

## The RF Line

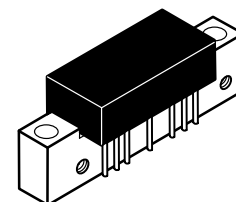
# High Output Doubler 450/550 MHz CATV Amplifier Modules

The MHW5185B and MHW6185B are designed specifically for 450/550 MHz CATV applications. Features ion-implanted arsenic emitter transistors and an all gold metallization system.

- 5th Generation Die Technology
- Specified for 60/77-Channel Performance
- Broadband Power Gain — @  $f = 40-550$  MHz
  - $G_p = 18.5$  dB Typ @ 50 MHz
  - 19.2 dB Typ @ 450 MHz
  - 19.5 dB Typ @ 550 MHz
- Broadband Noise Figure
  - NF = 4.5 dB Typ @ 50 MHz
- Improvement in Distortion Over Conventional Hybrids
- Allows Higher Output Level Operation

**MHW5185B**  
**MHW6185B**

**18 dB GAIN**  
**450/550 MHz**  
**60/77-CHANNEL**  
**CATV AMPLIFIERS**



CASE 714-06, STYLE 1

### ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	$V_{in}$	+70	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 $\Omega$ system unless otherwise noted)

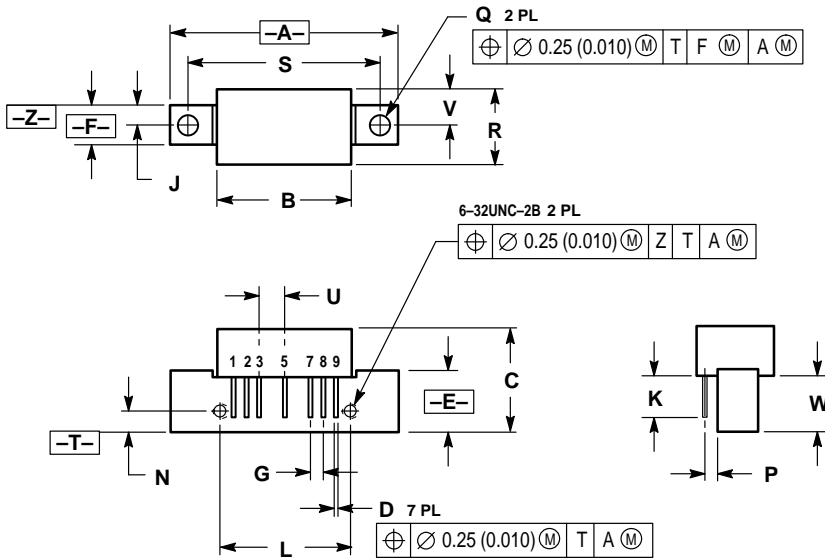
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
		40	—	550	
Power Gain	$G_p$	18	18.5	19	dB
50 MHz		18.5	19.2	20	
450 MHz		18.8	19.5	20.5	
550 MHz					
Slope	S	0.3	—	1.8	dB
40-450 MHz		0.3	—	2.0	
40-550 MHz					
Gain Flatness (Peak To Valley)	—	—	—	0.4	dB
		—	—	0.5	
Return Loss — Input/Output ( $Z_0 = 75$ Ohms)	IRL/ORL	18	—	—	dB
40-450 MHz		18	—	—	
40-550 MHz					
Composite Second Order	CSO <sub>60/77</sub>	—	-70	-67	dB
60 ch, ( $V_{out} = +46$ dBmV)		—	-68	-65	
77 ch, ( $V_{out} = +44$ dBmV)					

(continued)

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

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion (60 ch, $V_{out} = +46 \text{ dBmV}$ @ $F_m = 55 \text{ MHz}$ ) (77 ch, $V_{out} = +44 \text{ dBmV}$ @ $F_m = 55 \text{ MHz}$ )	MHW5185B	XMD <sub>60/77</sub>	—	-70	-67	dB
	MHW6185B		—	-78	-68	
Signal-to-Triple Beat Noise (60 ch, $V_{out} = +46 \text{ dBmV}$ ) (77 ch, $V_{out} = +44 \text{ dBmV}$ )	MHW5185B	CTB <sub>60/77</sub>	—	-68	-67	dB
	MHW6185B		—	-66	-65	
Noise Figure	450 MHz	NF	—	5.5	7.0	dB
	550 MHz		—	6.0	7.5	
DC Current ( $V_{DC} = 24 \text{ Vdc}$ , $T_C = 30^\circ\text{C}$ )		$I_{DC}$	380	415	440	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	—
R	0.148	0.168	3.76	4.27
S	—	0.595	—	15.11
U	1.500 BSC	—	38.10 BSC	—
V	0.200 BSC	—	5.08 BSC	—
W	0.280 BSC	—	7.11 BSC	—

- 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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