MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

CA3170
CA3170R
CA3270
CA3270R

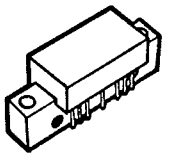
17 dB
40–330 MHz
40-CHANNEL
CATV INPUT/OUTPUT
TRUNK AMPLIFIERS

The RF Line

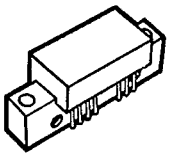
40-Channel (330 MHz) CATV Input/Output Trunk Amplifiers

. . . designed for broadband applications requiring low-distortion amplification. Specifically intended for CATV market requirements. These amplifiers feature ion-implanted arsenic emitter transistors and an all gold metallization system. The input amplifier is tuned for minimum noise while the output amplifier is tuned for minimum distortion.

- Broadband Power Gain — @ f = 40–330 MHz
  G_P = 17.2 dB Typ @ f = 50 MHz
- Broadband Noise Figure — @ f = 330 MHz
  NF = 6 dB Max @ f = 330 MHz (CA3170)
- Low Distortion @ V_{out} = 46 dBmV
  CTB = −65 dB Max (CA3270)
- Available for Both Positive and Negative Supply Voltages
- All Gold Metallization for Improved Reliability



CA (POS. SUPPLY)
CASE 714F-01, STYLE 1
CA3170/CA3270



CA (NEG. SUPPLY)
CASE 714H-01, STYLE 1
CA3170R/CA3270R

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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	66	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 V, T_C = 25°C, 75 Ω system unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range		BW	40	—	330	MHz
Power Gain — 50 MHz		G_P	16.7	17.2	17.7	dB
Slope		S	+0.1	—	+1.3	dB
Gain Flatness		—	—	—	±0.15	dB
Return Loss — Input/Output (f = 40–330 MHz)		IRL/ORL	18	—	—	dB
Second Order Intermodulation Distortion (V_{out} = +50 dBmV per ch., ch. 2, 13, R)	CA3270,R CA3170,R	IMD	— —	— —	−70 −68	dB
Cross Modulation Distortion (V_{out} = +46 dBmV per ch., ch. 2 — 40-channel flat)	CA3270,R CA3170,R	XMD	— —	— —	−63 −59	dB
Composite Triple Beat (V_{out} = +46 dBmV per ch., ch. H2 — 40-channel flat)	CA3270,R CA3170	CTB	— —	— —	−65 −61	dB
Noise Figure (f = 330 MHz)	CA3270,R CA3170,R	NF	— —	— —	6.5 6	dB
DC Current	CA3270,R CA3170,R	I_{DC}	— —	210 170	— —	mA