N-Channel MOSFET Transistor

BF964S

VHF Transistor

20V / 30mA

DATASHEET

OEM – Siemens

Source: Siemens Databook 1986/87

Datasheet Rev. 1.3 – 02/19 – data without warranty / liability

Silizium-N-Kanal-MOSFET-Tetrode

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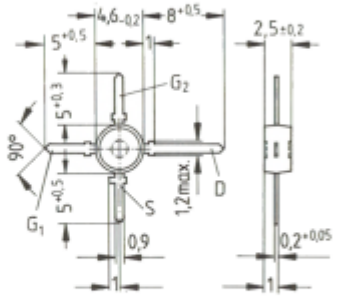
- Für Anwendungen in VHF-Vor- und Mischstufen mit großem Abstimmbereich (CATV-Tuner)

X-plast



Typ	BF 964 S
Best.-Nr.	Q62702-F446

Grenzdaten

Drain-Source-Spannung	V_{DS}	20	V
Drainstrom	I_D	30	mA
Gate 1/Gate 2-Source-Spitzenstrom	$\pm I_{G1/2SM}$	10	mA
Gesamtverlustleistung $T_A \leq 60\,^\circ C$	P_{tot}	200	mW
Lagertemperatur	T_{stg}	$-55 \ldots +150$	°C
Kanaltemperatur	T_{Ch}	150	°C

Wärmewiderstand

Sperrschicht-Umgebung	R_{thJA}	≤ 450	K/W

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Kenndaten ($T_A = 25\,^\circ C$)

Gleichstromdaten		**min**	**typ**	**max**	
Drain-Source-Durchbruchspannung $I_D = 10\ \mu A,\ -V_{G1S} = -V_{G2S} = 4\ V$	$V_{(BR)\,DS}$	20	—	—	V
Gate 1-Source-Durchbruchspannung $\pm I_{G1S} = 10\ mA,\ V_{G2S} = V_{DS} = 0$	$\pm V_{(BR)\,G1SS}$	8,5	—	17	V
Gate 2-Source-Durchbruchspannung $\pm I_{G2S} = 10\ mA,\ V_{G1S} = V_{DS} = 0$	$\pm V_{(BR)\,G2SS}$	8,5	—	17	V
Gate 1-Reststrom $\pm V_{G1S} = 5\ V,\ V_{G2S} = V_{DS} = 0$	$\pm I_{G1SS}$	—	—	50	nA
Gate 2-Reststrom $\pm V_{G2S} = 5\ V,\ V_{G1S} = V_{DS} = 0$	$\pm I_{G2SS}$	—	—	50	nA
Drainstrom $V_{DS} = 15\ V,\ V_{G1S} = 0,\ V_{G2S} = 4\ V$	I_{DSS}	2	—	20	mA
Gate 1-Source-Abschnürspannung $V_{DS} = 15\ V,\ V_{G2S} = 4\ V,\ I_D = 20\ \mu A$	$-V_{G1S\,(p)}$	—	—	2,5	V
Gate 2-Source-Abschnürspannung $V_{DS} = 15\ V,\ V_{G1S} = 0,\ I_D = 20\ \mu A$	$-V_{G2S\,(p)}$	—	—	2,0	V

Wechselstromdaten					
Vorwärtssteilheit $V_{DS} = 15\ V,\ I_D = 10\ mA,\ V_{G2S} = 4\ V,\ f = 1\ kHz$	g_{fs}	15	18	—	mS
Gate 1-Eingangskapazität $V_{DS} = 15\ V,\ I_D = 10\ mA,\ V_{G2S} = 4\ V,\ f = 1\ MHz$	c_{g1ss}	—	2,5	—	pF
Gate 2-Eingangskapazität $V_{DS} = 15\ V,\ I_D = 10\ mA,\ V_{G2S} = 4\ V,\ f = 1\ MHz$	c_{g2ss}	—	1,2	—	pF
Rückwirkungskapazität $V_{DS} = 15\ V,\ I_D = 10\ mA,\ V_{G2S} = 4\ V,\ f = 1\ MHz$	c_{dg1}	—	25	—	fF
Ausgangskapazität $V_{DS} = 15\ V,\ I_D = 10\ mA,\ V_{G2S} = 4\ V,\ f = 1\ MHz$	c_{dss}	—	1	—	pF
Leistungsverstärkung $V_{DS} = 15\ V,\ I_D = 10\ mA,$ $f = 200\ MHz,\ G_G = 2\ mS,\ G_L = 0,5\ mS$ (Meßschaltung)	G_{ps}	—	25	—	dB
Rauschzahl $V_{DS} = 15\ V,\ I_D = 10\ mA$ $f = 200\ MHz,\ G_G = 2\ mS,\ G_L = 0,5\ mS$ (Meßschaltung)	F	—	1	—	dB
Regelumfang $V_{DS} = 15\ V,\ V_{G2S} = 4 \ldots -2\ V,\ f = 200\ MHz$ (Meßschaltung)	ΔG_{ps}	50	—	—	dB

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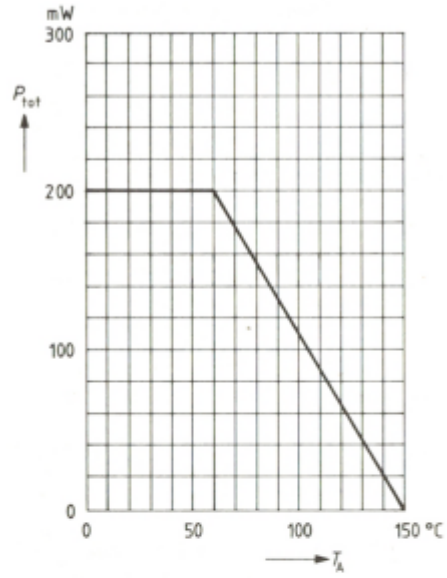
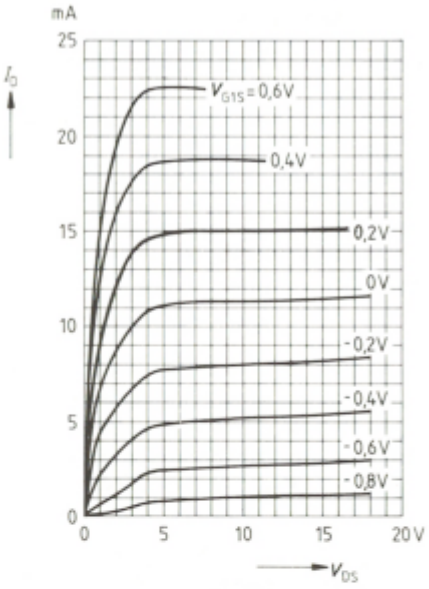
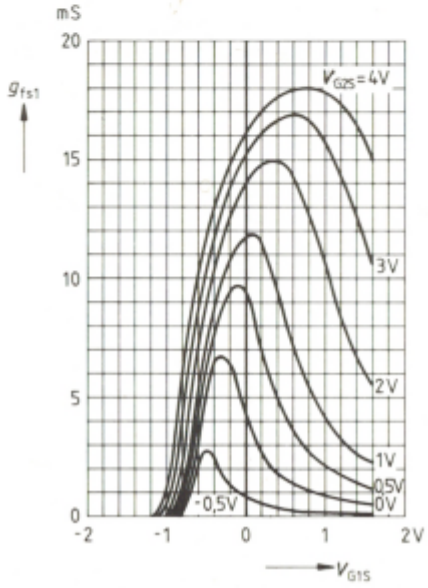
Gesamtverlustleistung $P_{tot} = f(T_A)$



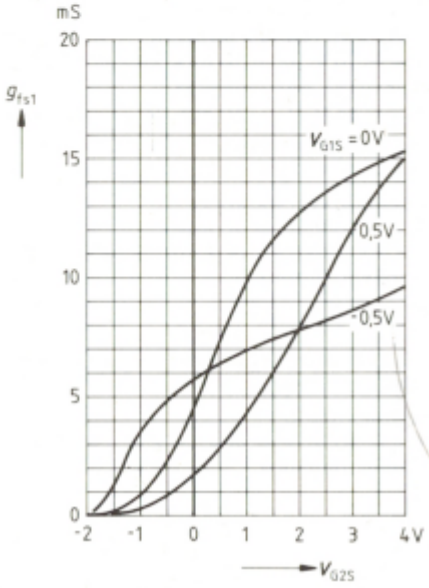
Ausgangskennlinienfeld $I_D = f(V_{DS})$



Gate 1-Steilheit $g_{fs1} = f(V_{G1S})$
V_{DS} = 15 V
I_{DSS} = 10 mA, f = 1 kHz



Gate 1-Steilheit $g_{fs1} = f(V_{G2S})$
V_{DS} = 15 V
I_{DSS} = 10 mA, f = 1 kHz



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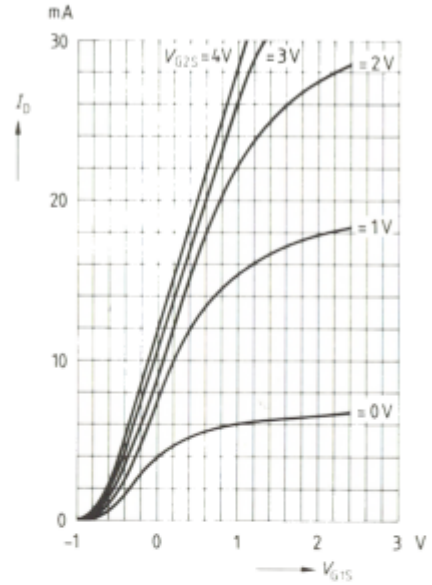
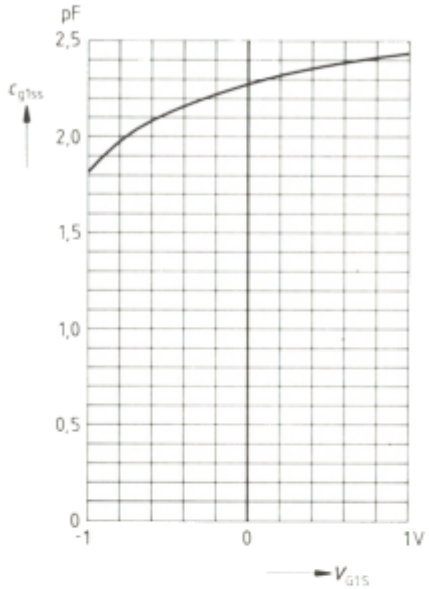
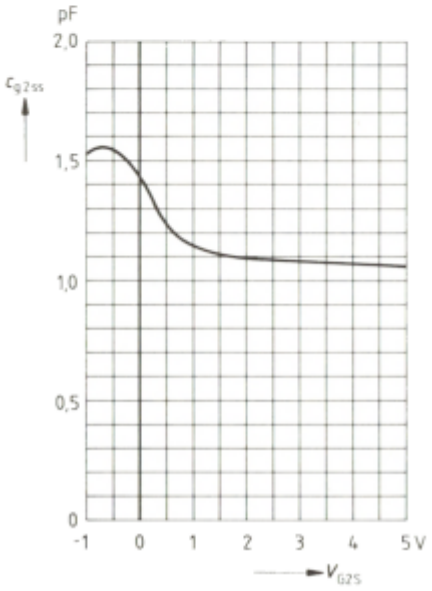
Drainstrom $I_D = f(V_{G1S})$
V_{DS} = 15 V



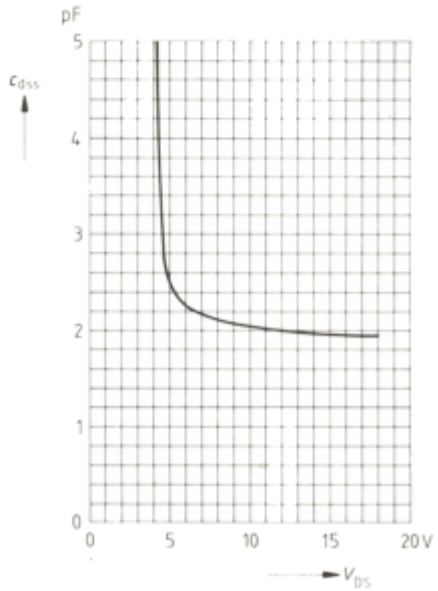
Gate 1-Eingangskapazität $c_{g1ss} = f(V_{G1S})$
V_{G2S} = 4 V, V_{DS} = 15 V
I_{DSS} = 10 mA, f = 1 MHz



Gate 2-Eingangskapazität $c_{g2ss} = f(V_{G2S})$
V_{G1S} = 0 V, V_{DS} = 15 V
I_{DSS} = 10 mA, f = 1 MHz



Ausgangskapazität $c_{dss} = f(V_{DS})$
V_{G1S} = 0 V, V_{G2S} = 4 V
I_{DSS} = 10 mA, f = 1 MHz



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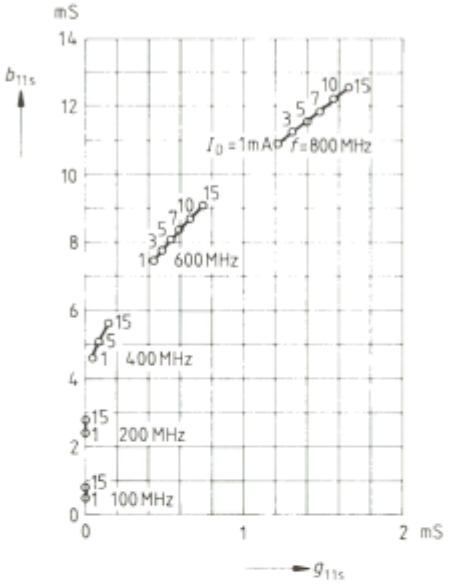
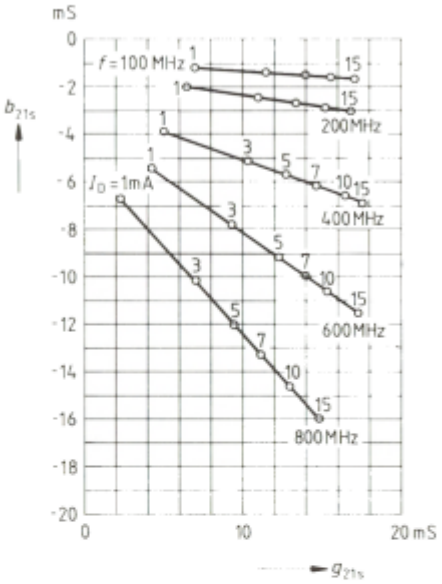
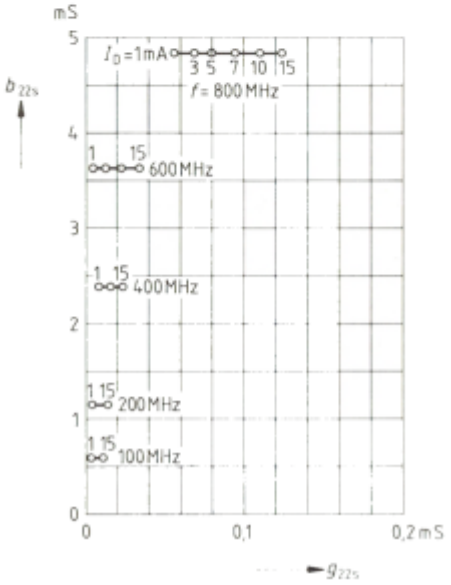
Gate 1-Eingangsleitwert y_{11s}
V_{DS} = 15 V, V_{G2S} = 4 V
(Sourceschaltung)



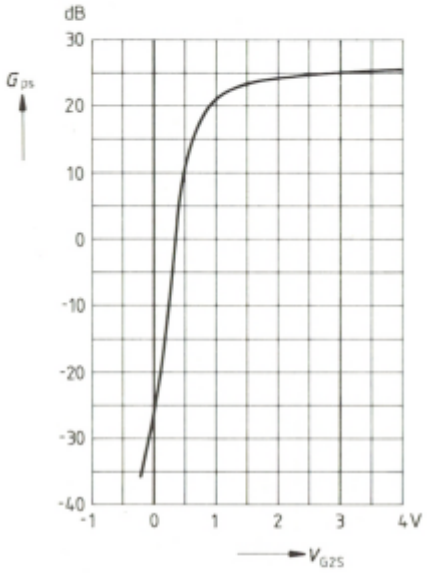
Gate 1-Steilheit y_{21s}
V_{DS} = 15 V, V_{G2S} = 4 V
(Sourceschaltung)



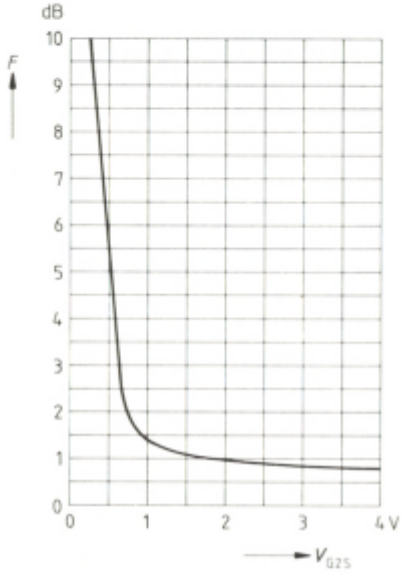
Ausgangsleitwert y_{22s}
V_{DS} = 15 V, V_{G2S} = 4 V
(Sourceschaltung)



Leistungsverstärkung $G_{ps} = f(V_{G2S})$
V_{DS} = 15 V, V_{G1S} = 0 V
I_{DSS} = 10 mA, f = 200 MHz
(s. Meßschaltung)



Rauschzahl $F = f(V_{G2S})$
V_{DS} = 15 V, V_{G1S} = 0 V
I_{DSS} = 10 mA, f = 200 MHz
(s. Meßschaltung)



Meßschaltung für Leistungsverstärkung und Rauschen
f = 200 MHz, G_G = 2 mS, G_L = 0,5 mS