

BF961

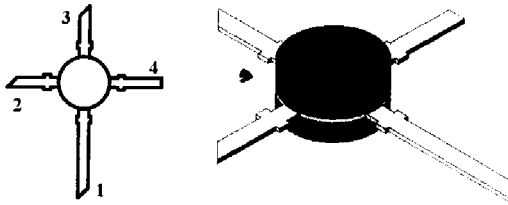
N-Channel Dual Gate MOS-Fieldeffect Tetrode, Depletion Mode

Applications

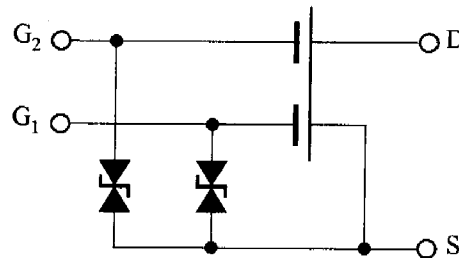
Input- and mixer stages especially for FM- and VHF TV-tuners up to 300 MHz.

Features

- Integrated gate protection diodes
- High cross modulation performance
- Low noise figure
- High AGC-range
- Low feedback capacitance
- Low input capacitance



BF961 Marking: BF961
 Plastic case (TO 50)
 1=Drain, 2=Source, 3=Gate 1, 4=Gate 2



Absolute Maximum Ratings

$T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified

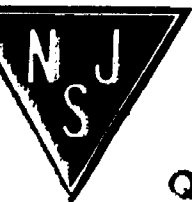
Parameter	Test Conditions	Type	Symbol	Value	Unit
Drain - source voltage			V_{DS}	20	V
Drain current			I_D	30	mA
Gate 1/Gate 2 - source peak current			$\pm I_{G1/G2SM}$	10	mA
Total power dissipation	$T_{amb} \leq 60^{\circ}\text{C}$		P_{tot}	200	mW
Channel temperature			T_{Ch}	150	$^{\circ}\text{C}$
Storage temperature range			T_{stg}	-55 to +150	$^{\circ}\text{C}$

Maximum Thermal Resistance

$T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified

Parameter	Test Conditions	Symbol	Value	Unit
Channel ambient	on glass fibre printed board (40 x 25 x 1.5) mm ³ plated with 35 μm Cu	R_{thChA}	450	K/W

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Electrical DC Characteristics

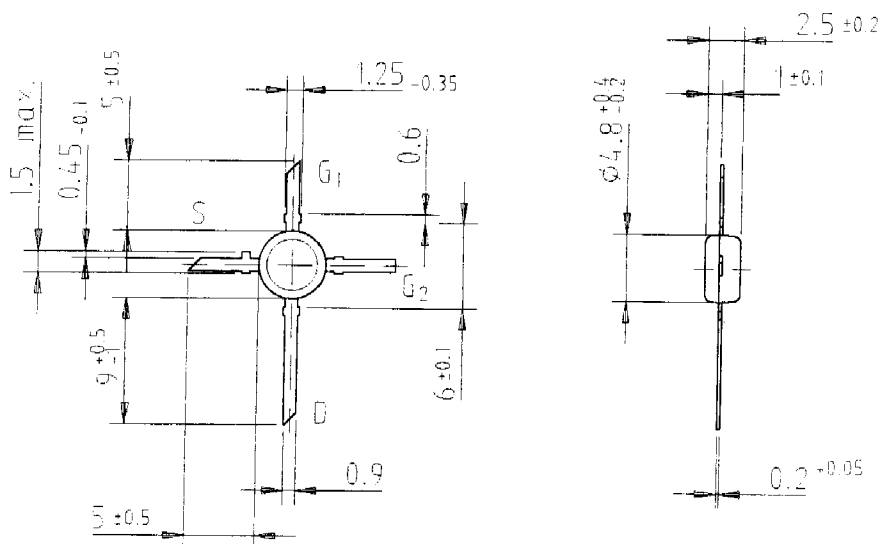
$T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Drain - source breakdown voltage	$I_D = 10 \mu\text{A}$, $-V_{G1S} = -V_{G2S} = 4 \text{ V}$		$V_{(BR)DS}$	20			V
Gate 1 - source breakdown voltage	$\pm I_{G1S} = 10 \text{ mA}$, $V_{G2S} = V_{DS} = 0$		$\pm V_{(BR)G1SS}$	8		14	V
Gate 2 - source breakdown voltage	$\pm I_{G2S} = 10 \text{ mA}$, $V_{G1S} = V_{DS} = 0$		$\pm V_{(BR)G2SS}$	8		14	V
Gate 1 - source leakage current	$\pm V_{G1S} = 5 \text{ V}$, $V_{G2S} = V_{DS} = 0$		$\pm I_{G1SS}$			100	nA
Gate 2 - source leakage current	$\pm V_{G2S} = 5 \text{ V}$, $V_{G1S} = V_{DS} = 0$		$\pm I_{G2SS}$			100	nA
Drain current	$V_{DS} = 15 \text{ V}$, $V_{G1S} = 0$, $V_{G2S} = 4 \text{ V}$	BF961	I_{DSS}	4		20	mA
		BF961A	I_{DSS}	4		10.5	mA
		BF961B	I_{DSS}	9.5		20	mA
Gate 1 - source cut-off voltage	$V_{DS} = 15 \text{ V}$, $V_{G2S} = 4 \text{ V}$, $I_D = 20 \mu\text{A}$		$-V_{G1S(OFF)}$			3.5	V
Gate 2 - source cut-off voltage	$V_{DS} = 15 \text{ V}$, $V_{G1S} = 0$, $I_D = 20 \mu\text{A}$		$-V_{G2S(OFF)}$			3.5	V

Electrical AC Characteristics

$V_{DS} = 15 \text{ V}$, $I_D = 10 \text{ mA}$, $V_{G2S} = 4 \text{ V}$, $f = 1 \text{ MHz}$, $T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Forward transadmittance		$ y_{21s} $	12	15		mS
Gate 1 input capacitance		C_{issg1}		3.7		pF
Gate 2 input capacitance	$V_{G1S} = 0$, $V_{G2S} = 4 \text{ V}$	C_{issg2}		1.6		pF
Feedback capacitance		C_{rss}		25		fF
Output capacitance		C_{oss}		1.6		pF
Power gain	$G_S = 2 \text{ mS}$, $G_L = 0.5 \text{ mS}$, $f = 200 \text{ MHz}$	G_{ps}		20		dB
AGC range	$V_{G2S} = 4 \text{ to } -2 \text{ V}$, $f = 200 \text{ MHz}$	ΔG_{ps}		50		dB
Noise figure	$G_S = 2 \text{ mS}$, $G_L = 0.5 \text{ mS}$, $f = 200 \text{ MHz}$	F		1.8	2.5	dB



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