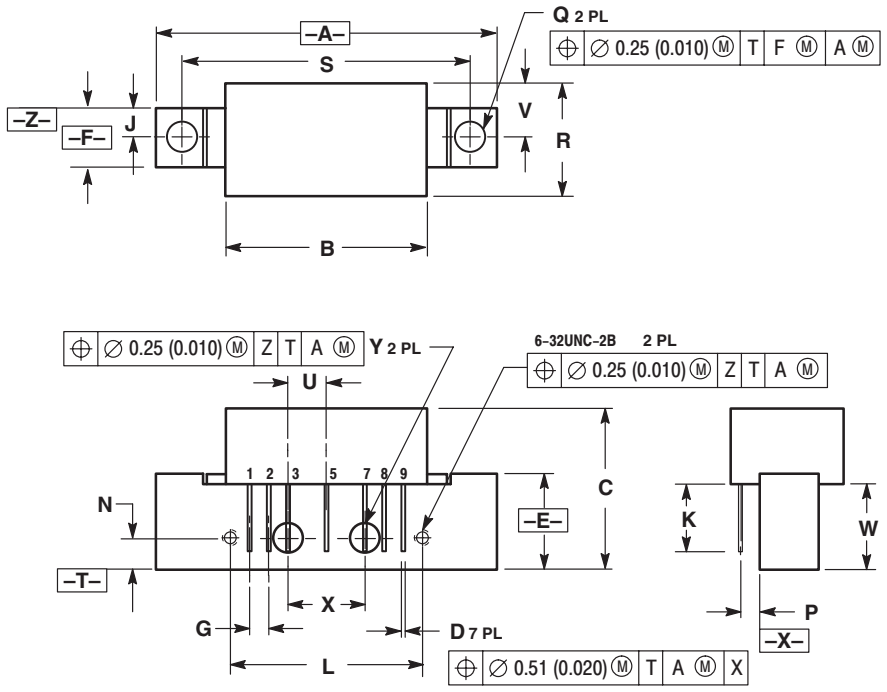
Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	1000	MHz
Power Gain	50 MHz 1000 MHz	G_p	23.2 24	— —	24.8 26	dB
Slope	40–1000 MHz	S	0	—	2.5	dB
Gain Flatness (40–1000 MHz, Peak–to–Valley)		—	—	—	1.0	dB
Return Loss — Input/Output (Z_o = 75 Ohms)	@ 40 MHz	IRL/ORL	20	—	—	dB
	@ f > 40 MHz (Derate)		—	—	0.01	dB/MHz
Composite Second Order						dBc
(V_{out} = +38 dBmV/ch; Worst Case)	152–Channel FLAT	CSO_{152}	—	–66	–61	
(V_{out} = +38 dBmV/ch; Worst Case)	128–Channel FLAT	CSO_{128}	—	–69	—	
(V_{out} = +40 dBmV/ch;Worst Case)	110–Channel FLAT	CSO_{110}	—	–69	—	
(V_{out} = +44 dBmV/ch; Worst Case)	77–Channel FLAT	CSO_{77}	—	–78	—	
Cross Modulation Distortion @ Ch 2						dBc
(V_{out} = +38 dBmV/ch., FM= 55 MHz)	152–Channel FLAT	XMD_{152}	—	–62	–59	
(V_{out} = +38 dBmV/ch, FM = 55.25 MHz)	128–Channel FLAT	XMD_{128}	—	–65	—	
(V_{out} = +40 dBmV/ch, FM = 55.25 MHz)	110–Channel FLAT	XMD_{110}	—	–63	—	
(V_{out} = +44 dBmV/ch, FM = 55.25 MHz)	77–Channel FLAT	XMD_{77}	—	–58	—	

ELECTRICAL CHARACTERISTICS — continued

Characteristic		Symbol	Min	Typ	Max	Unit
Composite Triple Beat						dBc
(V_{out} = +38 dBmV/ch., Worst Case)	152–Channel FLAT	CTB_{152}	—	–64	–58	
(V_{out} = +38 dBmV/ch, Worst Case)	128–Channel FLAT	CTB_{128}	—	–68	—	
(V_{out} = +40 dBmV/ch, Worst Case)	110–Channel FLAT	CTB_{110}	—	–67	—	
(V_{out} = +44 dBmV/ch, Worst Case)	77–Channel FLAT	CTB_{77}	—	–64	—	
Noise Figure	f = 50 MHz	NF	—	4.8	5.5	dB
	f = 750 MHz		—	5.5	7.0	
	f = 860 MHz		—	5.8	7.5	
	f = 1000 MHz		—	—	8.0	
DC Current		I_{DC}	280	318	350	mA

NOTES

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	-----	1.775	-----	45.08
B	-----	1.085	-----	27.56
C	-----	0.840	-----	21.34
D	0.018	0.022	0.46	0.56
E	0.465	0.510	11.81	12.95
F	0.300	0.325	7.62	8.25
G	0.100 BSC		2.54 BSC	
J	0.156 BSC		3.96 BSC	
K	0.315	0.355	8.00	8.50
L	1.00 BSC		25.40 BSC	
N	0.165 BSC		4.19 BSC	
P	0.100 BSC		2.54 BSC	
Q	0.148	0.168	3.76	4.27
R	----	0.600	----	15.24
S	1.500 BSC		38.10 BSC	
U	0.200 BSC		5.08 BSC	
V	---	0.250	---	6.35
W	0.435	0.450	11.05	11.43
X	0.400 BSC		10.16 BSC	
Y	0.152	0.163	3.85	4.15

STYLE 1:
PIN 1. RF INPUT
2. GROUND
3. GROUND
4. DELETED
5. VDC
6. DELETED
7. GROUND
8. GROUND
9. RF OUTPUT

CASE 714Y–03
ISSUE D

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