

## The RF Line

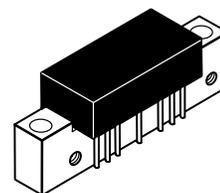
# High Output Power Doubler 750 MHz CATV Amplifier

**MHW7185**

Designed specifically for 750 MHz CATV applications. Features ion-implanted arsenic emitter transistors with an all gold metallization system.

**24 Vdc**  
**750 MHz**  
**77/110 – CHANNEL**  
**CATV AMPLIFIER**

- Supply Voltage = 24 Vdc
- 5th Generation Die Technology
- Specified for 77/110 – Channel Performance
- Broadband Power Gain @ f = 50 MHz  
Gp = 18 dB typ
- Broadband Noise Figure @ f = 50 MHz  
NF = 6 dB Max
- Improvement in Distortion Over Conventional Hybrids
- Allows Higher Output Level Operation
- All Gold Metallization



**CASE 714-06, Style 1**

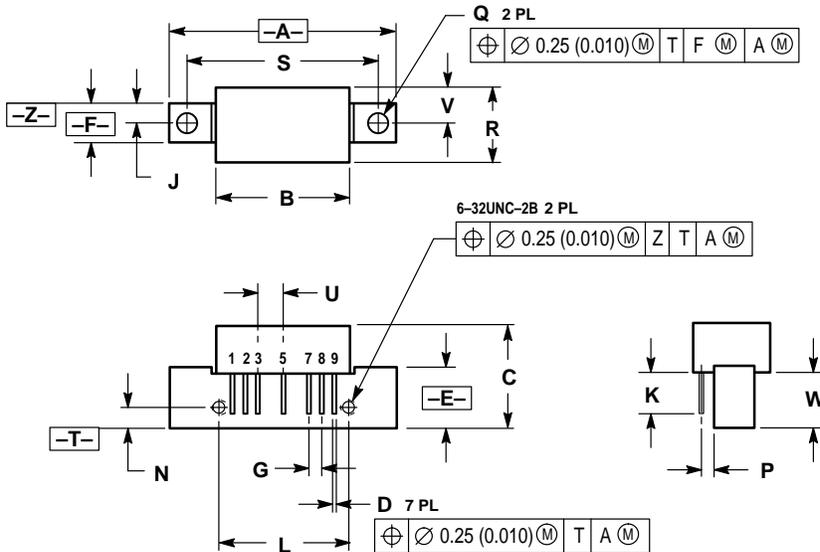
### MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
DC Supply Voltage	V <sub>CC</sub>	+28	Vdc
RF Input Voltage (Single Tone)	V <sub>IN</sub>	+70	dBmV
Operating Case Temperature Range	T <sub>C</sub>	- 20 to +100	°C
Storage Temperature Range	T <sub>stg</sub>	- 40 to +100	°C

### ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 24 Vdc, T<sub>C</sub> = 30°C, 75 ohm system, unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Bandwidth	BW	40	750	MHz
Power Gain (f = 50 MHz)	Gp1	18.0	19.0	dB
Power Gain (f = 750 MHz)	Gp2	18.5	20.5	dB
Slope (f = 40 – 750 MHz)	S	0	2	dB
Flatness (f = 40 – 750 MHz, Peak to Valley)	G <sub>f</sub>	—	1	dB
Return Loss (f = 40 MHz)	RL	18	—	dB
Return Loss Derate (f > 40 MHz)	RLD	—	0.011	dB/MHz
Composite Triple Beat (V <sub>out</sub> = +44 dBmV/ch, 77 Channels, Worst Case)	CTB <sub>77</sub>	—	-65	dBc
Composite Triple Beat (V <sub>out</sub> = +44 dBmV/ch, 110 Channels, Worst Case)	CTB <sub>110</sub>	—	-56	dBc
Cross Modulation (V <sub>out</sub> = +44 dBmV/ch, 77 Channels, FM = 55 MHz)	XMD <sub>77</sub>	—	-68	dBc
Cross Modulation (V <sub>out</sub> = +44 dBmV/ch, 110 Channels, FM = 55 MHz)	XMD <sub>110</sub>	—	-65	dBc
Composite Second Order (V <sub>out</sub> = +44 dBmV/ch, 77 Channels, Worst Case)	CSO <sub>77</sub>	—	-62	dBc
Composite Second Order (V <sub>out</sub> = +44 dBmV/ch, 110 Channels, Worst Case)	CSO <sub>110</sub>	—	-56	dBc
Noise Figure (f = 50 MHz)	NF <sub>1</sub>	—	6	dB
Noise Figure (f = 750 MHz)	NF <sub>2</sub>	—	8.5	dB
DC Current	IDC	380	460	mA

## PACKAGE DIMENSIONS



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

DIM	INCHES		MILLIMETERS	
	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		4.10 BSC	
P	0.100 BSC		2.54 BSC	
Q	0.148	0.168	3.76	4.27
R	—	0.595	—	15.11
S	1.500 BSC		38.10 BSC	
U	0.200 BSC		5.08 BSC	
V	0.280 BSC		7.11 BSC	
W	0.435	0.450	11.05	11.43

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

**CASE 714-06  
 ISSUE K**

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MHW7185/D

