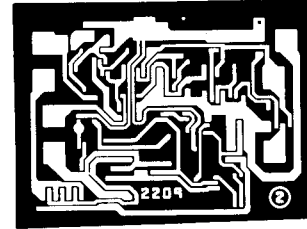


**ULN-2209M I-F GAIN BLOCK
WITH VOLTAGE REGULATOR**

**ULN-2209M
I-F GAIN BLOCK WITH
VOLTAGE REGULATOR**

FEATURES

- Gain at 10.7MHz: 50dB Typical
- Operating Voltage Range: 10V–20V
- Excellent Temperature Stability
- Power Supply Rejection Ratio: 40dB Typical
- 8-Pin Dual In-Line Plastic Package

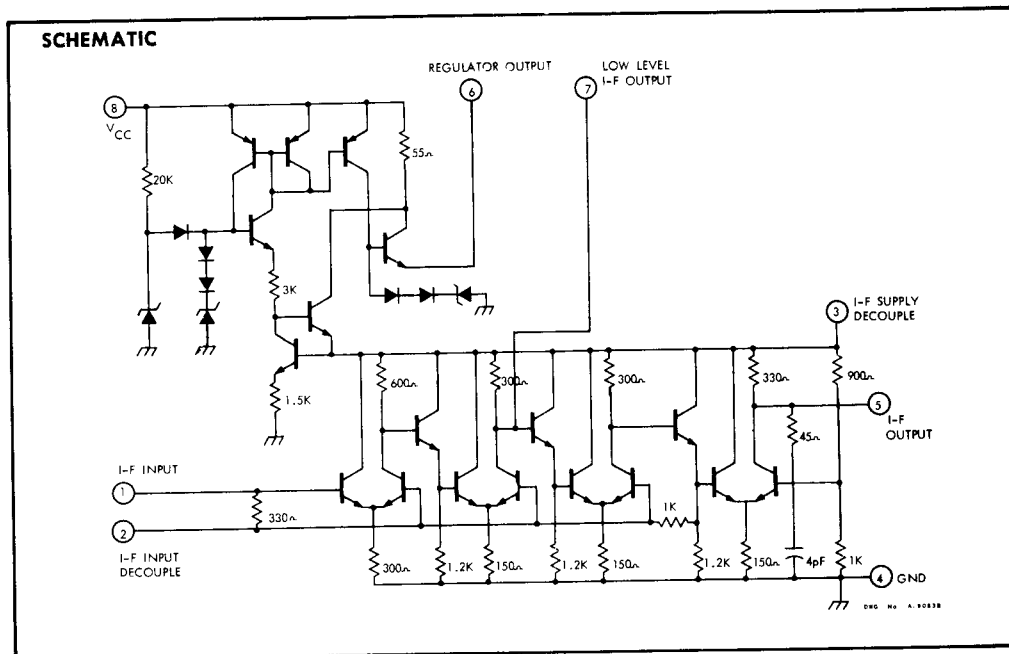


THE TYPE ULN-2209M provides the function of a i-f gain block and is designed for use in communications and f-m receivers.

The device consists of a four-stage limiting amplifier operating from a regulated power supply, and 330Ω input and output terminations with 7.0 pF of shunt capacitance required for 10.7 MHz ceramic filters. The Type ULN-2209M offers a 7.7 volt regulated supply for external use from pin 6.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage V_{CC}	30V
Supply Current, I_{CC}	3.0mA
Input Voltage (Pins 1 and 3)	$\pm 3.0V$
Output Current (Pin 6)	10mA
Operating Temperature, T_A	$-25^{\circ}C$ to $+70^{\circ}C$
Storage Temperature, T_{STG}	$-65^{\circ}C$ to $+150^{\circ}C$



**ULN-2209M I-F GAIN BLOCK
WITH VOLTAGE REGULATOR (Cont'd)**

STATIC ELECTRICAL CHARACTERISTICS

Operating Conditions $T_A = 25^\circ\text{C}$, $V_{CC} = +12\text{V}$

Parameter	Symbol	Test Pin	Test Figure	Test Conditions	Limits		
					Min.	Typ.	Max. Units
Supply Current	I_{CC}	8	1		11	18	25 mA
Total Device Dissipation	P_d	—	—				400 mW
Terminal Voltage (See Note 1)	V_1	1	1			1.4	V
	V_2	2	1			1.4	V
	V_3	3	1			2.6	V
	V_5	5	1			2.0	V
	V_6	6		$I_C = 5\text{mA}$	7.2	7.8	8.3 V
	V_7	7	1			2.0	V

Note 1. All d-c voltage readings are with respect to network ground.

DYNAMIC ELECTRICAL CHARACTERISTICS

Operating Conditions: $T_A = 25^\circ\text{C}$, $V_{CC} = +12\text{V}$, Frequency = 10.7MHz unless otherwise noted

Parameter	Symbol	Test Pin	Test Figure	Test Conditions	Limits		
					Min.	Typ.	Max. Units
Input Limiting Threshold (at -3dB point)	V_{TH}	1	1			500	μV
Output Voltage Swing	V_{OM}	5	1		110		mVrms
Output Noise Voltage		5	2			4	16 mVrms
Input Impedance	R_{in}	1-2	—		270	330	390 Ω
	C_{in}	1-2	—		5	7	10 pF
Output Impedance	R_{out}	5	—		270	330	390 Ω
	C_{out}	5	—		5	7	10 pF
Output Voltage Gain	AV_{out}	5	1	$V_{in} = 100\text{mVrms}$, $f = 10.7\text{MHz}$	40	50	57 dB
Power Supply Rejection	V_{SR}	5	3	$V_{in} = 250\text{mVrms}$, $f = 100\text{Hz}$	-40		dB

2

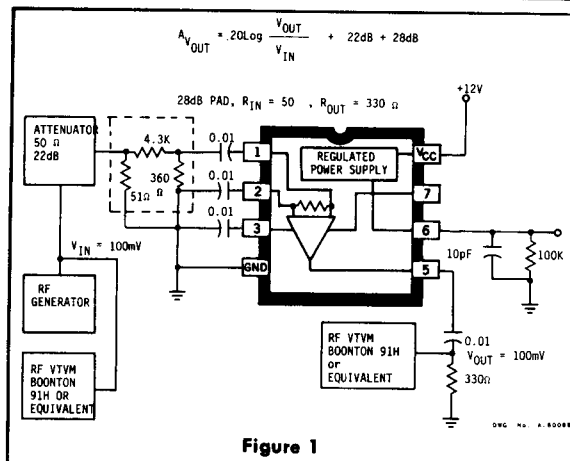


Figure 1

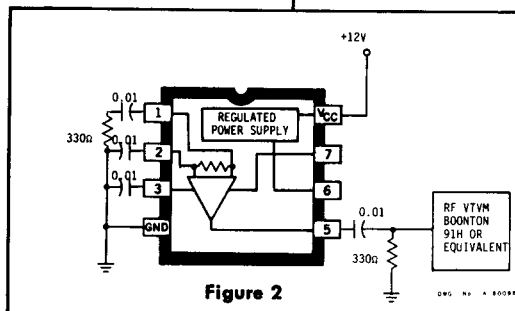


Figure 2

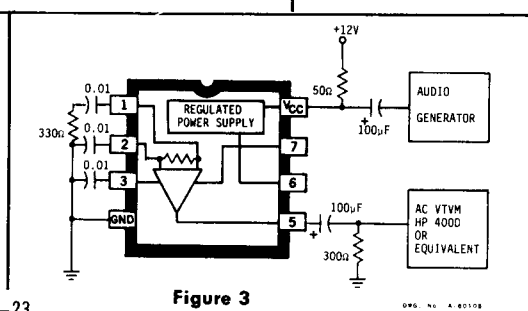


Figure 3