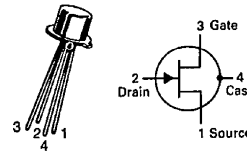


6367254 MOTOROLA SC (XSTRS/R F)

96D 82625 ^D
T-31-25

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	30	Vdc
Drain-Gate Voltage	V _{DG}	30	Vdc
Reverse Gate-Source Voltage	V _{GSR}	-30	Vdc
Forward Gate Current	I _{GF}	10	mAdc
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	300 1.71	mW mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-65 to +150	°C

BFW10
BFW11CASE 20-03, STYLE 1
TO-72 (TO-206A)JFET
VHF/UHF AMPLIFIER
N-CHANNEL - DEPLETION

Refer to 2N4416 for graphs.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Gate-Source Breakdown Voltage (I _G = 10 μAdc, V _{DS} = 0)	V _{(BR)GSS}	30	—	—	Vdc
Gate-Source Cutoff Voltage (V _{DS} = 15 Vdc, I _D = 0.5 nAdc)	V _{GS(off)}	—	—	8 6	Vdc
Gate Reverse Current (V _{GS} = 20 Vdc, V _{DS} = 0)	I _{GSS}	—	—	0.1	nAdc
Gate-Source Voltage (V _{DS} = 15 Vdc, I _D = 400 μAdc)	V _{GS}	2	—	7.5	Vdc
Gate-Source Voltage (V _{DS} = 15 Vdc, I _D = 50 μAdc)	V _{GS}	1.25	—	4	Vdc
ON CHARACTERISTICS					
Zero-Gate Voltage Drain Current (V _{DS} = 15 Vdc, V _{GS} = 0)	I _{DSS}	8 4	—	20 10	mAdc
SMALL-SIGNAL CHARACTERISTICS					
Forward Transadmittance (V _{DS} = 15 Vdc, V _{GS} = 0, f = 1 kHz)	Y _{fs}	3.5 3.0	—	6.5 6.5	mmhos
Output Admittance (V _{DS} = 15 Vdc, V _{GS} = 0, f = 1.0 kHz)	Y _{os}	—	—	85 50	μmhos
Input Capacitance (V _{DS} = 15 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz)	C _{iss}	—	—	5.0	pF
Reverse Transfer Capacitance (V _{DS} = 15 Vdc, V _{GS} = 0 Vdc, f = 1.0 MHz)	C _{rss}	—	—	0.8	pF
Forward Transadmittance (V _{DS} = 15 Vdc, V _{GS} = 0, f = 200 MHz)	Y _{fs}	3.2	—	—	mmhos
Equivalent Noise Voltage (V _{DS} = 15 Vdc, V _{GS} = 0, f = 25 Hz)	e _n	—	—	75	nV/√Hz
Noise Figure (V _{DS} = 15 Vdc, V _{GS} = 0 V, see Figures 1, 2, 3)	NF	—	—	2.5	dB

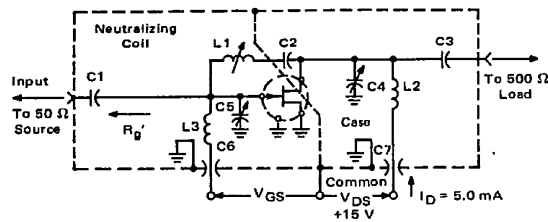
6367254 MOTOROLA SC (XSTRS/R F)

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FIGURE 1 — 100 MHz and 400 MHz NEUTRALIZED TEST CIRCUIT

T-31-25



Adjust V_{GS} for
 $I_D = 5.0 \text{ mA}$
 $V_{GS} < 0 \text{ Volts}$

NOTE: The noise source is a hot-cold body
(A1L type 70 or equivalent) with a
test receiver (A1L type 136 or equivalent).

Reference Designation	VALUE	
	100 MHz	400 MHz
C1	7.0 pF	1.8 pF
C2	1000 pF	17 pF
C3	3.0 pF	1.0 pF
C4	1-12 pF	0.8-8.0 pF
C5	1-12 pF	0.8-8.0 pF
C6	0.0015 μF	0.001 μF
C7	0.0015 μF	0.001 μF
L1	3.0 μH^*	0.2 μH^{**}
L2	0.15 μH^*	0.03 μH^{**}
L3	0.14 μH^*	0.022 μH^{**}

- *L1 17 turns, (approx. — depends upon circuit layout) AWG #28 enameled copper wire, close wound on 9/32" ceramic coil form. Tuning provided by a powdered iron slug.
L2 4-1/2 turns, AWG #18 enameled copper wire, 5/16" long, 3/8" I.D. (AIR CORE).
L3 3-1/2 turns, AWG #18 enameled copper wire, 1/4" long, 3/8" I.D. (AIR CORE).

- **L1 6 turns, (approx. — depends upon circuit layout) AWG #24 enameled copper wire, close wound on 7/32" ceramic coil form. Tuning provided by an aluminum slug.
L2 1 turn, AWG #16 enameled copper wire, 3/8" I.D. (AIR CORE).
L3 1/2 turn, AWG #16 enameled copper wire, 1/4" I.D. (AIR CORE).

NOISE FIGURE ($T_{\text{channel}} = 25^\circ\text{C}$)

FIGURE 2 — EFFECTS OF DRAIN-SOURCE VOLTAGE

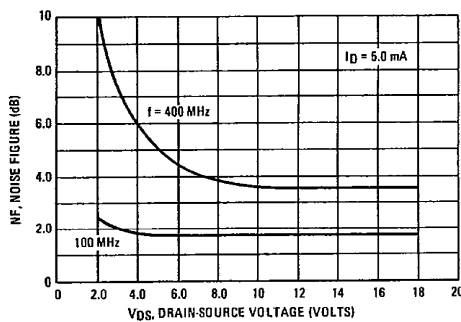
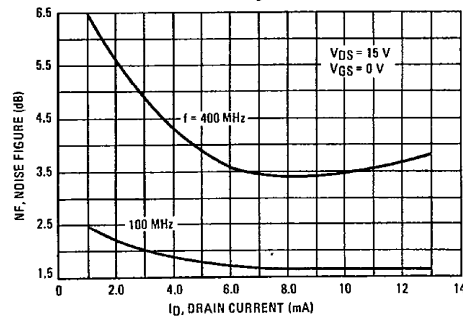
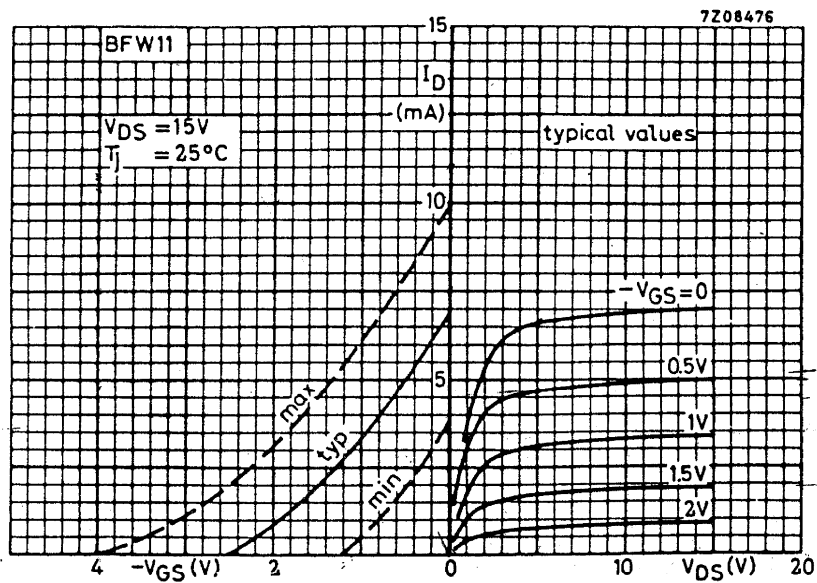
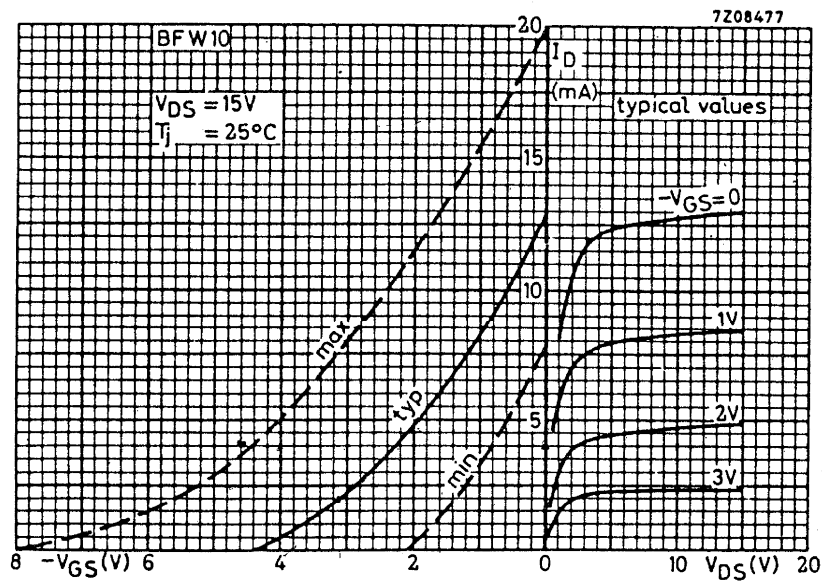


FIGURE 3 — EFFECTS OF DRAIN CURRENT



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August 1969