

# The RF Line

## High Output Doubler

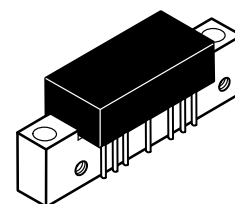
### 450 MHz CATV Amplifier

... designed specifically for 450 MHz CATV applications. Features ion-implanted arsenic emitter transistors with 6.0 to 8.0 GHz  $f_T$  and an all gold metallization system.

- 24 V Supply Voltage
- 4th Generation Die Technology
- Specified for 60-Channel Performance
- Broadband Power Gain — @  $f = 40-450$  MHz  
 $G_p = 22$  dB (Typ) @ 50 MHz  
 $23$  dB (Typ) @ 450 MHz
- Broadband Noise Figure  
 $NF = 4.5$  dB (Typ)
- Improvement in Distortion Over Conventional Hybrids
- Allows Higher Output Level Operation

**MHW5225**

**22 dB GAIN  
450 MHz  
60-CHANNEL  
CATV AMPLIFIER**



**CASE 714-06, STYLE 1**

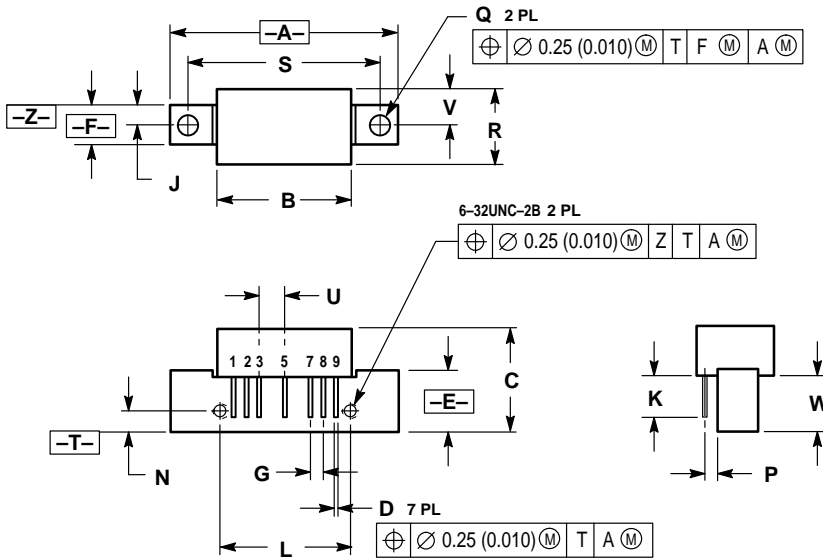
#### ABSOLUTE MAXIMUM RATINGS

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, $T_A = +25^\circ\text{C}$ , 75 $\Omega$ system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
Power Gain 50 MHz 450 MHz	$G_p$	21.4 22.3	22.0 23.0	22.6 23.7	dB
Slope	S	0.3	1.0	1.8	dB
Gain Flatness (Peak To Valley)	—	—	0.25	0.5	dB
Return Loss — Input/Output ( $Z_0 = 75$ Ohms) 40–450 MHz	IRL/ORL	18	—	—	dB
Second Order Intermodulation Distortion ( $V_{out} = +46$ dBmV per ch., Ch 2, M13, M22)	IMD	—	-74	-69	dB
Cross Modulation Distortion ( $V_{out} = +46$ dBmV per ch.) 60-Channel FLAT	XMD <sub>60</sub>	—	-67	-62	dB
Composite Triple Beat ( $V_{out} = +46$ dBmV per ch.) 60-Channel FLAT	CTB <sub>60</sub>	—	-65	-62	dB
Noise Figure 450 MHz	NF	—	4.5	6.0	dB
DC Current	$I_{DC}$	—	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:
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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MHW5225/D

