

The RF Line CATV Amplifier Module

Features

- Specified for 77-, 110- and 128-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

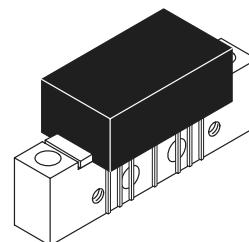
- CATV Systems Operating in the 40 to 860 MHz Frequency Range
- Output Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications

Description

- 24 Vdc Supply, 40 to 860 MHz, CATV Forward Power Doubler Amplifier

MHW8185

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



CASE 714Y-04, STYLE 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

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	BW	40	—	860	MHz
Power Gain 50 MHz 860 MHz	G_p	18.3 19	18.8 19.4	19.3 20.5	dB
Slope 40–860 MHz	S	0	.5	1.5	dB
Gain Flatness (40–860 MHz, Peak to Valley)	G_F	—	0.3	1.0	dB
Return Loss — Input/Output ($Z_0 = 75$ Ohms) @ 40 MHz @ $f > 40$ MHz (Derate)	IRL/ORL	19 —	— —	— 0.006	dB dB/MHz
Composite Second Order ($V_{out} = +40$ dBmV/ch., Worst Case) ($V_{out} = +44$ dBmV/ch., Worst Case) 128-Channel FLAT 110-Channel FLAT 77-Channel FLAT	CSO_{128} CSO_{110} CSO_{77}	— — —	-70 -72 -80	-62 -64 -68	dBc
Cross Modulation Distortion @ Ch 2 ($V_{out} = +40$ dBmV/ch., FM = 55 MHz) ($V_{out} = +44$ dBmV/ch., FM = 55 MHz) 128-Channel FLAT 110-Channel FLAT 77-Channel FLAT	XMD_{128} XMD_{110} XMD_{77}	— — —	-72 -67 -70	-64 -63 -68	dBc

Freescale Semiconductor, Inc.

ELECTRICAL CHARACTERISTICS – continued ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Composite Triple Beat ($V_{out} = +40$ dBmV/ch., Worst Case) ($V_{out} = +44$ dBmV/ch., Worst Case)	128–Channel FLAT	CTB_{128}	—	–67	–64	dBc
	110–Channel FLAT	CTB_{110}	—	–64	–62	
	77–Channel FLAT	CTB_{77}	—	–71	–69	
Noise Figure	50 MHz	NF	—	5.0	6.0	dB
	550 MHz		—	5.8	—	
	750 MHz		—	6.2	—	
	860 MHz		—	7.0	8.0	
DC Current ($V_{DC} = 24$ V, $T_C = 30^\circ\text{C}$)		I_{DC}	365	400	435	mA

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