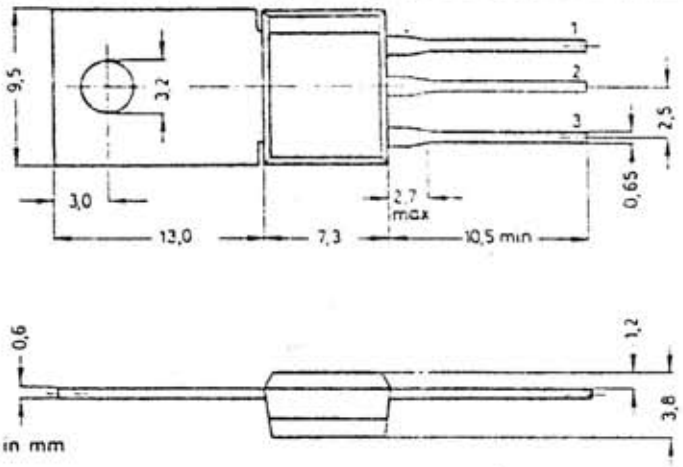
# N-CHANNEL JUNCTION FIELD EFFECT TRANSISTOR

APPLICATION:
- o VHF Amplifiers, Drivers, Oscillators
- o Large signal mixers

ADVANTAGES:
- o High output voltage
- o Low intermodulation
- o Simple circuit and device mounting

**mechanical data**

TO 202




All dimensions are in mm

1= Drain 2= Gate 3= Source Gate electrically connected to heat-sink

## ABSOLUTE MAXIMUM RATINGS AT 25°C FREE-AIR TEMPERATURE (UNLESS OTHERWISE NOTED)

| | |
|---|---|
| Drain-Gate Voltage | 30 V |
| Drain-Source Voltage | ± 30 V |
| Gate-Source Voltage | - 30 V |
| Forward Gate Current | 10mA |
| Continuous Device Dissipation at (or below) 25°C. Free-Air Temperature (see note 2) | 2 W |
| Continuous Device Dissipation at (or below) 25°C. Case Temperature (see note 3) | 5 W |
| Storage Temperature Range | -55°C to 150°C |
| Lead Temperature 1.6mm from Case for 10 Seconds | 260°C |

NOTES:
1. This value applies when the base-emitter diode is open circuited.
2. Derate linearly to 150 °C Free-Air Temperature at the rate of 16mW/°C.
3. Derate linearly to 150 °C Case Temperature at the rate of 40mW/°C.

Electrical characteristics at 25°C free-air temperature (unless otherwise noted)

| | PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_C$= -1µA, $V_{DS}$= 0 | 30 | | | V |
| $I_{GSS}$ | Gate-Leakage Current | $V_{GS}$= -15 V, $V_{DS}$= 0 | | | 10 | nA |
| $I_{DSS}$ | Zero-Gate-Voltage Drain Current | $V_{DS}$= 10 V, $V_{GS}$= 0 | 30 | | 140 | mA |
| $V_{GS}$ | Gate-Source Voltage | $V_{DS}$= 10 V, $I_D$ = 20mA | | | 4 | V |
| $I_{D(off)}$ | Drain-Cutoff Current | $V_{DS}$= 10 V, $V_{GS}$=-10 V | | | 10 | nA |
| $\lvert Y_{fs} \rvert$ | Common-Source Forward Transfer Admittance | $V_{DS}$= 10 V, $V_{GS}$= 0<br>f = 1KHz | 15 | 25 | | mS |
| $g_{ig}$ | Common-Gate Input Admittance | $V_{DS}$= 10 V, $I_D$ = 20mA | | 16 | | mS |
| $\lvert Y_{fg} \rvert$ | Common-Gate Forward Transfer Admittance | $V_{DS}$= 10 V, $I_D$= 20ma | | 17 | | mS |
| $G_p$ | Power-Gain | $I_D$ = 30mA, f =200MHz<br>(fig. 1) | | 11 | | dB |
| $U_a$ | Output-Voltage DIN 45004 | $R_L$ =75 Ohm, f =200MHz | | 5.3 | | V |
| $G_p$ | Power-Gain | $I_D$ = 30mA, f =600MHz<br>(fig. 2) | | 9 | | dB |
| $U_a$ | Output-Voltage DIN 45004 | $R_L$ =75 Ohm, f =600MHz<br>(fig. 2) | | 2.8 | | dB |

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TEXAS INSTRUMENTS
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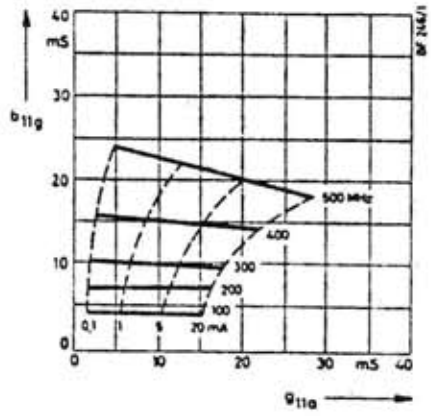
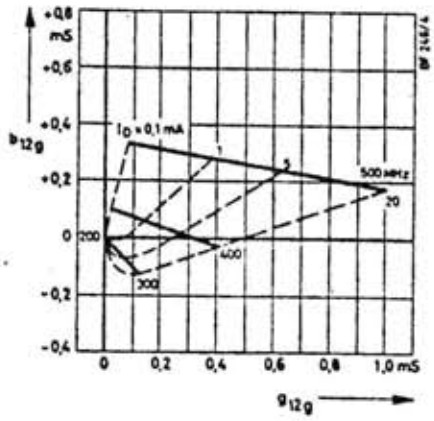
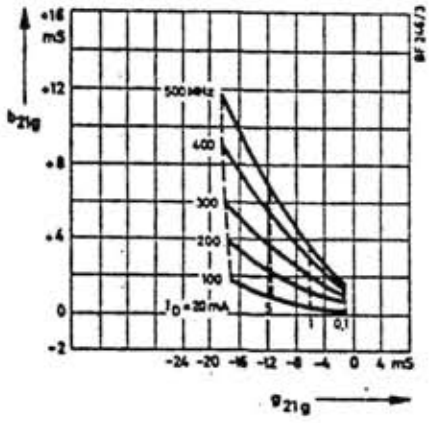
$Y_{11g}$
$V_{DS}$ = 15 V, f, $I_D$ = Parameter



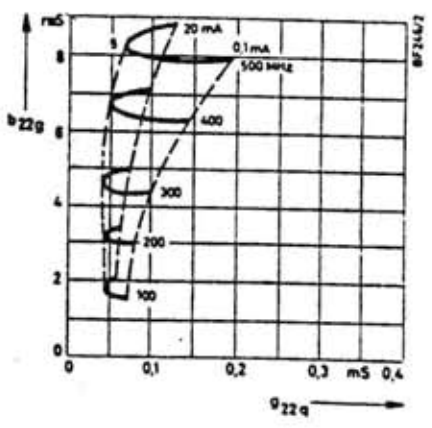

$Y_{12g}$
$V_{DS}$ = 15 V, f, $I_D$ = Parameter



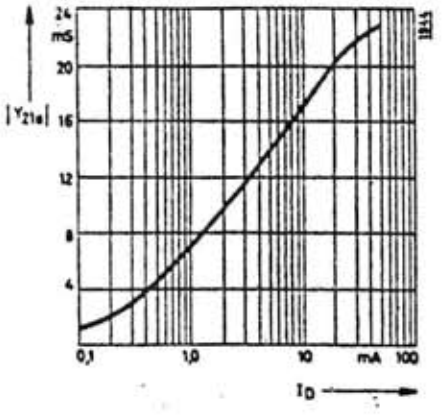

$Y_{21g}$
$V_{DS}$ = 15 V, f, $I_D$ = Parameter



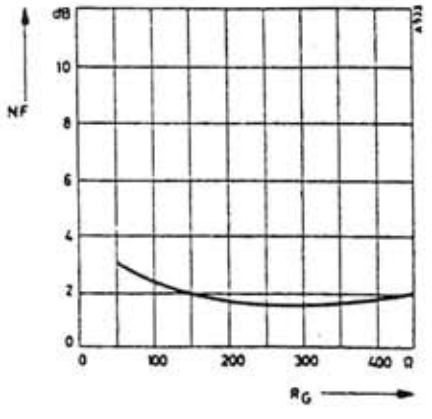

$Y_{22g}$
$V_{DS}$ = 15 V, f, $I_D$ = Parameter



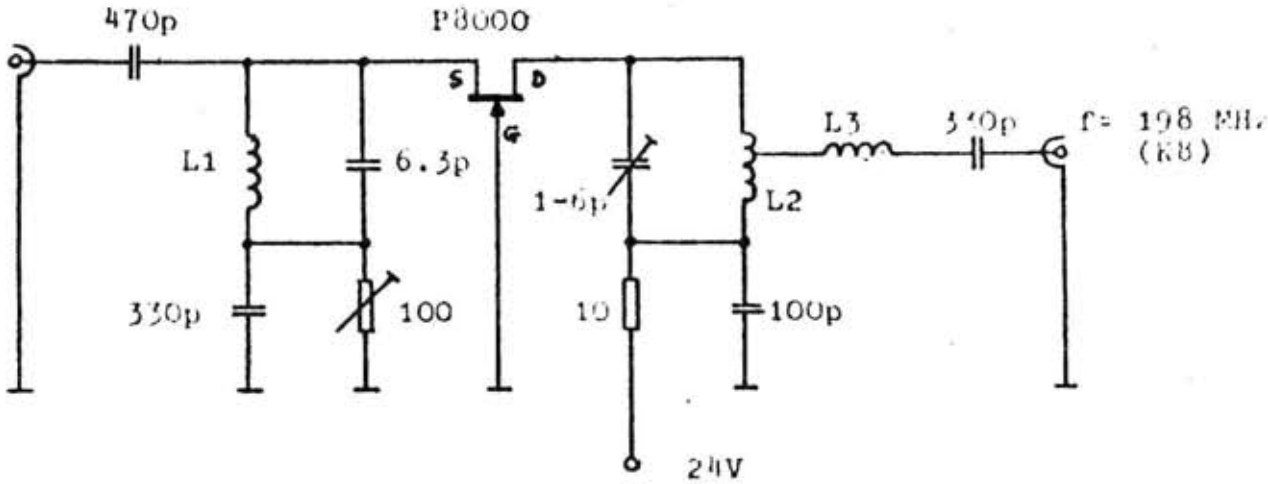

$|Y_{21s}| = f(I_D)$
$V_{DS}$ = 15 V, f = 1 kHz




NF = f($R_G$)
f = 100 MHz, $V_{DS}$ = 15 V, $I_D$ = 12 mA



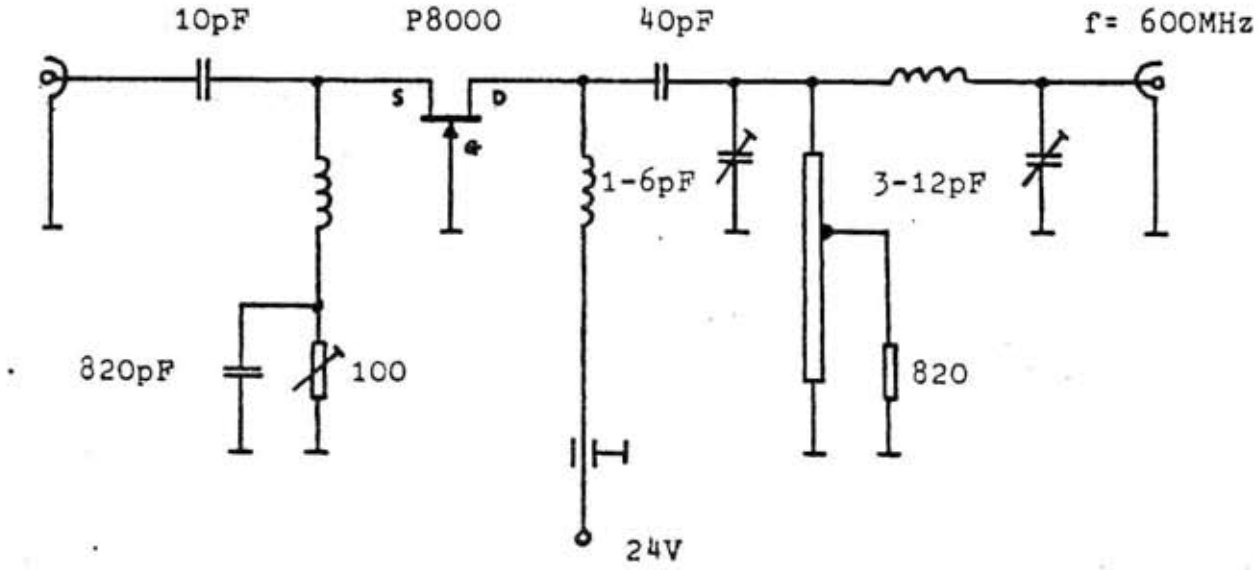
## VHF FET - LEISTUNGSVERSTAERKER (FIG.1)




$I_D$= 30 mA

| | | | | |
|---|---|---|---|---|
| L1 | = | 5 Wdg | 4 mm Ø | 0.3 Cu L |
| L2 | = | 4.5 Wdg | 8 mm Ø | 0.6 Cu Ag |
| | | Anzapf bei 4 Wdg | | |
| L3 | = | 4 Wdg | 5 mm Ø | 0.3 Cu L |

## UHF FET - LEISTUNGSVERSTAERKER (FIG.2)




$I_D$= 50 - 60 mA