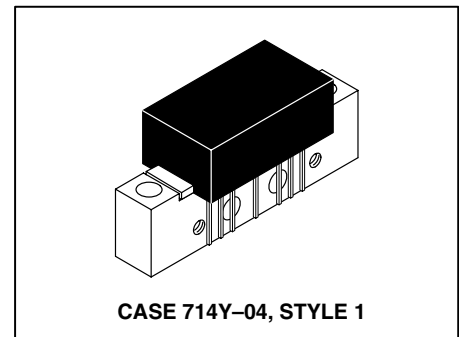


Will be replaced by MHW8185LN by end of Q206. N suffix indicates RoHS compliant part.

**MHW8185L**

**870 MHz  
 19.4 dB GAIN  
 128-CHANNEL  
 CATV AMPLIFIER MODULE**



## CATV Amplifier Module

### Features

- Specified for 77-, 110- and 128-Channel Loading
- Lower DC Current Requirements
- Excellent Distortion Performance
- Excellent DC Current Stability over Temperature
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

### Applications

- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Amplifiers Requiring Lower Power Dissipation While Maintaining Excellent Output Performance

### Description

- 24 Vdc Supply, 40 to 870 MHz, CATV Forward Power Doubler Amplifier Module

**Table 1. 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

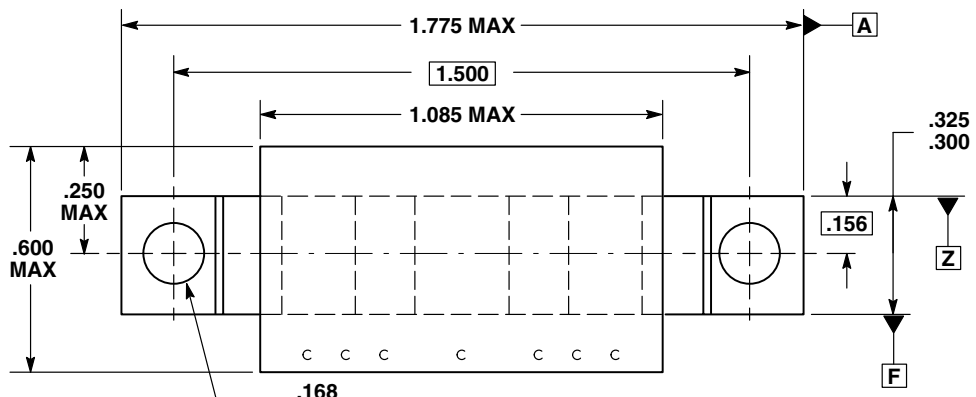
**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ , 75  $\Omega$  system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	870	MHz
Power Gain	$G_p$	18	18.5	19	dB
		19	19.4	20.5	
Slope	S	0.4	0.9	1.4	dB
Gain Flatness (40–870 MHz, Peak-to-Valley)	$G_F$	—	0.3	0.8	dB
Return Loss — Input/Output ( $Z_o = 75$ Ohms)	IRL/ORL				
@ 40 MHz		20	—	—	dB
@ $f > 40$ MHz (Derate)		—	—	0.007	dB/MHz
Composite Second Order					dBc
( $V_{out} = +40$ dBmV/ch., Worst Case) 128-Channel FLAT	$CSO_{128}$	—	-69	-62	
( $V_{out} = +44$ dBmV/ch., Worst Case) 110-Channel FLAT	$CSO_{110}$	—	-70	-64	
( $V_{out} = +44$ dBmV/ch., Worst Case) 77-Channel FLAT	$CSO_{77}$	—	-85	-68	

**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ ,  $75\ \Omega$  system unless otherwise noted) (continued)

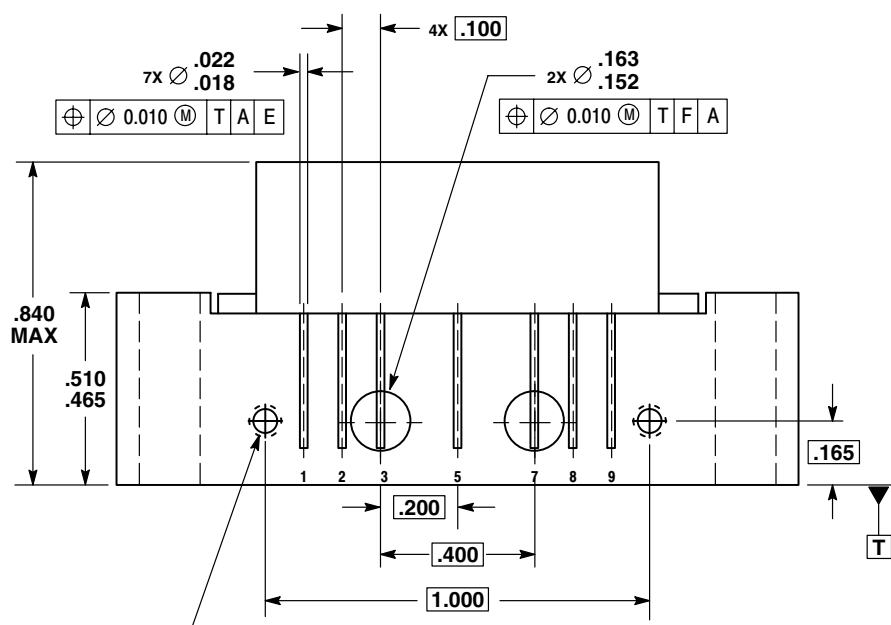
Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2 ( $V_{out} = +40$ dBmV/ch., FM = 55 MHz)	128-Channel FLAT	$XMD_{128}$	—	-72	-64	dBc
	( $V_{out} = +44$ dBmV/ch., FM = 55 MHz)	110-Channel FLAT	—	-66	-63	
	( $V_{out} = +44$ dBmV/ch., FM = 55 MHz)	77-Channel FLAT	—	-69	-67	
Composite Triple Beat ( $V_{out} = +40$ dBmV/ch., Worst Case)	128-Channel FLAT	$CTB_{128}$	—	-66	-63	dBc
	( $V_{out} = +44$ dBmV/ch., Worst Case)	110-Channel FLAT	—	-63	-61	
	( $V_{out} = +44$ dBmV/ch., Worst Case)	77-Channel FLAT	—	-70	-68	
Noise Figure	50 MHz	NF	—	5.3	6.2	dB
	550 MHz		—	5.8	—	
	750 MHz		—	6.6	—	
	870 MHz		—	7.8	8.5	
DC Current ( $V_{DC} = 24$ V, $T_C = -20$ to $+100^\circ\text{C}$ )		$I_{DC}$	345	365	385	mA

# PACKAGE DIMENSIONS



2X  $\varnothing .168$   
 $\varnothing .148$   
 $\varnothing 0.010$  (M) T F A

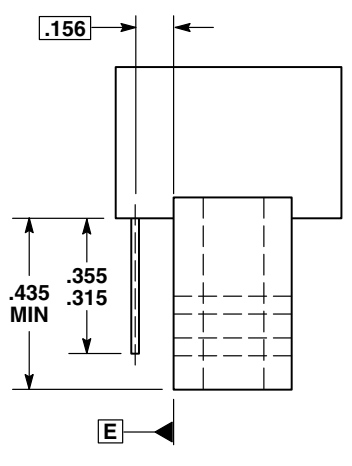
- STYLE 1:  
 PIN 1. RF INPUT  
 2. GROUND  
 3. GROUND  
 4. DELETED  
 5. VDC  
 6. DELETED  
 7. GROUND  
 8. GROUND  
 9. RF OUTPUT



7X  $\varnothing .022$   
 $\varnothing .018$   
 $\varnothing 0.010$  (M) T A E

2X  $\varnothing .163$   
 $\varnothing .152$   
 $\varnothing 0.010$  (M) T F A

2X #6-32 UNC-2B  
 $\varnothing 0.010$  (M) Z T A



- NOTES:  
 1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.  
 2. CONTROLLING DIMENSION: INCH.

## CASE 714Y-04 ISSUE E

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