The RF Line
CATV Amplifier Module

MHW8185L

870 MHz
19.4 dB GAIN
128–CHANNEL
CATV AMPLIFIER

Features

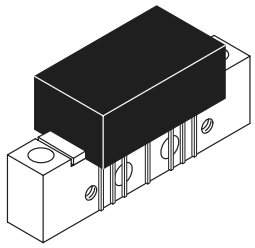
- Specified for 77–, 110– and 128–Channel Loading
- Lower DC Current Requirements
- Excellent Distortion Performance
- Excellent DC Current Stability over Temperature
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

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



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°C, 75 Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	870	MHz
Power Gain	50 MHz 870 MHz	G_p	18 19	18.5 19.4	19 20.5	dB
Slope	40–870 MHz	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) @ 40 MHz @ f > 40 MHz (Derate)		IRL/ORL	 20 —	 — —	 — 0.007	 dB dB/MHz
Composite Second Order (V_{out} = +40 dBmV/ch., Worst Case) (V_{out} = +44 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}	 — — —	 –69 –70 –85	 –62 –64 –68	dBc

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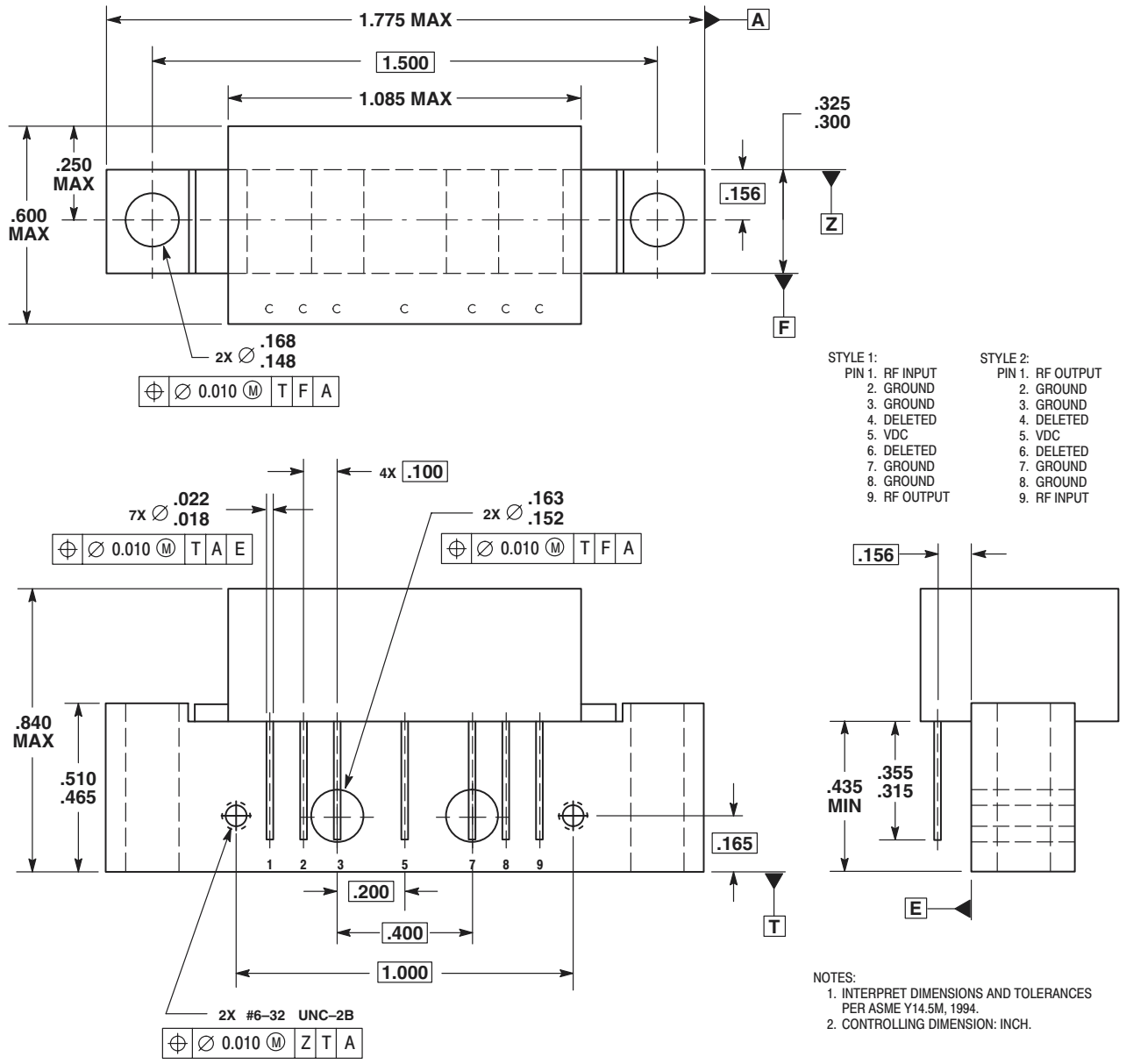
ELECTRICAL CHARACTERISTICS — continued (V_{CC} = 24 Vdc, T_C = +30°C, 75 Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion @ Ch 2						dBc
(V_{out} = +40 dBmV/ch., FM = 55 MHz)	128–Channel FLAT	XMD_{128}	—	–72	–64	
(V_{out} = +44 dBmV/ch., FM = 55 MHz)	110–Channel FLAT	XMD_{110}	—	–66	–63	
(V_{out} = +44 dBmV/ch., FM = 55 MHz)	77–Channel FLAT	XMD_{77}	—	–69	–67	
Composite Triple Beat						dBc
(V_{out} = +40 dBmV/ch., Worst Case)	128–Channel FLAT	CTB_{128}	—	–66	–63	
(V_{out} = +44 dBmV/ch., Worst Case)	110–Channel FLAT	CTB_{110}	—	–63	–61	
(V_{out} = +44 dBmV/ch., Worst Case)	77–Channel FLAT	CTB_{77}	—	–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°C)		I_{DC}	345	365	385	mA

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PACKAGE DIMENSIONS



CASE 714Y–04
ISSUE E

Freescale Semiconductor, Inc.

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How to reach us:
USA/EUROPE/Locations Not Listed: Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 1–303–675–2140 or 1–800–441–2447

JAPAN: Motorola Japan Ltd.; SPS, Technical Information Center, 3–20–1, Minami–Azabu. Minato–ku, Tokyo 106–8573 Japan. 81–3–3440–3569

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre, 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T. Hong Kong. 852–26668334

Technical Information Center: 1–800–521–6274

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