BF960 Datasheet

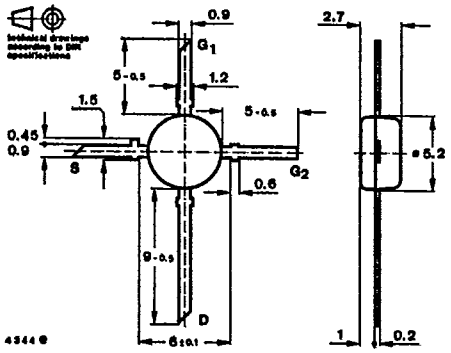
N-Channel Dual Gate MOS-Fieldeffect Tetrode · Depletion Mode

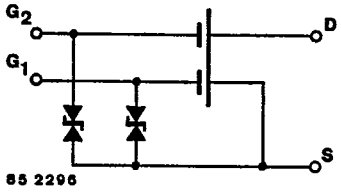
Applications: Input- and Mixerstages especially for UHF TV-tuners up to 900 MHz

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 41 867
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 $T_{amb} = 60$ °C	P_{tot}	200	mW
Channel temperature	T_C	150	°C
Storage temperature range	T_{stg}	−55 ... +150	°C

Thermal resistance

		Min.	Typ.	Max.	
Channel ambient mounted on pc-board one side Cu 35 µm thickness 40 x 25 x 1.5 mm³	R_{thCA}			450	K/W

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DC characteristics		Min.	Typ.	Max.	
$T_{amb} = 25$ °C, unless otherwise specified					
Drain-source breakdown voltage $I_D = 10$ µA, $-V_{G1S} = -V_{G2S} = 4$ V	$V_{(BR)DS}$	20			V
Gate 1-Source breakdown voltage $\pm I_{G1S} = 10$ mA, $V_{G2S} = V_{DS} = 0$	$\pm V_{(BR)G1SS}$	6		20	V
Gate 2-Source breakdown voltage $\pm I_{G2S} = 10$ mA, $V_{G1S} = V_{DS} = 0$	$\pm V_{(BR)G2SS}$	6		20	V
Gate 1-Source cutt-off current $\pm V_{G1S} = 5$ V, $V_{G2S} = V_{DS} = 0$	I_{G1SS}			50	nA
Gate 2-Source cut-off curret $\pm V_{G2S} = 5$ V, $V_{G1S} = V_{DS} = 0$	I_{G2SS}			50	nA
Drain current $V_{DS} = 15$ V, $V_{G1S} = 0$, $V_{G2S} = 4$ V	I_{DSS}	2		20	mA
Gate 1-Source cutt-off voltage $V_{DS} = 15$ V, $V_{G2S} = 4$ V, $I_D = 20$ µA	$-V_{G1S(OFF)}$			2.7	V
Gate 2-Source cutt-off voltage $V_{DS} = 15$ V, $V_{G1S} = 0$ V, $I_D = 20$ µA	$-V_{G2S(OFF)}$			2.7	V
AC characteristics					
$V_{DS} = 15$ V, $I_D = 7$ mA, $V_{G2S} = 4$ V, $f = 1$ MHz, $T_{amb} = 25$ °C, unless otherwise specified					
Forward transadmitance	$\lvert y_{21} \rvert$	10	13		mS
Gate 1-Input capacitance	C_{iSSg1}		1.8		pF
Gate 2-Input capacitance $V_{G1S} = 0$, $V_{G2S} = 4$ V	C_{iSSg2}		1.0		pF
Feedback capacitance	C_{rSS} [1]		25		fF
Output capacitance	C_{oSS}		0.8		pF
Power gain $V_{DS} = 15$ V, $I_D = 7$ mA, $V_{G2S} = 4$ V, $g_G = 2$ mS, $g_L = 5$ mS, $f = 200$ MHz $g_L = 1$ mS, $f = 800$ MHz	 G_{ps} G_{ps}		 23 16.5		 dB dB
Noise figure $g_G = 2$ mS, $f = 800$ MHz $V_{DS} = 15$ V, $I_D = 7$ mA, $V_{G2S} = 4$ V, $V_{G1S} = 0$	F		2.2	3	dB

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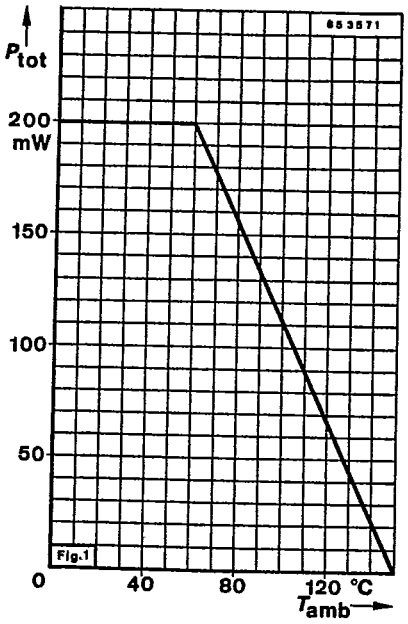

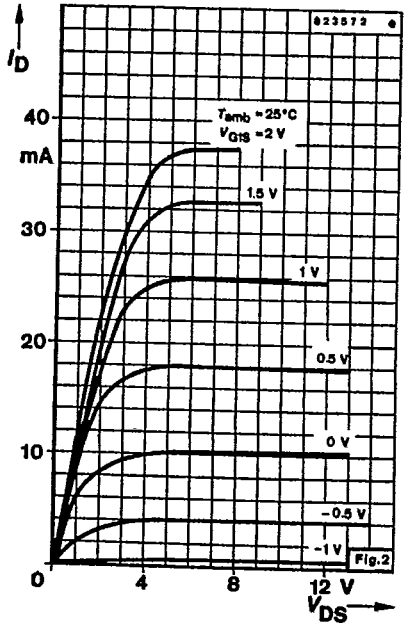

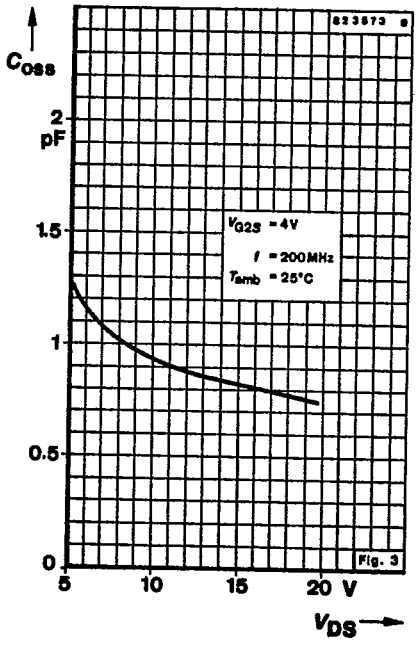

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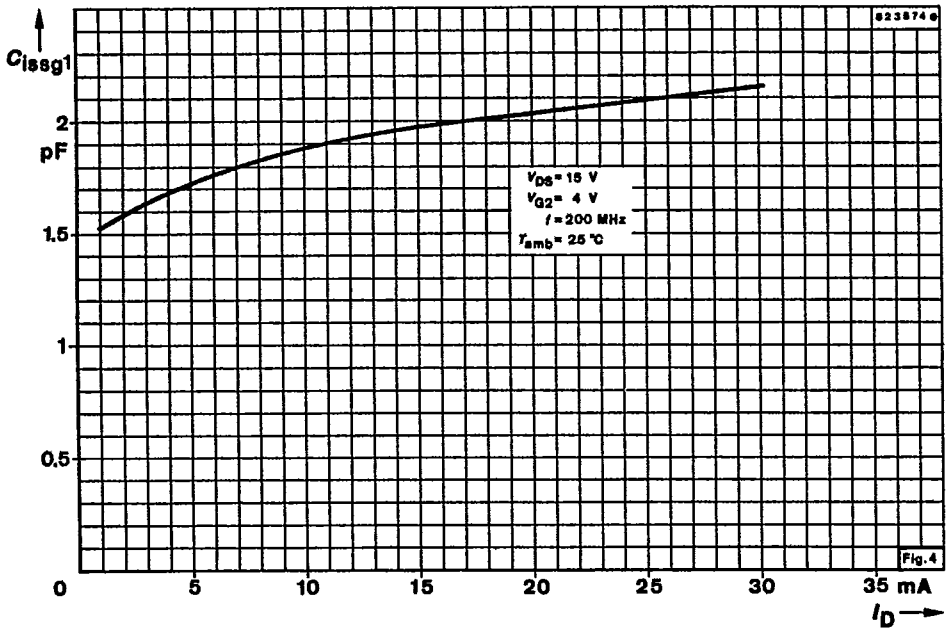

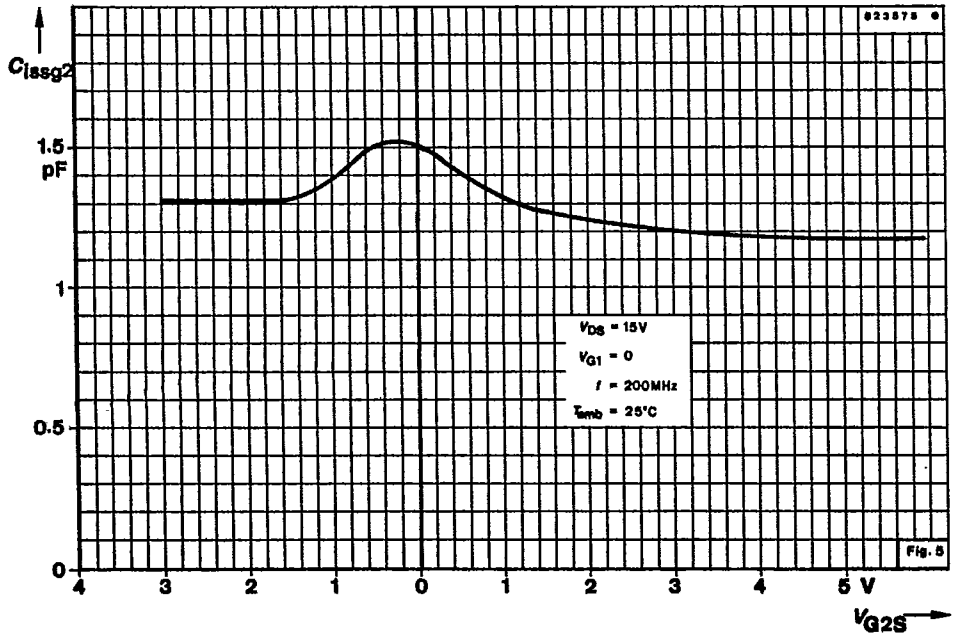

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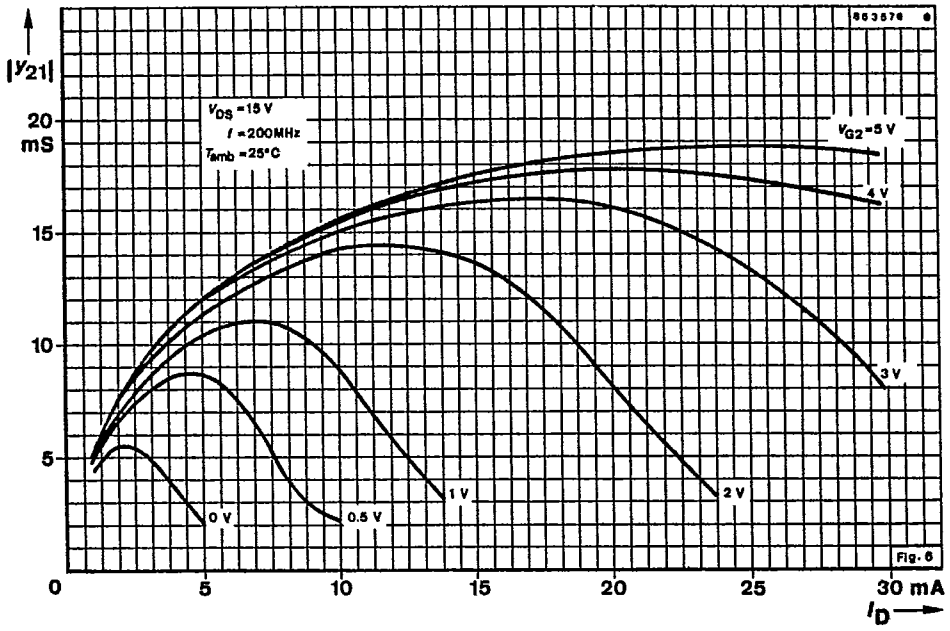

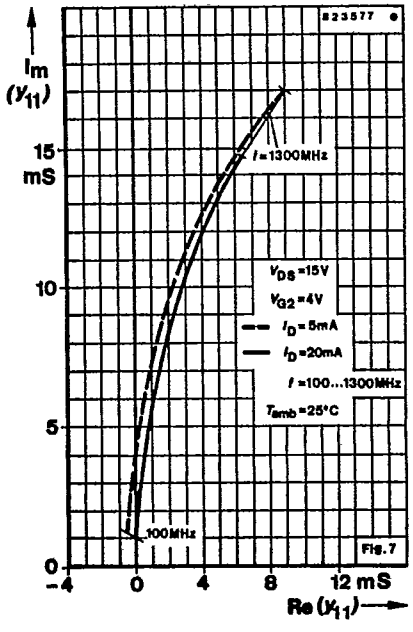

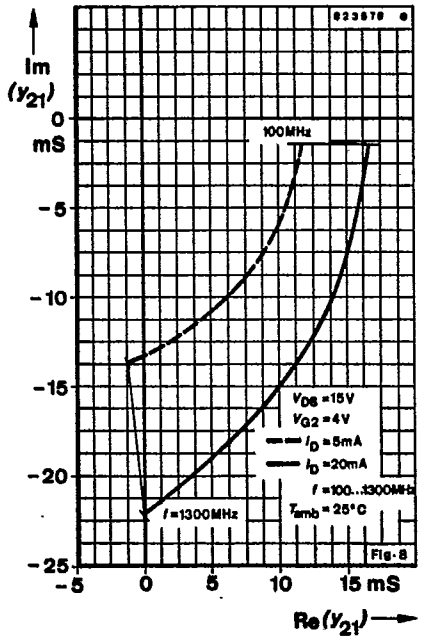

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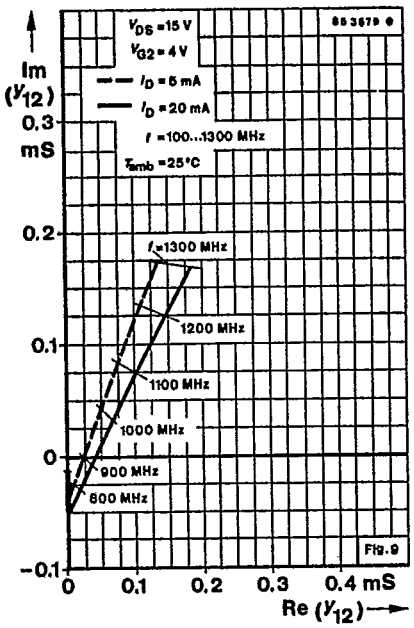

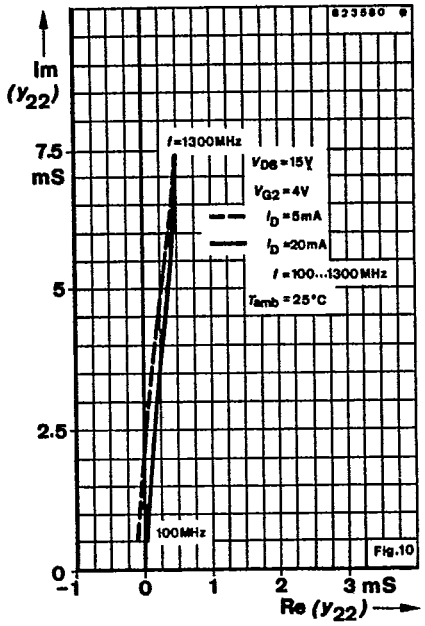

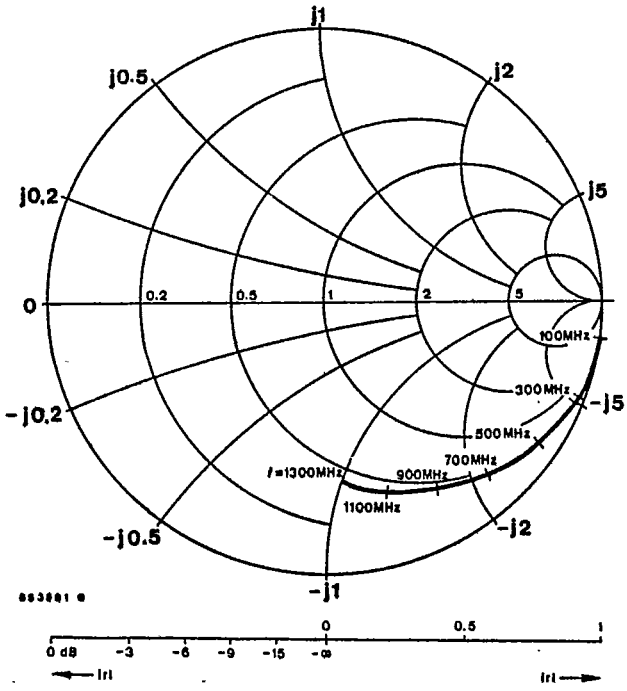

S_{11}
I_D = 10mA
V_{DS} = 15V
V_{G2} = 4V
Z_0 = 50Ω
f = 100...1300MHz
T_{amb} = 25°C

Fig.11

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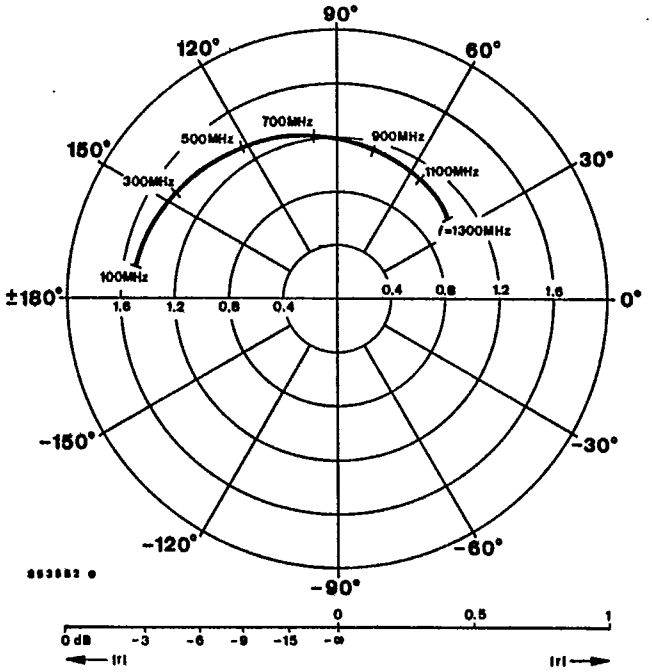
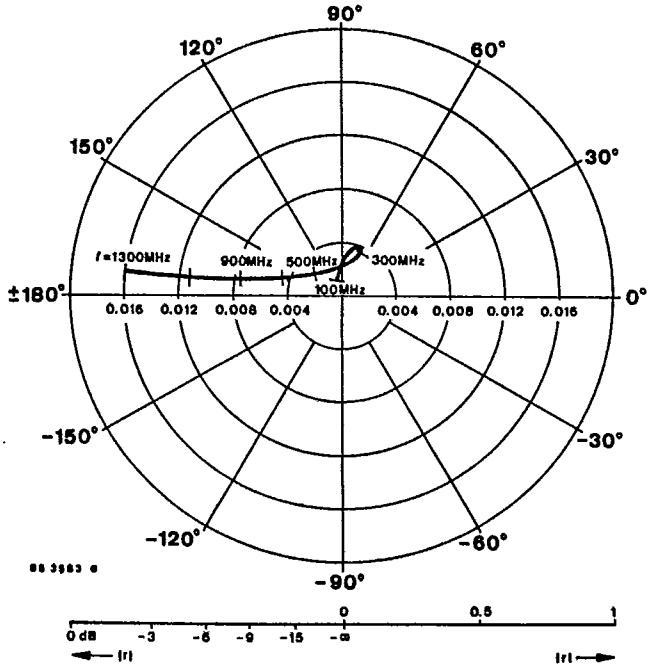


S_{21}

Z_o = 50Ω
V_{DS} = 15V
V_{G2} = 4V
I_D = 10mA
f = 100...1300MHz
T_{amb} = 25°C

Fig.12



S_{12}

Z_o = 50Ω
V_{DS} = 15V
V_{G2} = 4V
I_D = 10mA
f = 100...1300MHz
T_{amb} = 25°C

Fig.13

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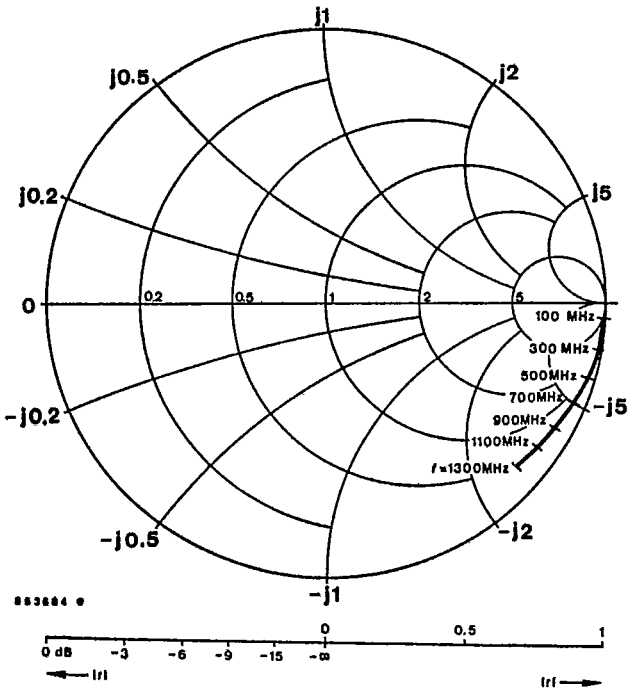

S_{22}

I_D = 3...10mA
V_{DS} = 15V
V_{G2} = 4V
Z_o = 50Ω
f = 100...1300MHz
T_{amb} = 25°C

Fig.14