

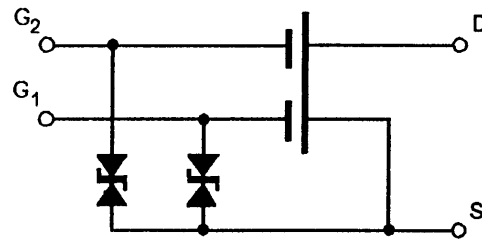
N-channel dual gate MOS-fieldeffect tetrode. Depletion mode.

Electrostatic sensitive device.
Observe precautions for handling.



Applications

Input and mixer stages in UHF- and VHF-tuner.



Features

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

Dimensions in mm

Marking: MOR

Plastic case (SOT 143 R)

Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Drain source voltage	V_{DS}	12	V
Drain current	I_D	30	mA
Gate 1 / gate 2-source peak current	$\pm I_{G1/G2SM}$	10	mA
Gate 1 / gate 2-source peak voltage	$\pm V_{G1S/G2S}$	7	V
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}	-65 to +150	$^\circ\text{C}$

Maximum Thermal Resistance

Parameters	Symbol	Maximum	Unit
Channel ambient on glass fibre printed board (25 x 20 x 1.5) mm ³ plated with 35 μm Cu	R_{thChA}	450	K/W

Electrical DC Characteristics

 $T_{amb} = 25^{\circ}\text{C}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Drain-source breakdown voltage $I_D = 10\ \mu\text{A}$, $-V_{G1S} = -V_{G2S} = 4\ \text{V}$	$V_{(BR)DS}$	12			V
Gate 1-source breakdown voltage $\pm I_{G1S} = 10\ \text{mA}$, $V_{G2S} = V_{DS} = 0\ \text{V}$	$\pm V_{(BR)G1SS}$	8		14	V
Gate 2-source breakdown voltage $\pm I_{G2S} = 10\ \text{mA}$, $V_{G1S} = V_{DS} = 0\ \text{V}$	$\pm V_{(BR)G2SS}$	8		14	V
Gate 1-source cut-off current $\pm V_{G1S} = 5\ \text{V}$, $V_{G2S} = V_{DS} = 0\ \text{V}$	I_{G1SS}			50	nA
Gate 2-source cut-off current $\pm V_{G2S} = 5\ \text{V}$, $V_{G1S} = V_{DS} = 0\ \text{V}$	I_{G2SS}			50	nA
Drain current $V_{DS} = 8\ \text{V}$, $V_{G1S} = 0\ \text{V}$, $V_{G2S} = 4\ \text{V}$	I_{DSS}	4		10.5	mA
Gate 1-source cut-off voltage $V_{DS} = 8\ \text{V}$, $V_{G2S} = 4\ \text{V}$, $I_D = 20\ \mu\text{A}$	$-V_{G1S(OFF)}$		1.0	2.0	V
Gate 2-source cut-off voltage $V_{DS} = 8\ \text{V}$, $V_{G1S} = 0\ \text{V}$, $I_D = 20\ \mu\text{A}$	$-V_{G2S(OFF)}$		0.6	1.0	V

Electrical AC Characteristics

 $V_{DS} = 8\ \text{V}$, $I_D = 10\ \text{mA}$, $V_{G2S} = 4\ \text{V}$, $f = 1\ \text{MHz}$, $T_{amb} = 25^{\circ}\text{C}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward transadmittance	$ y_{21s} $	21	24		mS
Gate 1 input capacitance	C_{issg1}		2.1	2.5	pF
Gate 2 input capacitance $V_{G1S} = 0\ \text{V}$, $V_{G2S} = 4\ \text{V}$	C_{issg2}		1.1		pF
Feedback capacitance	C_{rss}		25		fF
Output capacitance	C_{oss}		1.05		pF
Power gain $G_S = 2\ \text{mS}$, $G_L = 0.5\ \text{mS}$, $f = 200\ \text{MHz}$ $G_S = 3.3\ \text{mS}$, $G_L = 1\ \text{mS}$, $f = 800\ \text{MHz}$	G_{ps} G_{ps}	16.5	28 20		dB dB
AGC range $V_{G2S} = 4\ \text{to}\ -2\ \text{V}$, $f = 800\ \text{MHz}$	ΔG_{ps}	40			dB
Noise figure $G_S = 2\ \text{mS}$, $G_L = 0.5\ \text{mS}$, $f = 200\ \text{MHz}$ $G_S = 3.3\ \text{mS}$, $G_L = 1\ \text{mS}$, $f = 800\ \text{MHz}$	F F		1.1 1.6		dB dB

We reserve the right to make changes to improve technical design without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use TEMIC products for any unintended or unauthorized application, the buyer shall indemnify TEMIC against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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