MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

CA5600

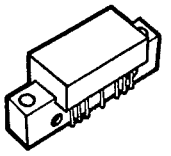
34 dB
40–450 MHz
60-CHANNEL CATV
LINE EXTENDER
AMPLIFIER

The RF Line

60-Channel (450 MHz) CATV Line Extender Amplifier

. . . designed for broadband applications requiring low-distortion amplification. Specifically intended for CATV market requirements. This amplifier features ion-implanted arsenic emitter transistors and an all gold metallization system.

- Specified Characteristics at V_{CC} = 24 V, T_C = 25°C:
  - Frequency Range — 40 to 450 MHz
  - Power Gain — 34 dB Typ @ f = 50 MHz
  - Noise Figure — 6 dB Max @ f = 450 MHz
  - CTB — −58 dB Max @ V_{out} = 46 dBmV
- All Gold Metallization for Improved Reliability
- Superior Gain, Return Loss and DC Current Stability with Temperature



CA
CASE 714F-01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+50	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

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ELECTRICAL CHARACTERISTICS (V_{CC} = 24 V, T_C = 25°C, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
Power Gain — 50 MHz	G_P	33	34	35	dB
Slope	S	+0.5	—	+2	dB
Gain Flatness	—	—	—	±0.4	dB
Return Loss — Input/Output (f = 40–450 MHz)	IRL/ORL	18	—	—	dB
Second Order Intermodulation Distortion (V_{out} = +50 dBmV per ch., ch. 2, H5, H14)	IMD	—	—	−64	dB
Cross Modulation Distortion (V_{out} = +46 dBmV per ch., ch. 2, 60-channel flat)	XMD_{60}	—	—	−58	dB
Composite Triple Beat (V_{out} = +46 dBmV per ch., ch. H22, 60-channel flat)	CTB_{60}	—	—	−58	dB
Noise Figure (f = 50 MHz) (f = 450 MHz)	NF	— —	— —	4.5 6	dB
DC Current	I_{DC}	—	310	—	mA