

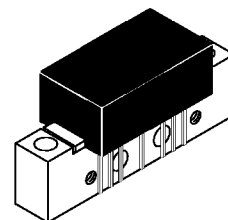
The RF Line High Output Doubler 450/550 MHz CATV Amplifier Modules

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 714Y-03, 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, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

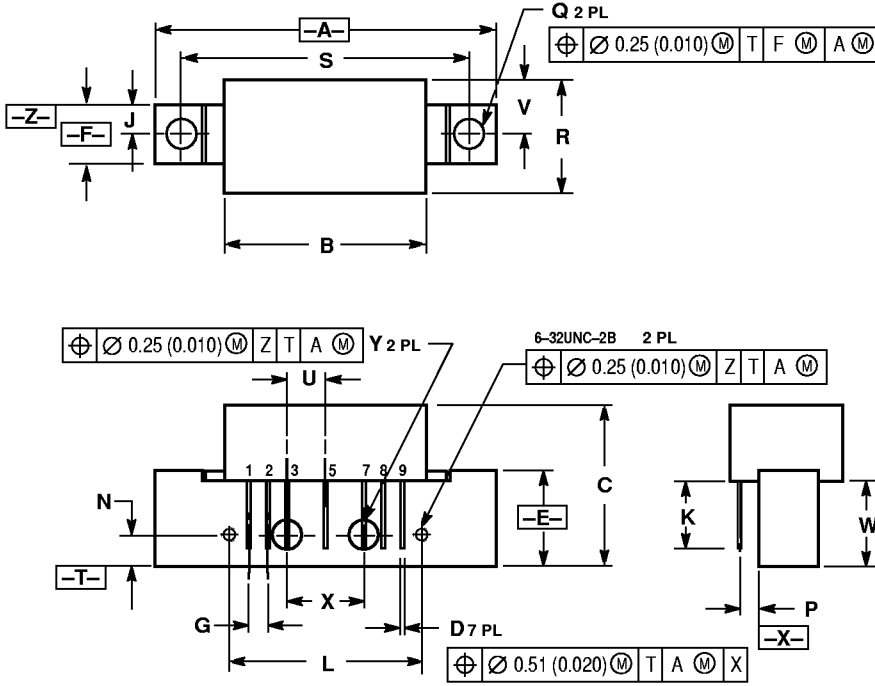
Characteristic	Symbol	Min	Typ	Max	Unit	
Frequency Range	MHW5185B MHW6185B	40 40	— —	450 550	MHz	
Power Gain	50 MHz All 450 MHz MHW5185B 550 MHz MHW6185B	18 18.5 18.8	18.5 19.2 19.5	19 20 20.5	dB	
Slope	40–450 MHz MHW5185B 40–550 MHz MHW6185B	0.3 0.3	— —	1.8 2.0	dB	
Gain Flatness (Peak To Valley)	MHW5185B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

(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, $V_{out} = +44 \text{ dBmV}$ @ $F_m = 55 \text{ MHz}$)	MHW5185B	XMD _{60/77}	—	-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 _{60/77}	—	-68	-67	dB
	MHW6185B		—	-66	-65	
Noise Figure	450 MHz	MHW5185B	—	5.5	7.0	dB
	550 MHz	MHW6185B	—	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	—	4.19 BSC	—
P	0.100 BSC	—	2.54 BSC	—
Q	0.148	0.168	3.76	4.27
R	—	0.600	—	15.24
S	1.500 BSC	—	38.10 BSC	—
U	0.200 BSC	—	5.08 BSC	—
V	—	0.250	—	6.35
W	0.435	0.450	11.05	11.43
X	0.400 BSC	—	10.16 BSC	—
Y	0.152	0.163	3.85	4.15

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

CASE 714Y-03
 ISSUE D

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Mfax is a trademark of Motorola, Inc.

How to reach us:

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

JAPAN: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 141,
4-32-1 Nishi-Gotanda, Shagawa-ku, Tokyo, Japan. 03-5487-8488

Customer Focus Center: 1-800-521-6274

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609
Motorola Fax Back System – US & Canada ONLY 1-800-774-1848
–http://sps.motorola.com/mfax/

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

HOME PAGE: <http://motorola.com/sps/>



MOTOROLA



MHW5185B/D