

# The RF Line

## High Output Power Doubler

### 860 MHz CATV Amplifier

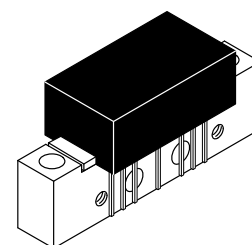
**MHW8185**

- Specified for 77, 110 and 128-Channel Performance
- Broadband Power Gain — @ f = 40–860 MHz  
G<sub>p</sub> = 19.4 dB (Typ)
- Broadband Noise Figure  
NF = 7 dB (Typ) @ 860 MHz
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7 GHz f<sub>T</sub> Ion-Implanted Transistors

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

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V <sub>in</sub>	+70	dBmV
DC Supply Voltage	V <sub>CC</sub>	+28	Vdc
Operating Case Temperature Range	T <sub>C</sub>	-20 to +100	°C
Storage Temperature Range	T <sub>stg</sub>	-40 to +100	°C

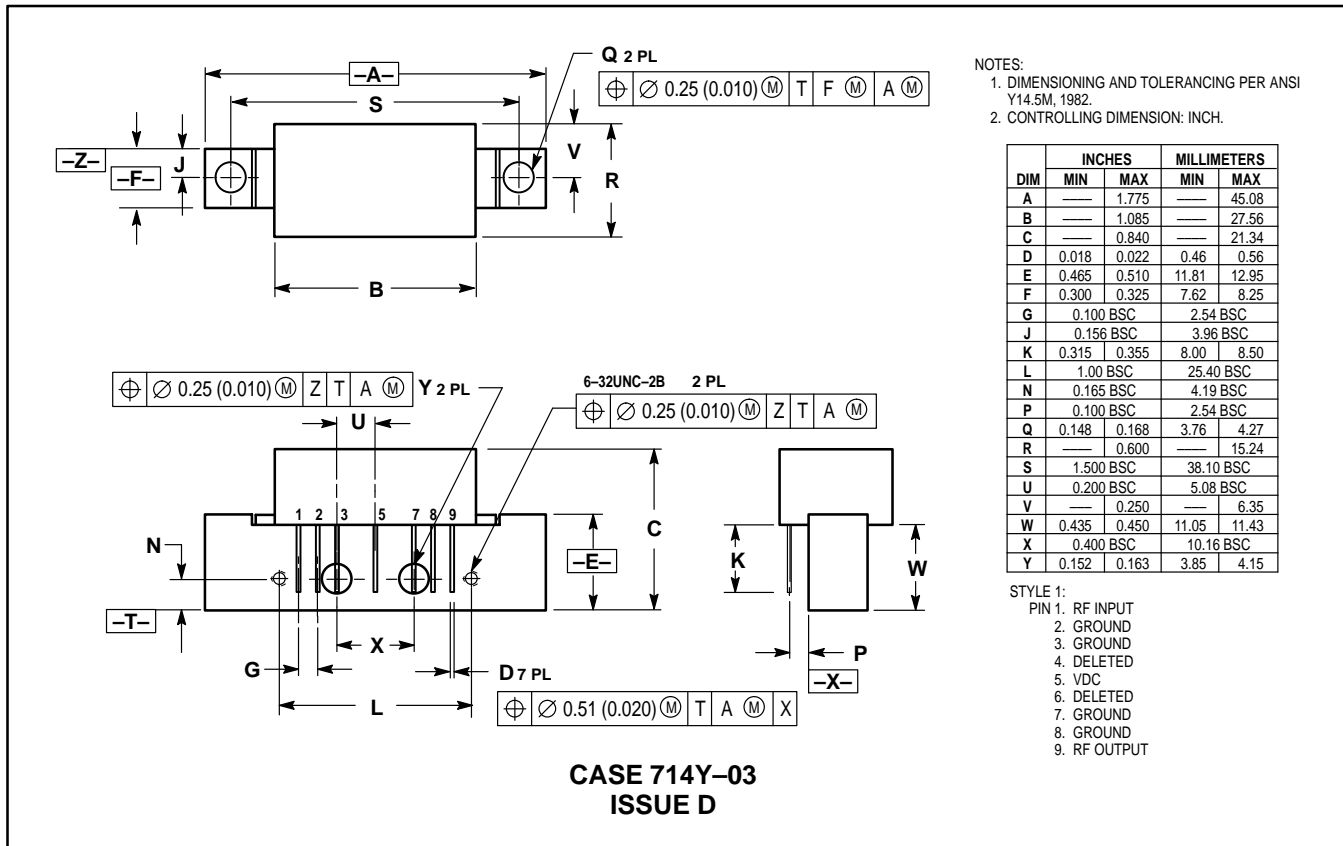


**CASE 714Y-03, STYLE 1**

#### ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 24 Vdc, T<sub>C</sub> = +30°C, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit	
Frequency Range	BW	40	—	860	MHz	
Power Gain	G <sub>p</sub>	50 MHz	18.3	19.3	dB	
		860 MHz	19	20.5		
Slope	S	0	.5	1.5	dB	
Gain Flatness (40–860 MHz, Peak to Valley)	—	—	0.3	1.0	dB	
Return Loss — Input/Output (Z <sub>0</sub> = 75 Ohms)	IRL/ORL	@ 40 MHz	19	—	dB	
		@ f > 40 MHz (Derate)	—	—		0.006
Composite Second Order	CSO <sub>128</sub> CSO <sub>110</sub> CSO <sub>77</sub>	(V <sub>out</sub> = +40 dBmV/ch., Worst Case) 128-Channel FLAT	—	-70	-62	dBc
		(V <sub>out</sub> = +44 dBmV/ch., Worst Case) 110-Channel FLAT	—	-72	—	
		77-Channel FLAT	—	-80	—	
Cross Modulation Distortion @ Ch 2	XMD <sub>128</sub> XMD <sub>110</sub> XMD <sub>77</sub>	(V <sub>out</sub> = +40 dBmV/ch., FM = 55 MHz) 128-Channel FLAT	—	-72	-64	dBc
		(V <sub>out</sub> = +44 dBmV/ch., FM = 55 MHz) 110-Channel FLAT	—	-66	—	
		77-Channel FLAT	—	-69	—	
Composite Triple Beat	CTB <sub>128</sub> CTB <sub>110</sub> CTB <sub>77</sub>	(V <sub>out</sub> = +40 dBmV/ch., Worst Case) 128-Channel FLAT	—	-67	-64	dBc
		(V <sub>out</sub> = +44 dBmV/ch., Worst Case) 110-Channel FLAT	—	-64	—	
		77-Channel FLAT	—	-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 <sub>DC</sub> = 24 V, T <sub>C</sub> = 30°C)	I <sub>DC</sub>	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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