

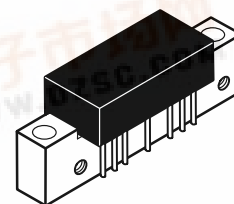
## The RF Line High Output Doubler 450/550 MHz CATV Amplifier Modules

**MHW5185B  
 MHW6185B**

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
  - $G_p = 18.5 \text{ dB Typ @ 50 MHz}$
  - $19.2 \text{ dB Typ @ 450 MHz}$
  - $19.5 \text{ dB Typ @ 550 MHz}$
- Broadband Noise Figure
  - $NF = 4.5 \text{ dB Typ @ 50 MHz}$
- Improvement in Distortion Over Conventional Hybrids
- Allows Higher Output Level Operation

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

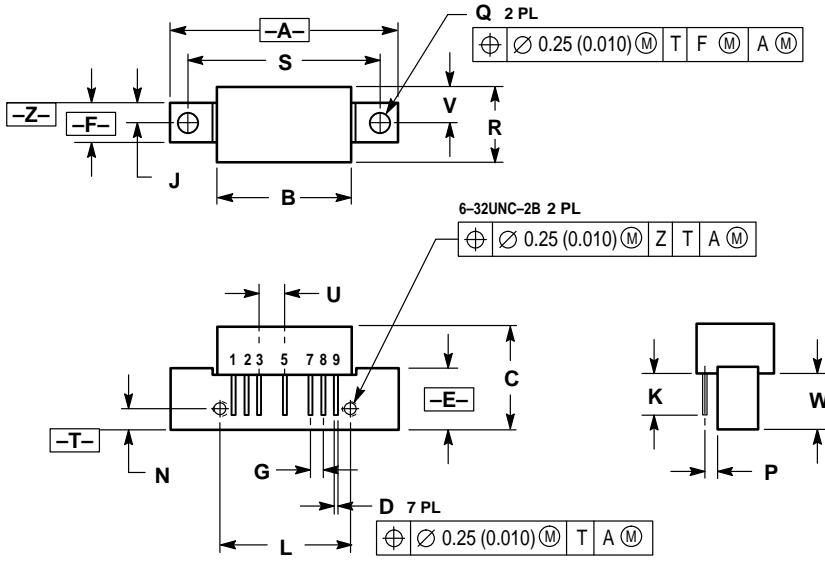
Characteristic	Symbol	Min	Typ	Max	Unit	
Frequency Range	MHW5185B MHW6185B	40 40	— —	450 550	MHz	
Power Gain	50 MHz All 450 MHz MHW5185B 550 MHz MHW6185B	18 18.5 18.8	18.5 19.2 19.5	19 20 20.5	dB	
Slope	40–450 MHz MHW5185B 40–550 MHz MHW6185B	0.3 0.3	— —	1.8 2.0	dB	
Gain Flatness (Peak To Valley)	MHW5185B MHW6185B	— —	— —	0.4 0.5	dB	
Return Loss — Input/Output ( $Z_0 = 75 \text{ Ohms}$ )	40–450 MHz MHW5185B 40–550 MHz MHW6185B	18 18	— —	— —	dB	
Composite Second Order	60 ch, ( $V_{out} = +46 \text{ dBmV}$ ) 77 ch, ( $V_{out} = +44 \text{ dBmV}$ )	MHW5185B MHW6185B	— —	-70 -68	-67 -65	dB

(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	—
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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**USA/EUROPE/Locations Not Listed:** Motorola Literature Distribution;  
P.O. Box 5405, Denver, Colorado 80217. 303-675-2140 or 1-800-441-2447

**JAPAN:** Nippon Motorola Ltd.: SPD, Strategic Planning Office, 4-32-1,  
Nishi-Gotanda, Shinagawa-ku, Tokyo 141, Japan. 81-3-5487-8488

**Mfax™:** RMFAX0@email.sps.mot.com – TOUCHTONE 602-244-6609  
– US & Canada ONLY 1-800-774-1848

**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,  
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

**INTERNET:** <http://motorola.com/sps>



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