

GENERAL FEATURES

- Positive bias only
- Low gate voltages
- Enhancement mode operation
- Zener diode gate protection
- Ion implanted for greater reliability

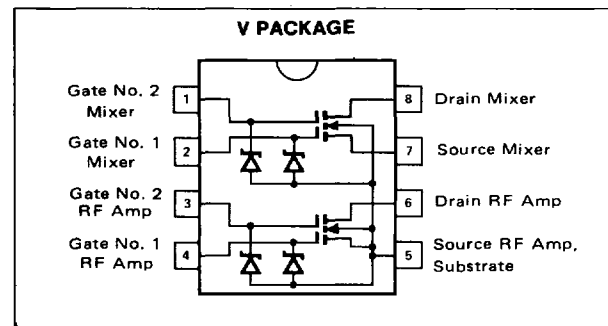
FEATURES (RF AMP Section)

- High power gain without neutralization—25dB at 100MHz
- Low noise figure—2.5dB at 100MHz
- Low input and output capacitances constant with AGC—3.0pF and 1.0pF
- Low feedback capacitance—0.025pF
- Superior cross modulation performance
- High transconductance—15mmhos
- Wide AGC range—50dB at 100MHz

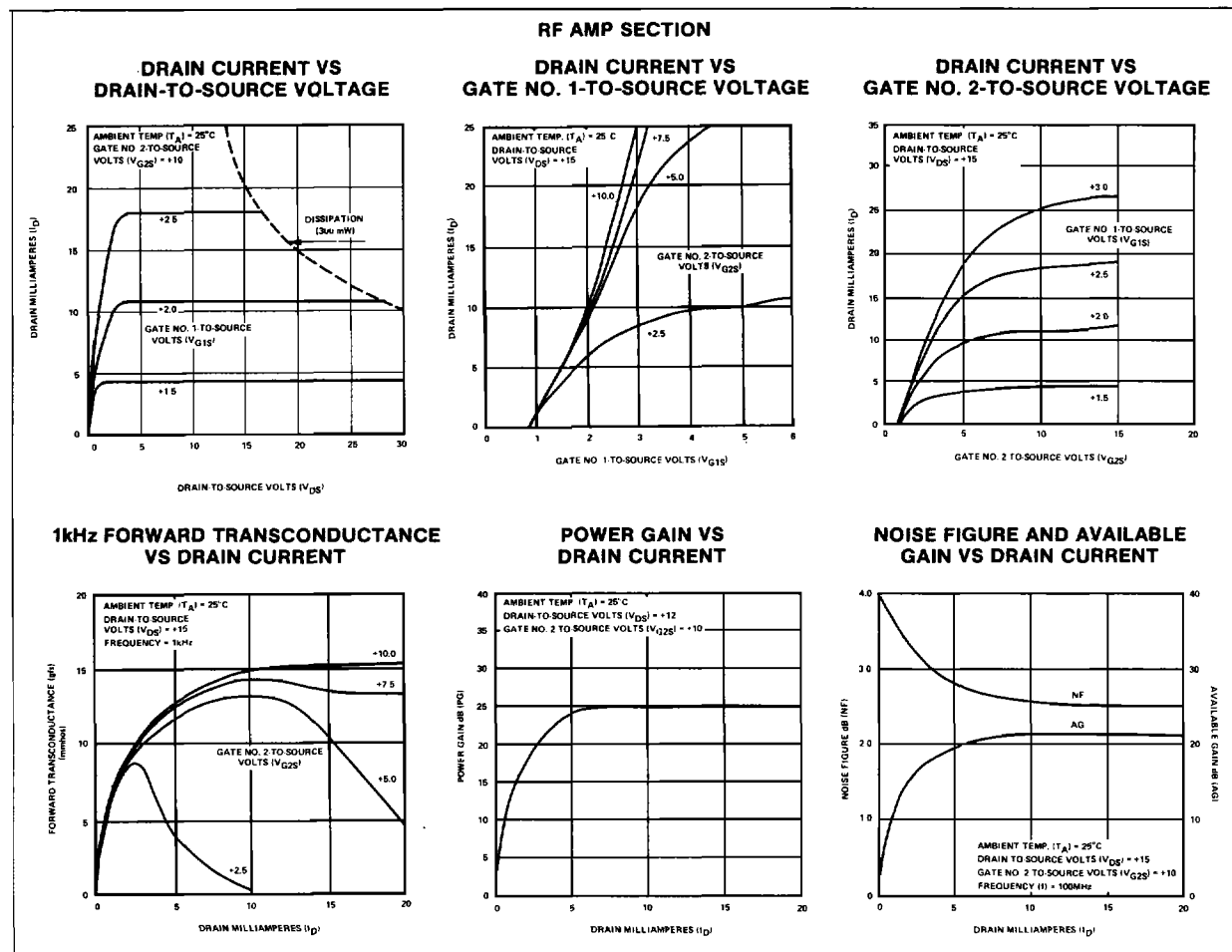
FEATURES (Mixer Section)

- High conversion gain—17dB at 100MHz with VG1S = VG2S for biasing simplicity
- Excellent isolation from gate no. 1 (RF) to gate no. 2 (LO)
- Low input capacitance—4.0pF
- Low feedback capacitance—0.03pF
- Excellent cross modulation performance and low noise operation
- High conversion transconductance at low drain currents—10mmhos

PIN CONFIGURATION

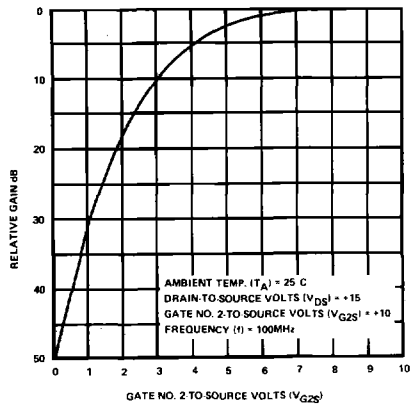


CHARACTERISTIC CURVES

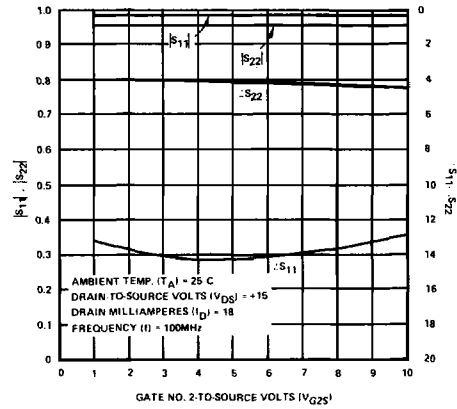


CHARACTERISTIC CURVES (Continued)

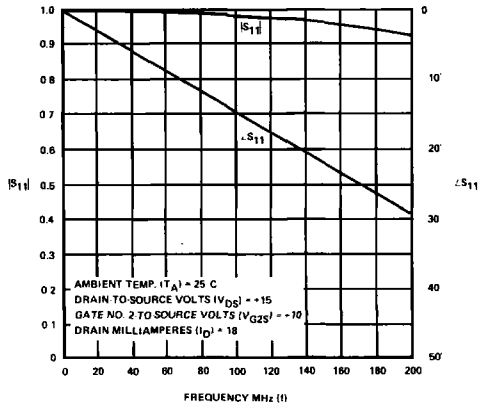
AUTOMATIC GAIN CONTROL RANGE



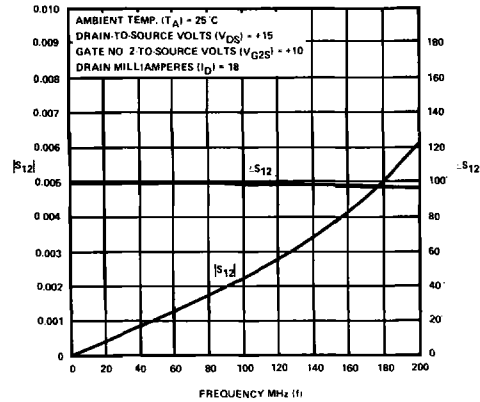
S11 AND S22 VS GATE NO. 2-TO-SOURCE VOLTAGE



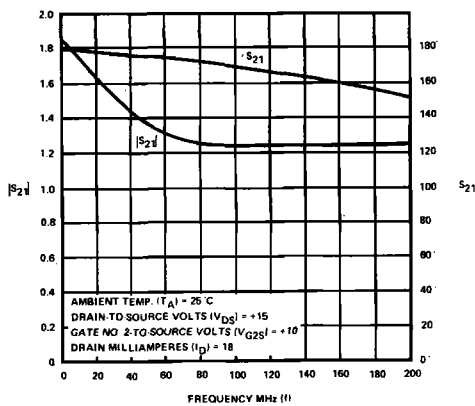
S11 VS FREQUENCY



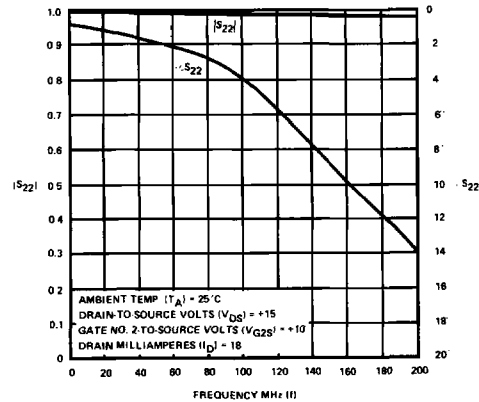
S12 VS FREQUENCY



S21 VS FREQUENCY



S22 VS FREQUENCY

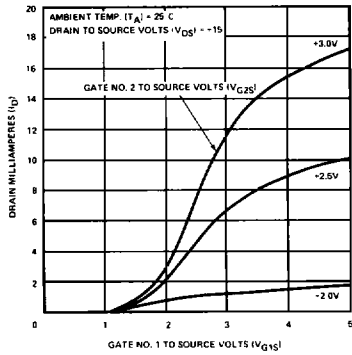


ANALOG

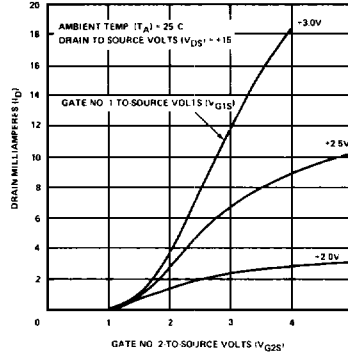
CHARACTERISTIC CURVES (Continued)

MIXER SECTION

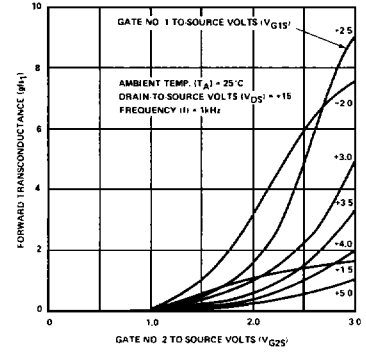
DRAIN CURRENT VS GATE NO. 1-TO-SOURCE VOLTAGE



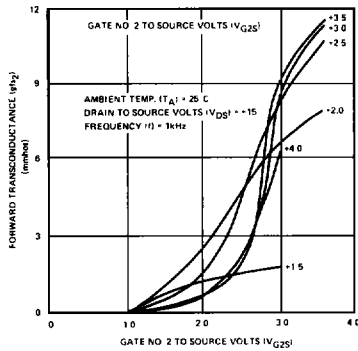
DRAIN CURRENT VS GATE NO. 2-TO-SOURCE VOLTAGE



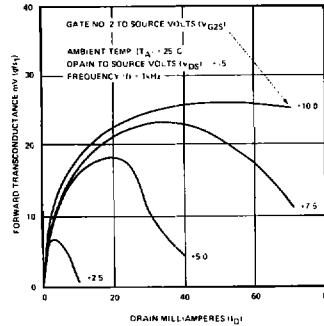
GATE NO. 1 FORWARD TRANSCONDUCTANCE VS GATE NO. 2-TO-SOURCE VOLTAGE



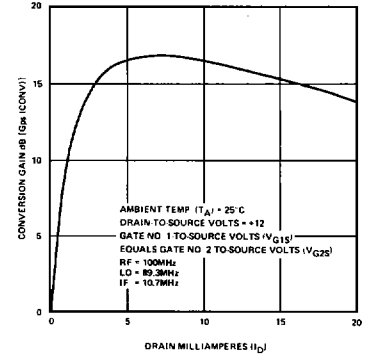
GATE NO. 2 FORWARD TRANSCONDUCTANCE VS GATE NO. 1-TO-SOURCE VOLTAGE



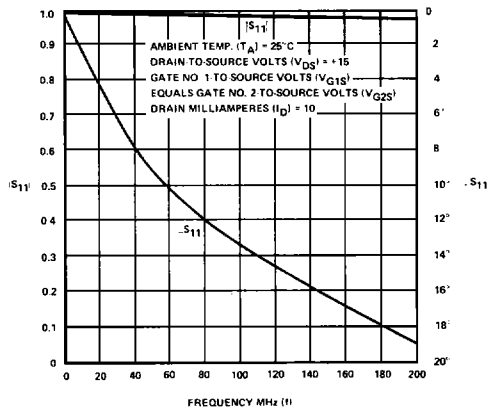
GATE NO. 1 FORWARD TRANSCONDUCTANCE VS DRAIN CURRENT



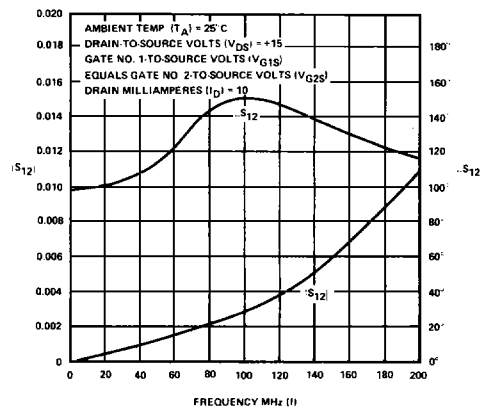
CONVERSION GAIN VS DRAIN CURRENT



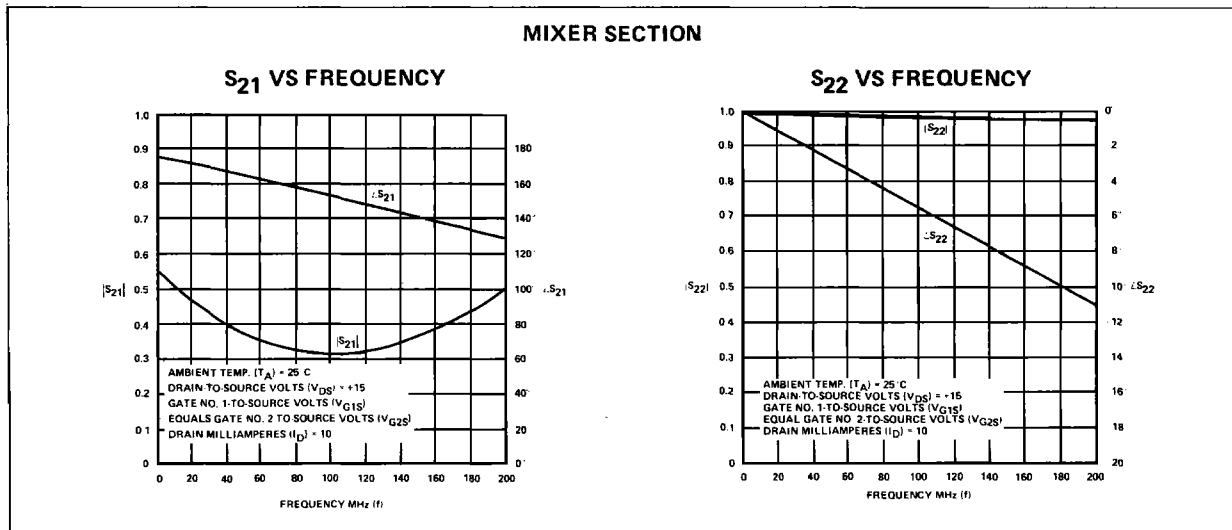
S11 VS FREQUENCY



S12 VS FREQUENCY

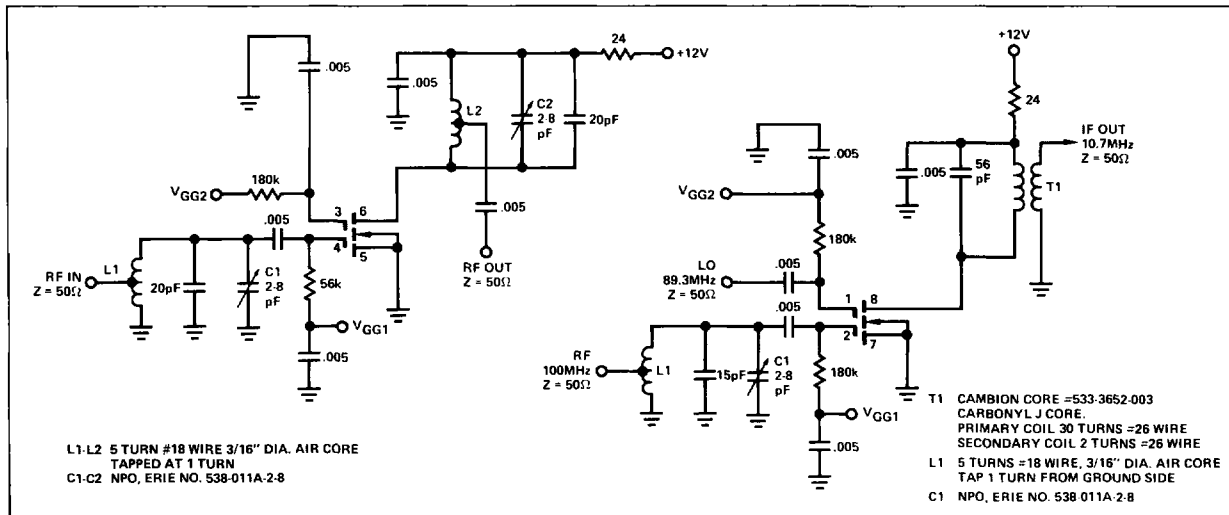


CHARACTERISTIC CURVES



RF AMP SECTION TEST CIRCUIT

MIXER SECTION TEST CIRCUIT

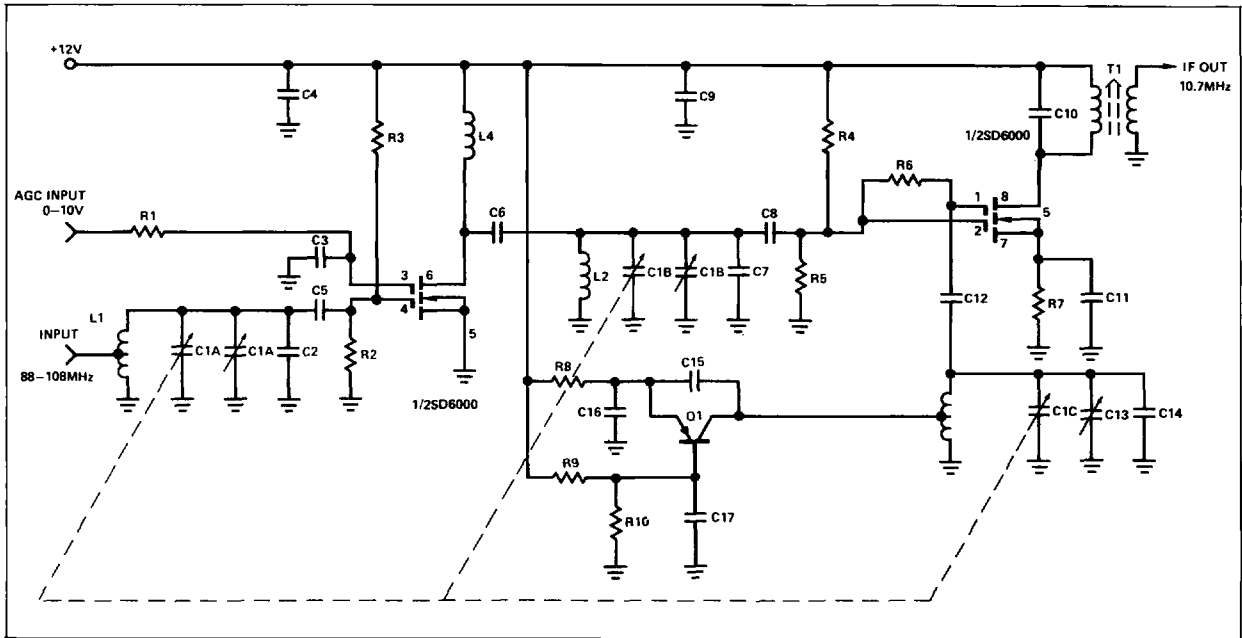


FM TUNER USING SD6000 ELECTRICAL DATA

PARAMETER	TEST CONDITIONS	TYP
Supply Voltage		+12V
Supply Current	AGC voltage +10V	25mA
Frequency Range		88MHz to 108MHz
Bandwidth	RF Amp (-3dB) Mixer (-3dB)	2.5MHz 300kHz
Input Impedance		75Ω
Output Impedance		50Ω
IF Output Frequency		10.7MHz
Oscillator Stability w/respect to Supply Voltage		40kHz/volt
Oscillator Stability w/respect to Temperature		10kHz/°C
Power Gain	88MHz to 108MHz	30dB Min
Noise Figure	@ 100MHz	3.0dB Max

ANALOG

FM TUNER USING SD6000



PARTS LIST

1. Transistors

Description	Type
Q1 PNP Silicon	2N4126

2. Integrated Circuits

U1 Dual D-MOS FET	SD6000V
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3. Resistors (All carbon resistors in ohms ±10% tolerance.)

Value	
R1	30k
R2	68k
R3	200k
R4	150k
R5	39k
R6	82k
R7	120
R8	6800
R9	13k
R10	3k

4. Capacitors

Value	Type
C1 5-20pF	3 Gang Tuning Capacitor
C2 20pF	±5% NPO
C3, 4, 5, 6, 8, 9, 11, 12, 17 .005	+80% - 20% Ceramic

C7	10pF	±5% NPO
C10	56pF	±5% MICA or Ceramic
C13	2-8pF	Trimmer
C14	12pF	±5% NPO
C15	10pF	±5% NPO
C16	10pF	±5% NPO

5. Miscellaneous Components

T1	IF Transformer	Cambion 533-3652-003 Jcore Prim. 30T #26 Sec. 2T #26
L1	RF Input Coil	4 turns #18 on 3/16" dia. Air core — Tap 1 Turn from ground side.
L2	RF Output Coil	4 turns #18 on 3/16" dia. air core.
L3	Oscillator Coil	4 turns #18 on 3/16" dia. air core center-tapped.
L4		33µh RF choke