

MOTOROLA SEMICONDUCTOR TECHNICAL DATA

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by MHW5183/D

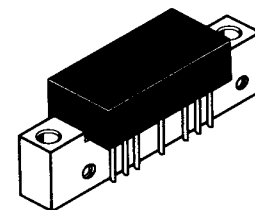
The RF Line 60-Channel (450 MHz) & 77-Channel (550 MHz) CATV Low Noise Amplifiers

...designed specifically for up to 550 MHz CATV systems as input amplifiers in trunk and line extender applications. Both amplifiers feature ion-implanted, arsenic emitter transistors with 8.0 GHz f_T and an all gold metallization system.

- Specified for 60/77-Channel Performance
- Broadband Power Gain — @ $f = 40 - 550$ MHz
 - $G_P = 18.5$ dB Typ @ 50 MHz
 - 19.1 dB Typ @ 450 MHz
 - 19.5 dB Typ @ 550 MHz
- Broadband Noise Figure
 - NF = 4.5 dB Typ — MHW5183
 - 5.0 dB Typ — MHW6183
- Superior Gain, Return Loss and DC Current Stability with Temperature

**MHW5183
MHW6183**

**18 dB GAIN
450/550 MHz
60/77 CHANNEL
LOW NOISE
CATV AMPLIFIERS**



CASE 714-04

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	+28	Vdc
RF Input Voltage (Single Tone)	V_{IN}	+70	dBmV
Operating Case Temperature Range	T_C	-30 to +100	°C
Storage Temperature Range	T_{stg}	-30 to +100	°C

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

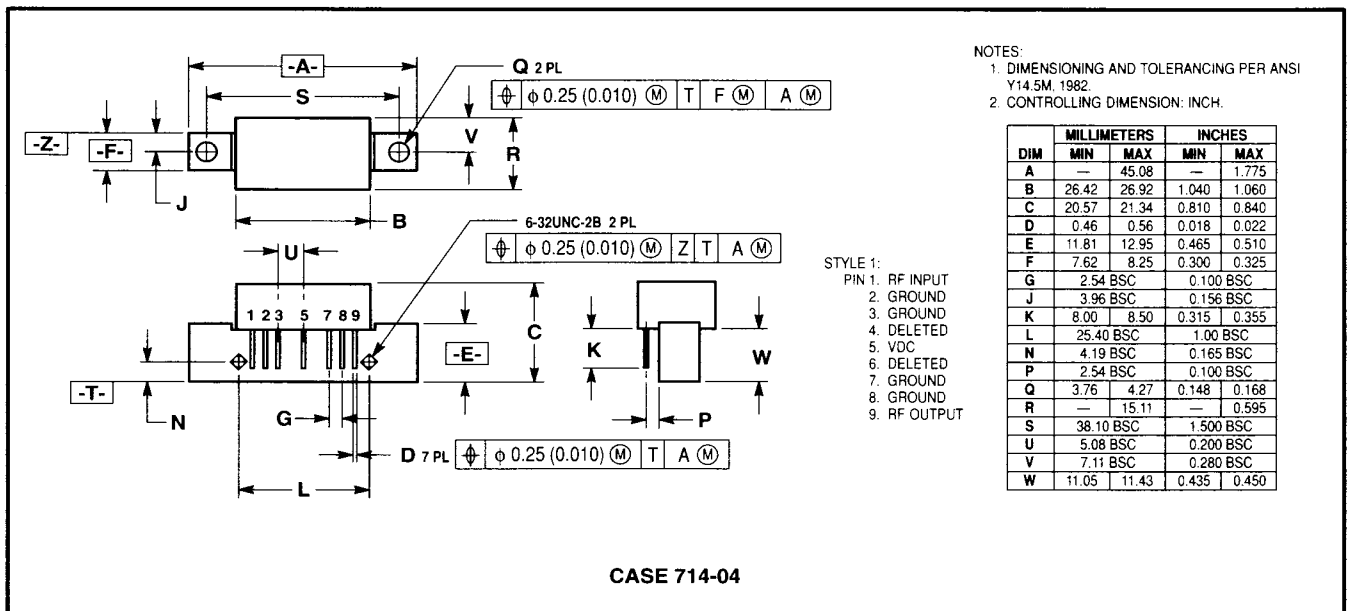
Characteristic		Symbol	Min	Typ	Max	Unit
Frequency Range	MHW5183 MHW6183	BW	40 40	— —	450 550	MHz
Power Gain	50 MHz 450 MHz 550 MHz	G_P	18 18.7 19	18.5 19.1 19.5	19 20.2 20.5	dB
Slope	MHW5183 MHW6183	S	0.3 0.5	0.7 1.0	1.8 2.0	
Gain Flatness (Peak To Valley)	MHW5183 MHW6183	—	— —	0.3 0.4	0.4 0.5	
Input/Output Return Loss	MHW5183 MHW6183	IRL/ORL	18	—	—	dB
Composite Second Order	MHW5183; $V_{OUT} = +46$ dBmV/ch MHW6183; $V_{OUT} = +44$ dBmV/ch	CSO_{60} CSO_{77}	— —	-65 -60	-62 -58	dB



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

Characteristic		Symbol	Min	Typ	Max	Unit
Cross Modulation Distortion ($V_{out} = +46 \text{ dBmV/ch}$, 60-Channel FLAT) ($V_{out} = +44 \text{ dBmV/ch}$, 77-Channel FLAT)	MHW5183 MHW6183	XMD_{60} XMD_{77}	— —	-59 -60	-58 -58	dBc
Composite Triple Beat ($V_{out} = +46 \text{ dBmV/ch}$, 60-Channel FLAT) ($V_{out} = +44 \text{ dBmV/ch}$, 77-Channel FLAT)	MHW5183 MHW6183	CTB_{60} CTB_{77}	— —	-62 -60	-60 -58	dBc
Noise Figure	MHW5183 MHW6183	NF	— — —	3.6 4.5 5.0	4.0 5.0 5.5	dB
DC Current		I_{DC}	—	245	265	mA

OUTLINE DIMENSIONS



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