

The RF Line

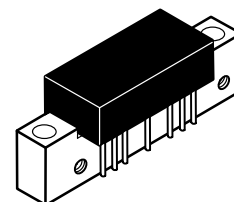
High Output Doubler 450/550/600 MHz CATV Amplifier Modules

The MHW5185B, MHW6185B, and MHW6185-6 are designed specifically for 450/550/600 MHz CATV applications. Features ion-implanted arsenic emitter transistors and an all gold metallization system.

- 5th Generation Die Technology
- Specified for 60/77/87-Channel Performance
- Broadband Power Gain — @ $f = 40\text{--}550\text{ MHz}$
 - $G_p = 18.5\text{ dB Typ @ } 50\text{ MHz}$
 - $19.2\text{ dB Typ @ } 450\text{ MHz}$
 - $19.5\text{ dB Typ @ } 550\text{ MHz}$
 - $19.8\text{ dB Typ @ } 600\text{ MHz}$
- Broadband Noise Figure
 - $NF = 4.5\text{ dB Typ @ } 50\text{ MHz}$
 - $= 6.5\text{ dB Typ @ } 600\text{ MHz}$
- Improvement in Distortion Over Conventional Hybrids
- Allows Higher Output Level Operation

MHW5185B
MHW6185B
MHW6185-6

18 dB GAIN
450/550/600 MHz
60/77/87-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 ($V_{CC} = 24\text{ Vdc}$, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

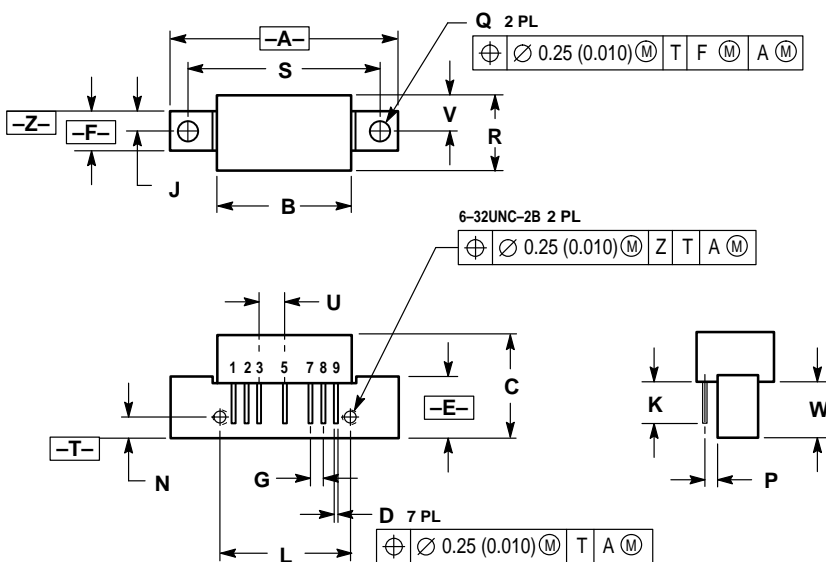
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
		40	—	550	
		40	—	600	
Power Gain	G_p	18	18.5	19	dB
50 MHz		18.5	19.2	20	
450 MHz		18.8	19.5	20.5	
550 MHz		19	19.8	21	
600 MHz					
Slope	S	0.3	—	1.8	dB
40-450 MHz		0.3	—	2.0	
40-550 MHz		0.5	—	2.5	
40-600 MHz					
Gain Flatness (Peak To Valley)	—	—	—	0.4	dB
		—	—	0.5	
		—	—	0.6	
Return Loss — Input/Output ($Z_0 = 75\text{ Ohms}$)	IRL/ORL	18	—	—	dB
40-450 MHz		18	—	—	
40-550 MHz		18	—	—	
40-600 MHz		18	—	—	
Composite Second Order	$CSO_{60/77/87}$	—	—70	-67	dB
60 ch, ($V_{out} = +46\text{ dBmV}$)		—	-68	-65	
77 ch, ($V_{out} = +44\text{ dBmV}$)		—	-60	-60	
87 ch, ($V_{out} = +44\text{ dBmV}$)		—			

(continued)

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
Cross Modulation Distortion (60 ch, $V_{out} = +46 \text{ dBmV}$ @ $F_m = 55 \text{ MHz}$) (77 ch, $V_{out} = +44 \text{ dBmV}$ @ $F_m = 55 \text{ MHz}$) (87 ch, $V_{out} = +44 \text{ dBmV}$ @ $F_m = 55 \text{ MHz}$)		MHW5185B	XMD _{60/77/87}	—	–70	–67	dB
		MHW6185B		—	–78	–68	
		MHW6185–6		—	–70	–66	
Signal-to-Triple Beat Noise (60 ch, $V_{out} = +46 \text{ dBmV}$) (77 ch, $V_{out} = +44 \text{ dBmV}$) (87 ch, $V_{out} = +44 \text{ dBmV}$)		MHW5185B	CTB _{60/77/87}	—	–68	–67	dB
		MHW6185B		—	–66	–65	
		MHW6185–6		—	–62	–62	
Noise Figure	450 MHz	MHW5185B	NF	—	5.5	7.0	dB
	550 MHz	MHW6185B		—	6.0	7.5	
	600 MHz	MHW6185–6		—	6.5	8.0	
DC Current ($V_{DC} = 24 \text{ Vdc}$, $T_C = 30^\circ\text{C}$)			I_{DC}	380	415	440	mA

PACKAGE DIMENSIONS



NOTES:


- 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:

- TABLE 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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