The RF Line

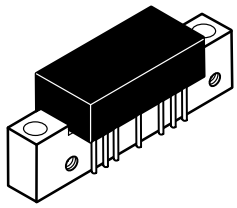
High Output Doubler 450/550/600 MHz CATV Amplifier Modules

MHW5185B
MHW6185B
MHW6185-6

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 = 40–550 MHz
  G_p = 18.5 dB Typ @ 50 MHz
  19.2 dB Typ @ 450 MHz
  19.5 dB Typ @ 550 MHz
  19.8 dB Typ @ 600 MHz
- Broadband Noise Figure
  NF = 4.5 dB Typ @ 50 MHz
  = 6.5 dB Typ @ 600 MHz
- Improvement in Distortion Over Conventional Hybrids
- Allows Higher Output Level Operation

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 Vdc, T_C = +30°C, 75 Ω system unless otherwise noted)

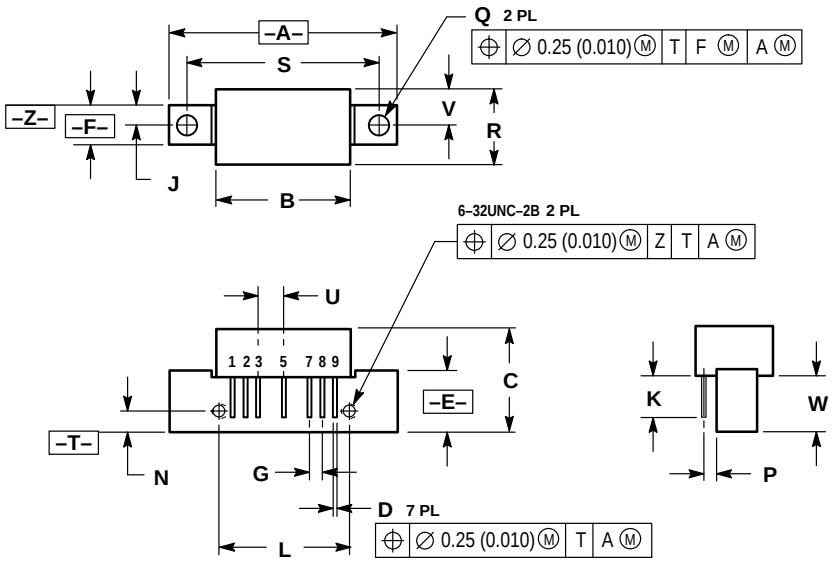
Characteristic			Symbol	Min	Typ	Max	Unit
Frequency Range		MHW5185B	BW	40	—	450	MHz
		MHW6185B		40	—	550	
		MHW6185–6		40	—	600	
Power Gain	50 MHz	All	G_p	18	18.5	19	dB
	450 MHz	MHW5185B		18.5	19.2	20	
	550 MHz	MHW6185B		18.8	19.5	20.5	
	600 MHz	MHW6185–6		19	19.8	21	
Slope	40–450 MHz	MHW5185B	S	0.3	—	1.8	dB
	40–550 MHz	MHW6185B		0.3	—	2.0	
	40–600 MHz	MHW6185–6		0.5	—	2.5	
Gain Flatness (Peak To Valley)		MHW5185B	—	—	—	0.4	dB
		MHW6185B		—	—	0.5	
		MHW6185–6		—	—	0.6	
Return Loss — Input/Output (Z_o = 75 Ohms)	40–450 MHz	MHW5185B	IRL/ORL	18	—	—	dB
	40–550 MHz	MHW6185B		18	—	—	
	40–600 MHz	MHW6185–6		18	—	—	
Composite Second Order			$CSO_{60/77/87}$				dB
60 ch, (V_{out} = +46 dBmV)		MHW5185B		—	–70	–67	
77 ch, (V_{out} = +44 dBmV)		MHW6185B		—	–68	–65	
87 ch, (V_{out} = +44 dBmV)		MHW6185–6		—	–60	–60	

(continued)

ELECTRICAL CHARACTERISTICS — continued (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system unless otherwise noted)

Characteristic			Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion			$XMD_{60/77/87}$				dB
(60 ch, V_{out} = +46 dBmV @ Fm = 55 MHz)		MHW5185B		—	–70	–67	
(77 ch, V_{out} = +44 dBmV @ Fm = 55 MHz)		MHW6185B		—	–78	–68	
(87 ch, V_{out} = +44 dBmV @ Fm = 55 MHz)		MHW6185–6		—	–70	–66	
Signal–to–Triple Beat Noise			$CTB_{60/77/87}$				dB
(60 ch, V_{out} = +46 dBmV)		MHW5185B		—	–68	–67	
(77 ch, V_{out} = +44 dBmV)		MHW6185B		—	–66	–65	
(87 ch, V_{out} = +44 dBmV)		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 Vdc, T_C = 30°C)			I_{DC}	380	415	440	mA

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		4.10 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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