



T-31-25

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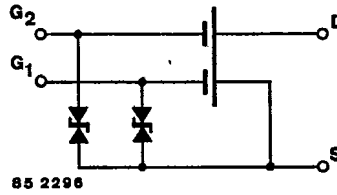
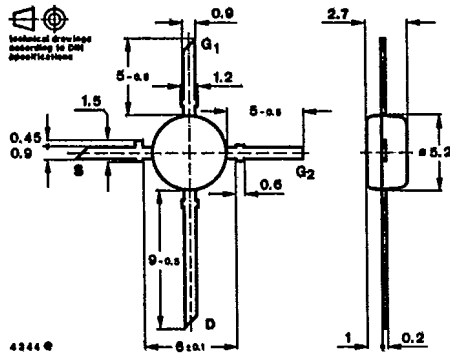
N-Channel Dual Gate MOS-Fieldeffect Tetrode · Depletion Mode

Applications: Input- and Mixerstages especially for VHF TV-tuners

Features:

- Integrated Gate protection diodes
- High cross modulation performance
- Low noise figure
- High AGC-range
- Low feedback capacitance
- Low Input capacitance

Dimensions in mm



Case
50 B 4 DIN 41867
JEDEC TO 50
Weight max. 0.1 g

Absolute maximum ratings

Drain Source Voltage	V_{DS}	20	V
Drain current	I_D	30	mA
Gate 1/Gate 2-Source peak current	$\pm I_{G1/2SM}$	10	mA
Total power dissipation $T_{amb} = 60^\circ C$	P_{tot}	200	mW
Channel temperature	T_C	150	$^\circ C$
Storage temperature range	T_{stg}	-55 ... +150	$^\circ C$

Thermal resistance

	Min.	Typ.	Max.
Channel ambient mounted on pc-board one side Cu 35 μm thickness 40 x 25 x 1.5 mm ³			450 K/W

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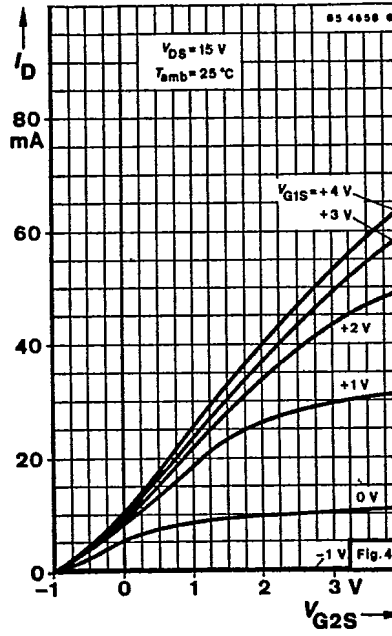
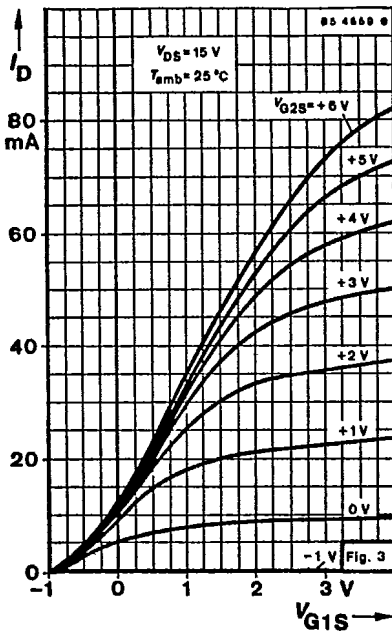
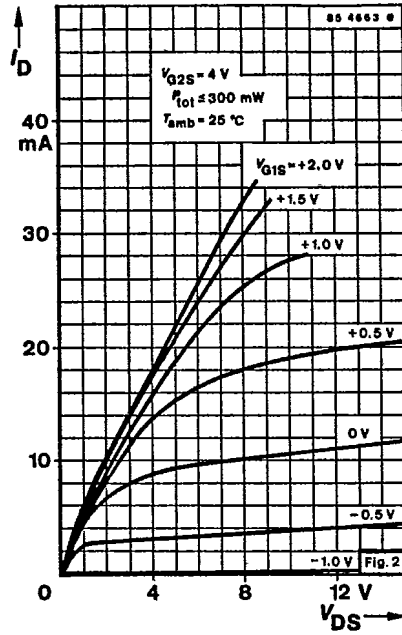
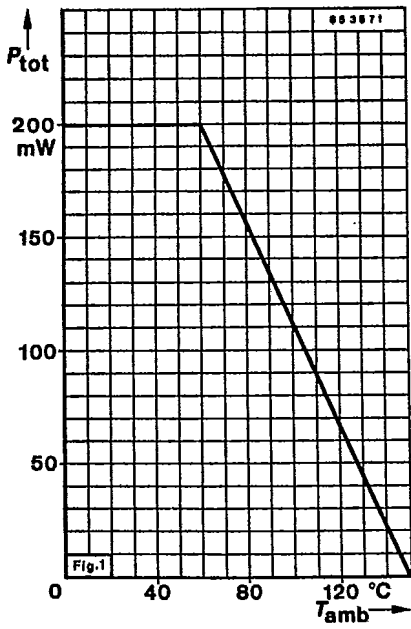
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DC characteristics		Min.	Typ.	Max.
$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified				
Drain-source breakdown voltage $I_D = 10\text{ }\mu\text{A}$, $-V_{G1S} = -V_{G2S} = 4\text{ V}$	$V_{(BR)DS}$	20		V
Gate 1-Source breakdown voltage $\pm I_{G1S} = 10\text{ mA}$, $V_{G2S} = V_{DS} = 0$	$\pm V_{(BR)G1S}$	6	20	V
Gate 2-Source breakdown voltage $\pm I_{G2S} = 10\text{ mA}$, $V_{G1S} = V_{DS} = 0$	$\pm V_{(BR)G2S}$	6	20	V
Gate 1-Source cut-off current $\pm V_{G1S} = 5\text{ V}$, $V_{G2S} = V_{DS} = 0$	I_{G1S}		50	nA
Gate 2-Source cut-off current $\pm V_{G2S} = 5\text{ V}$, $V_{G1S} = V_{DS} = 0$	I_{G2S}		50	nA
Drain current $V_{DS} = 15\text{ V}$, $V_{G1S} = 0$, $V_{G2S} = 4\text{ V}$	I_{DSS}	2	20	mA
Gate 1-Source cut-off voltage $V_{DS} = 15\text{ V}$, $V_{G2S} = 4\text{ V}$, $I_D = 20\text{ }\mu\text{A}$	$-V_{G1S(OFF)}$		2.5	V
Gate 2-Source cut-off voltage $V_{DS} = 15\text{ V}$, $V_{G1S} = 0\text{ V}$, $I_D = 20\text{ }\mu\text{A}$	$-V_{G2S(OFF)}$		2.0	V
AC characteristics				
$V_{DS} = 15\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$, $f = 1\text{ MHz}$, $T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified				
Forward transadmittance	$ y_{21} $	15	17	mS
Gate 1-Input capacitance	C_{ISSg1}		2.5	3.0 pF
Gate 2-Input capacitance $V_{G1S} = 0$, $V_{G2S} = 4\text{ V}$	C_{ISSg2}		1.2	pF
Feedback capacitance	$C_{fSS}^{1)}$		25	35 fF
Output capacitance	C_{oSS}		1.0	1.3 pF
Power gain $V_{DS} = 15\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$, $g_G = 2\text{ mS}$, $g_L = 0.5\text{ mS}$, $f = 200\text{ MHz}$	G_{ps}		25	dB
Noise figure $V_{DS} = 15\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$, $g_G = 2\text{ mS}$, $f = 200\text{ MHz}$	F		1.0	dB

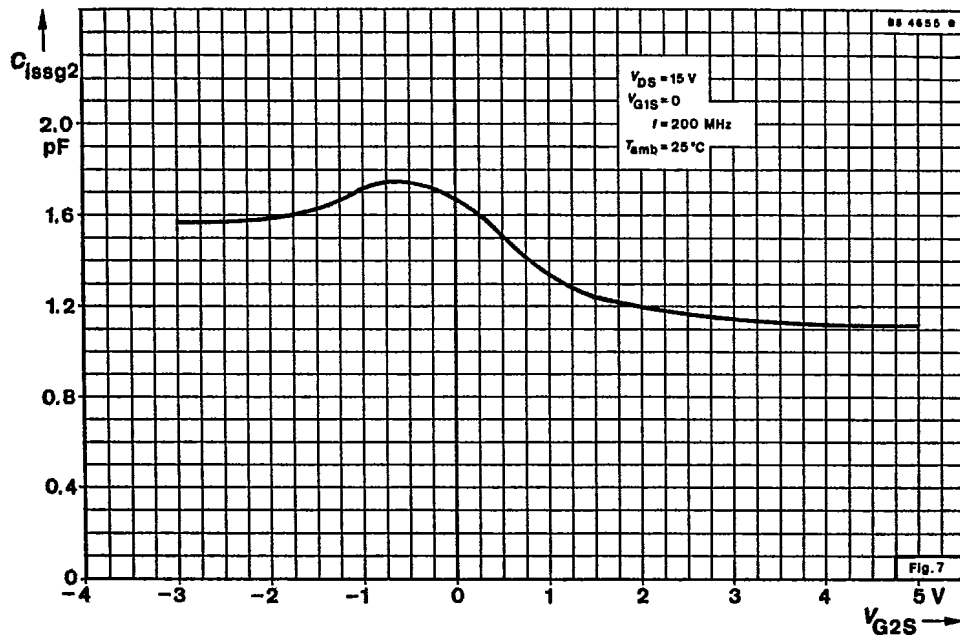
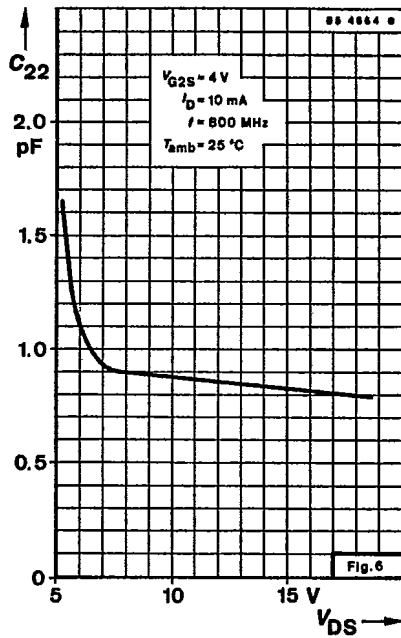
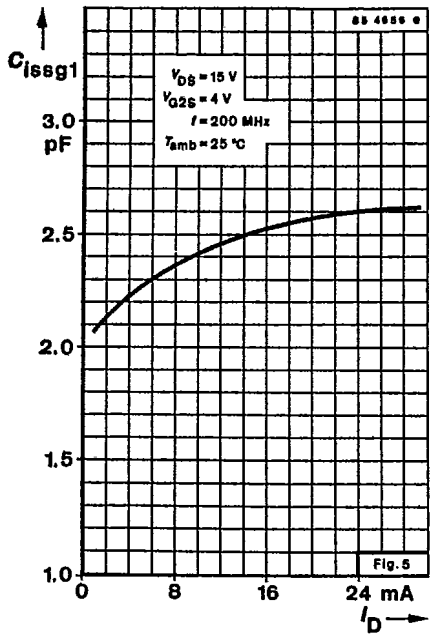
¹⁾ G_2 and S grounded

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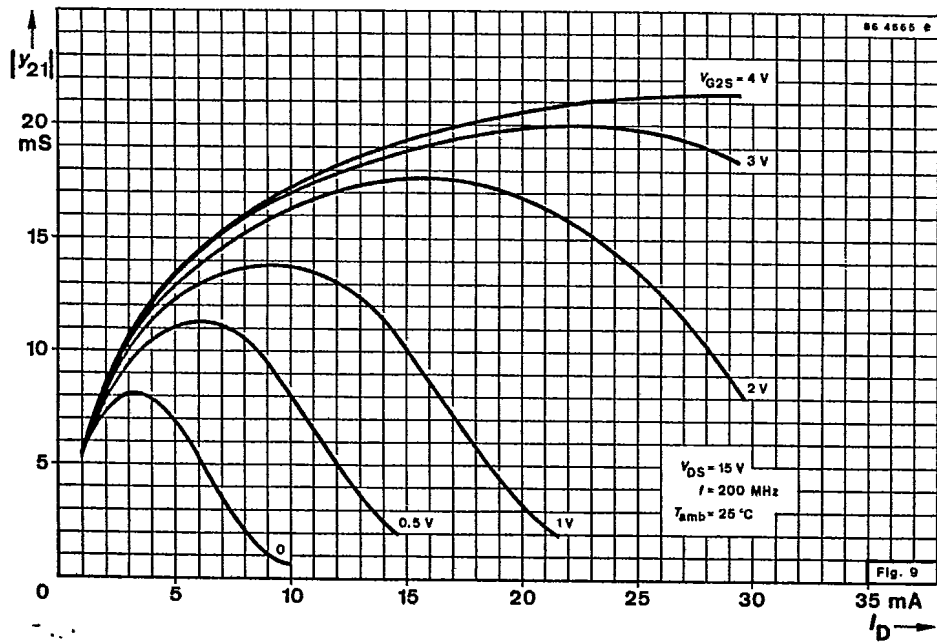
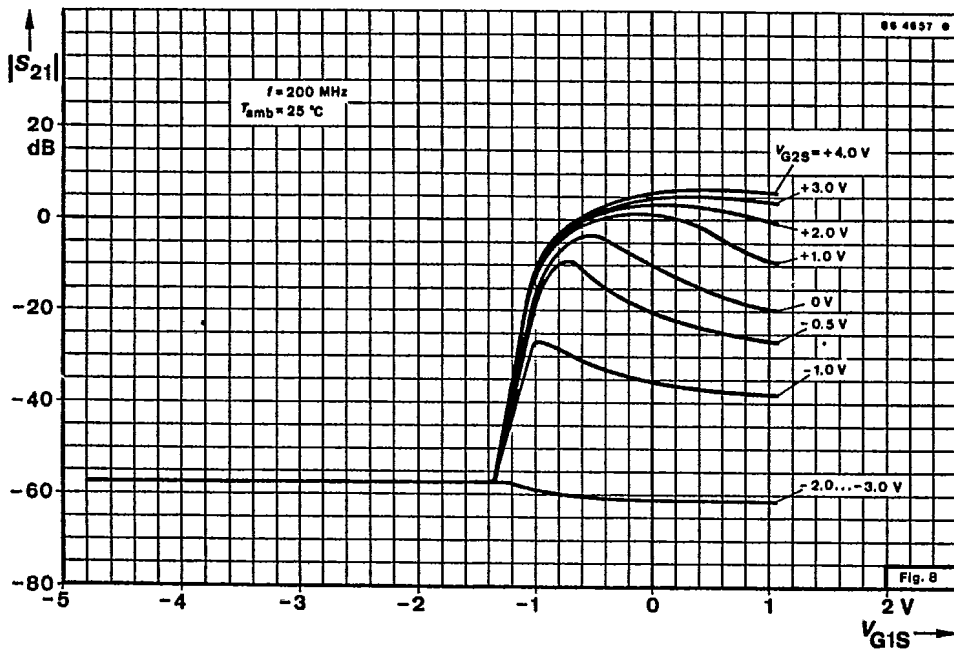
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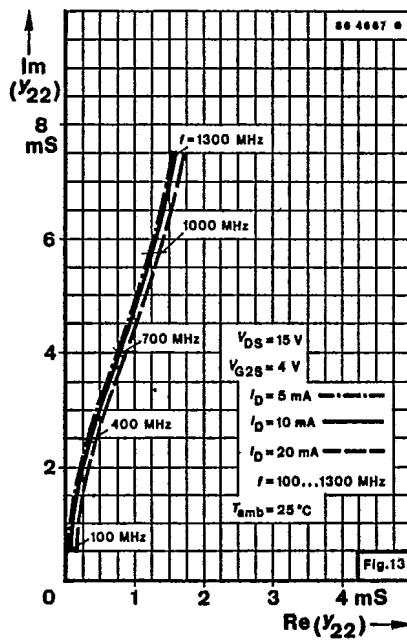
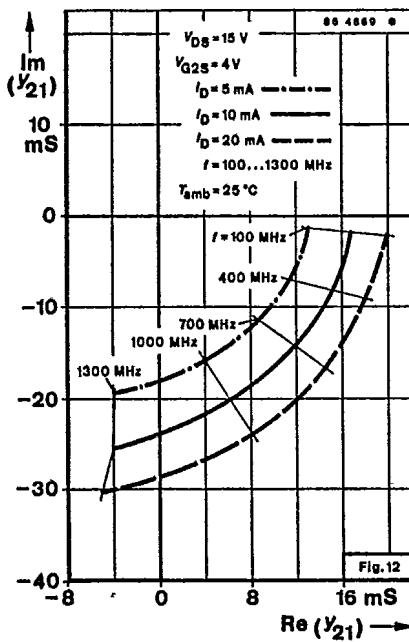
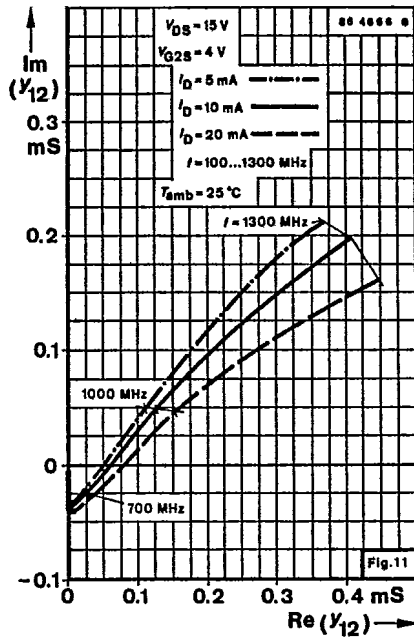
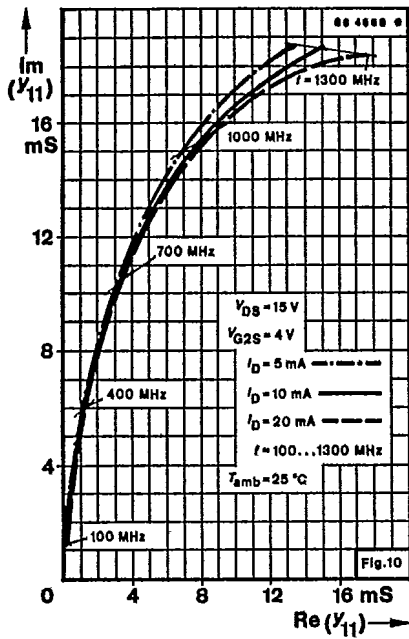
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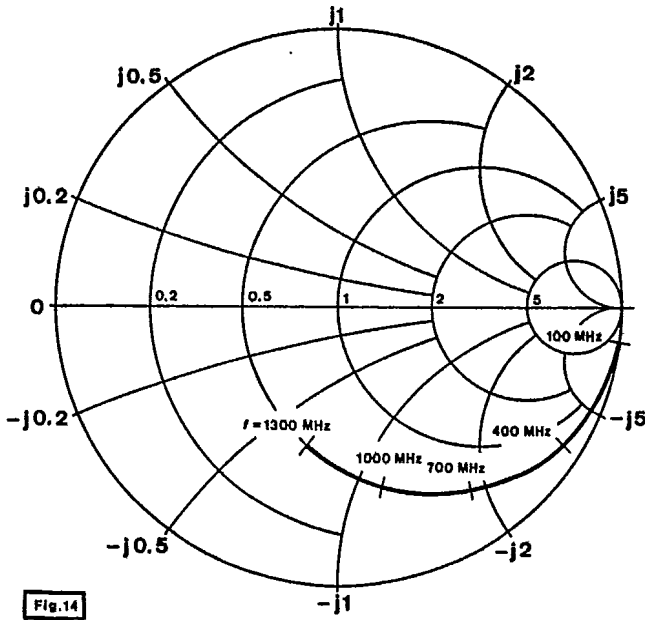
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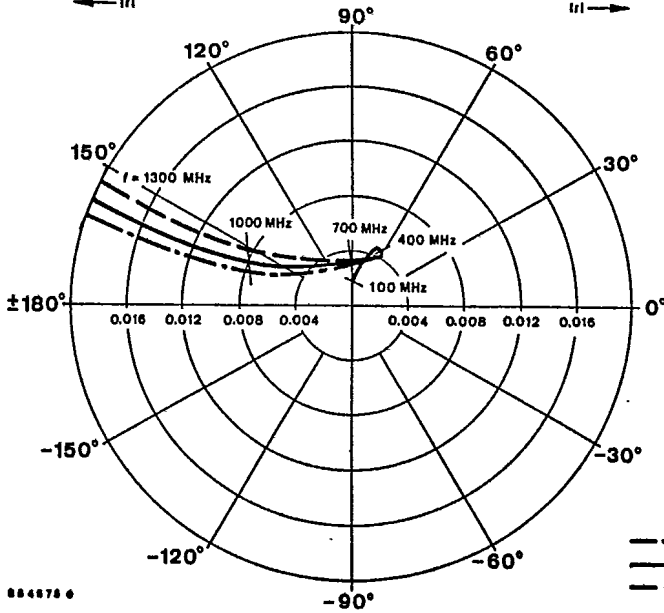
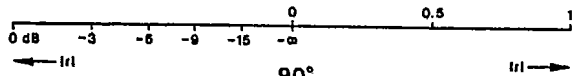


S_{11}

$I_D = 10 \text{ mA}$
 $V_{DS} = 15 \text{ V}$
 $V_{G2S} = 4 \text{ V}$
 $Z_0 = 50 \Omega$
 $f = 100 \dots 1300 \text{ MHz}$
 $T_{amb} = 25 \text{ }^\circ\text{C}$

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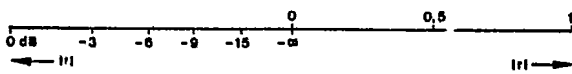
Fig.14



S_{12}

$Z_0 = 50 \Omega$
 $V_{DS} = 15 \text{ V}$
 $V_{G2S} = 4 \text{ V}$
 - - - $I_D = 5 \text{ mA}$
 — $I_D = 10 \text{ mA}$
 - - - $I_D = 20 \text{ mA}$
 $f = 100 \dots 1300 \text{ MHz}$
 $T_{amb} = 25 \text{ }^\circ\text{C}$

Fig.15



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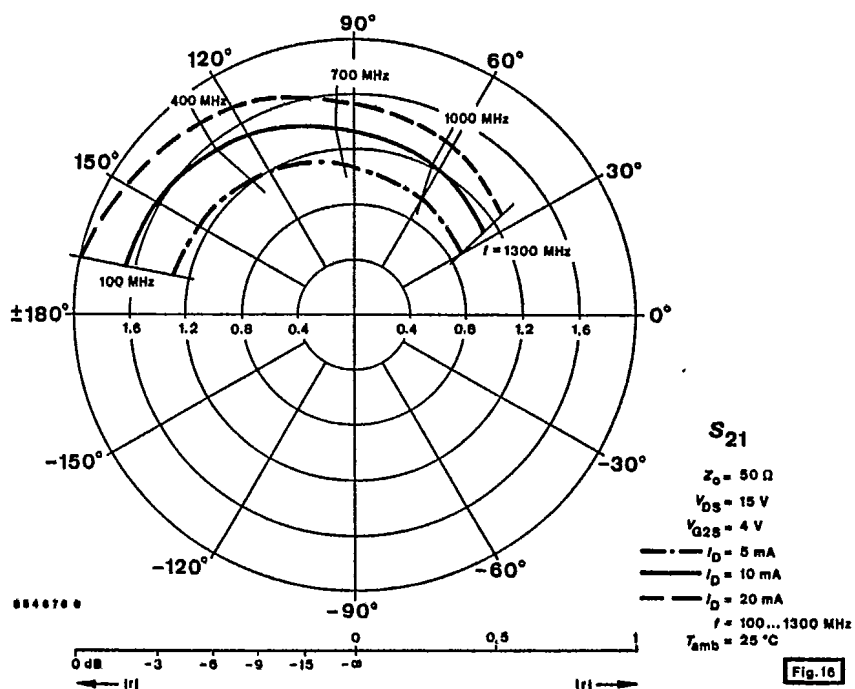


Fig. 16

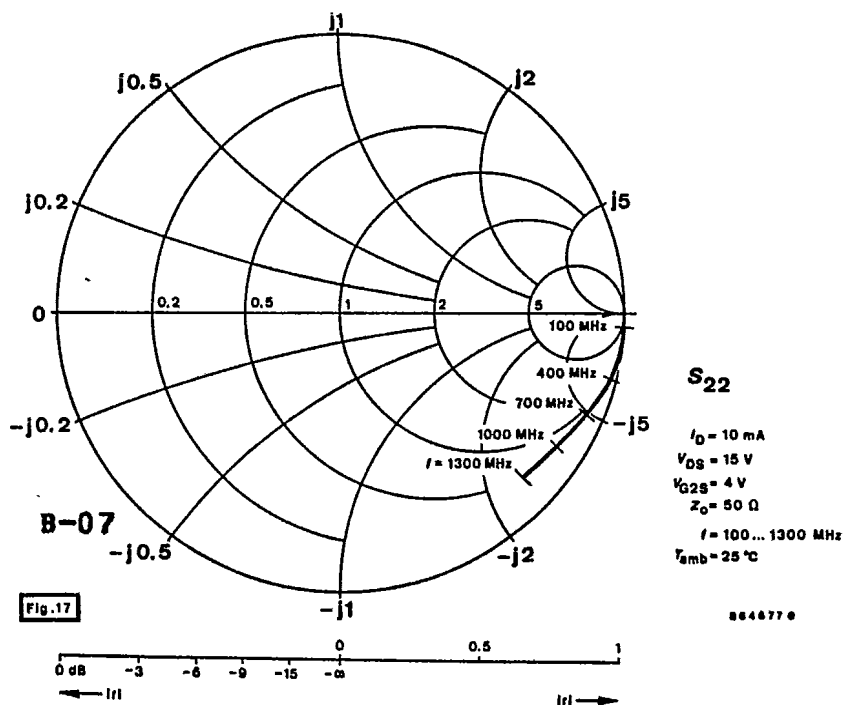


Fig. 17

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