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BF961

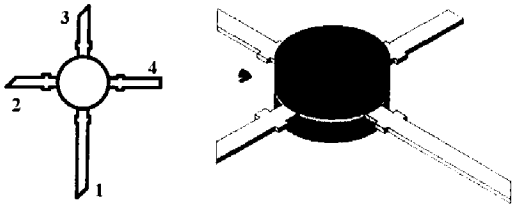
N–Channel Dual Gate MOS-Fieldeffect Tetrode, Depletion Mode

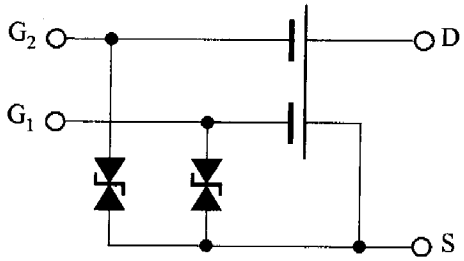
Applications

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°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	$T_{amb} \leq 60$ °C		P_{tot}	200	mW
Channel temperature			T_{Ch}	150	°C
Storage temperature range			T_{stg}	–55 to +150	°C

Maximum Thermal Resistance

T_{amb} = 25°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 35µm Cu	R_{thChA}	450	K/W

Electrical DC Characteristics

T_{amb} = 25°C, unless otherwise specified

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

Electrical AC Characteristics

V_{DS} = 15 V, I_D = 10 mA, V_{G2S} = 4 V, f = 1 MHz , T_{amb} = 25°C, unless otherwise specified

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