

# The RF Line

## High Output Power Doubler

### 860 MHz CATV Amplifier

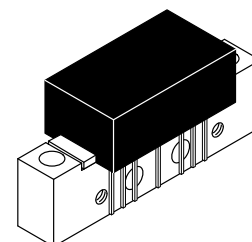
**MHW8205**

- Specified for 77, 110 and 128-Channel Performance
- Broadband Power Gain — @  $f = 40\text{--}860\text{ MHz}$   
 $G_p = 20.2\text{ dB (Typ)}$
- Broadband Noise Figure  
 $NF = 7\text{ dB (Typ)}$  @ 860 MHz
- All Gold Metallization
- 7 GHz  $f_T$  Ion-Implanted Transistors
- Composite Triple Beat — @ 128-Channel Loading  
 $CTB = -66\text{ dB (Typ)}$

**20.2 dB GAIN**  
**860 MHz**  
**128-CHANNEL**  
**CATV AMPLIFIER**

#### 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

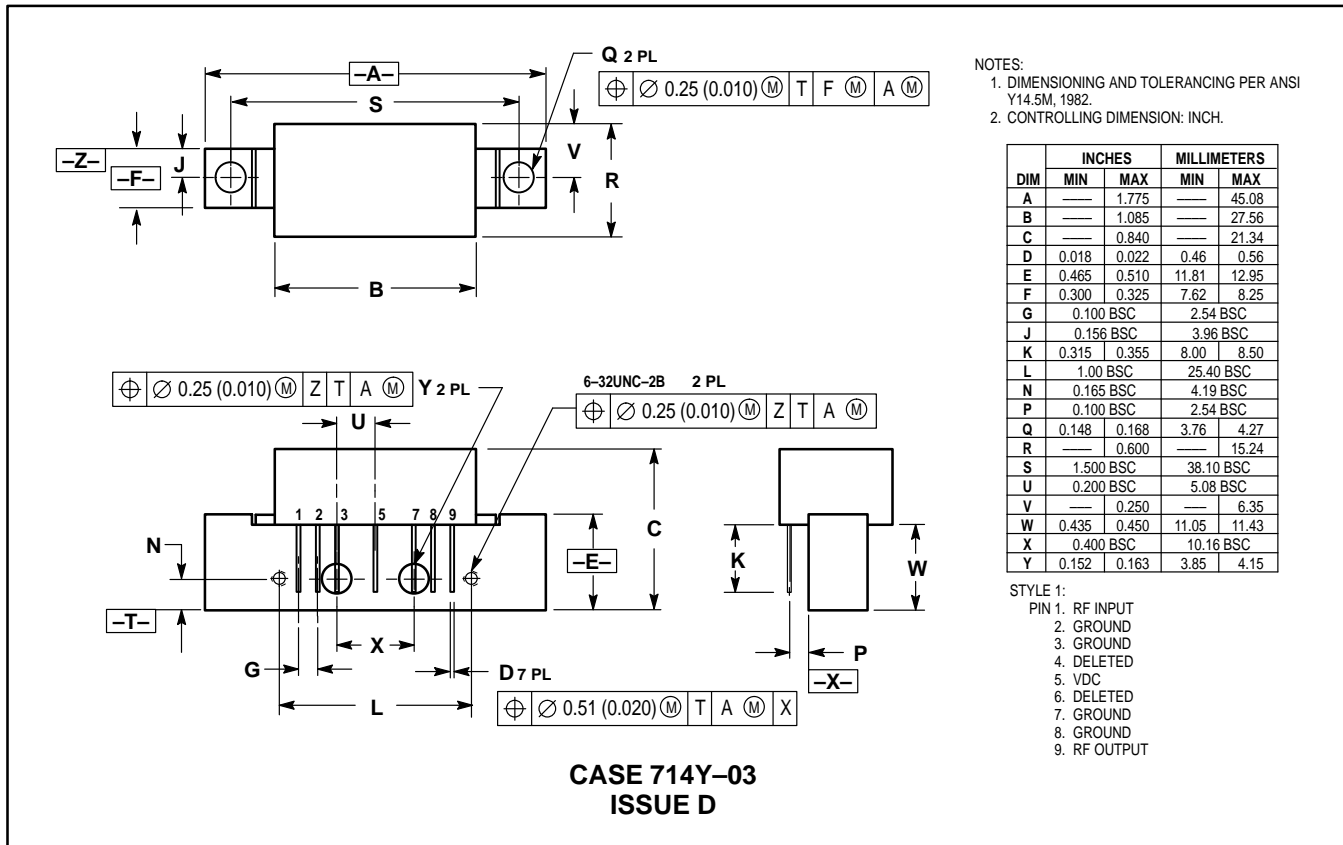


**CASE 714Y-03, STYLE 1**

#### 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	BW	40	—	860	MHz		
Power Gain	$G_p$	50 MHz	19.3	19.8	20.3	dB	
		860 MHz	20	20.2	21.5		
Slope	S	0	.4	1.5	dB		
Gain Flatness (40-860 MHz, Peak to Valley)	—	—	0.3	1.0	dB		
Return Loss — Input/Output ( $Z_0 = 75\text{ Ohms}$ )	IRL/ORL	@ 40 MHz	19	—	—	dB	
		@ $f > 40\text{ MHz}$ (Derate)	—	—	0.006	dB/MHz	
Composite Second Order						dBc	
( $V_{out} = +40\text{ dBmV/ch.}$ , Worst Case)		128-Channel FLAT	CSO <sub>128</sub>	—	-69		-60
( $V_{out} = +44\text{ dBmV/ch.}$ , Worst Case)		110-Channel FLAT	CSO <sub>110</sub>	—	-70		—
		77-Channel FLAT	CSO <sub>77</sub>	—	-80	—	
Cross Modulation Distortion @ Ch 2						dBc	
( $V_{out} = +40\text{ dBmV/ch.}$ , FM = 55 MHz)		128-Channel FLAT	XMD <sub>128</sub>	—	-72		-64
( $V_{out} = +44\text{ dBmV/ch.}$ , FM = 55 MHz)		110-Channel FLAT	XMD <sub>110</sub>	—	-65		—
		77-Channel FLAT	XMD <sub>77</sub>	—	-69	—	
Composite Triple Beat						dBc	
( $V_{out} = +40\text{ dBmV/ch.}$ , Worst Case)		128-Channel FLAT	CTB <sub>128</sub>	—	-66		-63
( $V_{out} = +44\text{ dBmV/ch.}$ , Worst Case)		110-Channel FLAT	CTB <sub>110</sub>	—	-63		—
		77-Channel FLAT	CTB <sub>77</sub>	—	-70	—	
Noise Figure	NF	50 MHz	—	5.0	6.0	dB	
		550 MHz	—	5.8	—		
		750 MHz	—	6.2	—		
		860 MHz	—	7.0	8.0		
DC Current ( $V_{DC} = 24\text{ V}$ , $T_C = 30^\circ\text{C}$ )	$I_{DC}$	365	400	435	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

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