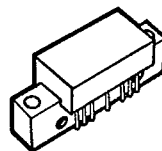


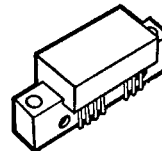
MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA
The RF Line
**60-Channel (450 MHz) CATV
Input/Output Trunk Amplifiers**

... 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 figure while the output amplifier is tuned for minimum distortion.

- Specified Characteristics at $V_{CC} = 24\text{ V}$, $T_C = 25^\circ\text{C}$:
 Frequency Range — 40 to 450 MHz
 Power Gain — 18.2 dB Typ @ $f = 50\text{ MHz}$
 Noise Figure — 6.5 dB Max @ $f = 450\text{ MHz}$ (CA5101)
 CTB — -59 dB @ $V_{out} = 46\text{ dBmV}$ (CA5201)
- All Gold Metallization System for Improved Reliability
- Available in Both Positive and Negative Supply Voltages

CA5101
CA5101R
CA5201
CA5201R
18 dB
40-450 MHz
60-CHANNEL
CATV INPUT/OUTPUT
TRUNK AMPLIFIERS


CA (POS. SUPPLY)
CASE 714F-01, STYLE 1
CA5101/CA5201



CA (NEG. SUPPLY)
CASE 714H-01, STYLE 1
CA5101R/CA5201R

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
RF Voltage Input (Single Tone)	V_{in}	+65	dBmV
DC Supply Voltage	V_{CC}	28	Vdc
Operating Case Temperature Range	T_C	-20 to +100	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +100	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($V_{CC} = 24\text{ V}$, $T_C = 25^\circ\text{C}$, 75 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	40	—	450	MHz
Power Gain — 60 MHz	G_P	17.7	18.2	18.7	dB
Slope	S	+0.3	—	+1.5	dB
Gain Flatness	—	—	—	± 0.2	dB
Return Loss — Input/Output ($f = 50\text{--}450\text{ MHz}$)	IRL/ORL	18	—	—	dB
Second Order Intermodulation Distortion ($V_{out} = +50\text{ dBmV}$ per ch., ch. 2, H5, H14)	CA5201,R CA5101,R	IMD	—	—	dB
		—	—	-68 -64	
Cross Modulation Distortion ($V_{out} = +46\text{ dBmV}$ per ch., ch. 2, 60-channel flat)	CA5201,R CA5101,R	XMD ₆₀	—	—	dB
		—	—	-59 -55	
Composite Triple Beat ($V_{out} = +46\text{ dBmV}$ per ch., ch. H22, 60-channel flat)	CA5201,R CA5101,R	CTB	—	—	dB
		—	—	-59 -55	
Noise Figure ($f = 450\text{ MHz}$)	CA5201,R CA5101,R	NF	—	—	dB
		—	—	7 6.5	
DC Current	CA5201,R CA5101,R	I_{DC}	—	215 175	mA
		—	—	—	