

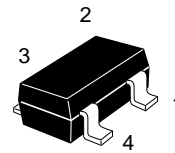
3SK229

GaAs Dual Gate MES FET UHF TV Tuner RF Amplifier

Table 1 Absolute Maximum Ratings
($T_a = 25^\circ\text{C}$)

| Item | Symbol | Rating | Unit |
|---------------------------|-----------|-------------|------------------|
| Drain to source voltage | V_{DS} | 12 | V |
| Gate 1 to source voltage | V_{G1S} | -6 | V |
| Gate 2 to source voltage | V_{G2S} | -6 | V |
| Drain current | I_D | 50 | mA |
| Channel power dissipation | P_{ch} | 150 | mW |
| Channel temperature | T_{ch} | 125 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +125 | $^\circ\text{C}$ |

MPAK-4



1. Source
2. Gate 1
3. Gate 2
4. Drain

Table 2 Electrical Characteristics ($T_a = 25^\circ\text{C}$)

| Item | Symbol | Min | Typ | Max | Unit | Test condition |
|------------------------------------|----------------|-----|------|------|---------------|---|
| Drain to source cutoff current | I_{DSX} | — | — | 50 | μA | $V_{DS} = 12\text{ V}$, $V_{G1S} = -4\text{ V}$, $V_{G2S} = 0$ |
| Gate 1 to source breakdown voltage | $V_{(BR)G1SS}$ | -6 | — | — | V | $I_{G1} = -10\ \mu\text{A}$, $V_{G2S} = V_{DS} = 0$ |
| Gate 2 to source breakdown voltage | $V_{(BR)G2SS}$ | -6 | — | — | V | $I_{G2} = -10\ \mu\text{A}$, $V_{G1S} = V_{DS} = 0$ |
| Gate 1 cutoff current | I_{G1SS} | — | — | -5 | μA | $V_{G1S} = -5\text{ V}$, $V_{G2S} = V_{DS} = 0$ |
| Gate 2 cutoff current | I_{G2SS} | — | — | -5 | μA | $V_{G2S} = -5\text{ V}$, $V_{G1S} = V_{DS} = 0$ |
| Drain current | I_{DSS} | 15 | 25 | 40 | mA | $V_{DS} = 5\text{ V}$, $V_{G1S} = V_{G2S} = 0$ |
| Gate 1 to source cutoff voltage | $V_{G1S(off)}$ | — | -1.3 | -3.5 | V | $V_{DS} = 5\text{ V}$, $V_{G2S} = 0$, $I_D = 100\ \mu\text{A}$ |
| Gate 2 to source cutoff voltage | $V_{G2S(off)}$ | — | -1.3 | -3.5 | V | $V_{DS} = 5\text{ V}$, $V_{G1S} = 0$, $I_D = 100\ \mu\text{A}$ |

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Table 2 Electrical Characteristics (Ta = 25°C) (cont)

| Item | Symbol | Min | Typ | Max | Unit | Test condition |
|------------------------------|------------|-----|-------|------|------|---|
| Forward transfer admittance | $ y_{fs} $ | 20 | 34 | — | mS | $V_{DS} = 5\text{ V}$, $V_{G2S} = 1\text{ V}$, $I_D = 10\text{ mA}$, $f = 1\text{ kHz}$ |
| Input capacitance | C_{iss} | — | 0.56 | 1.0 | pF | $V_{DS} = 5\text{ V}$, $V_{G1S} = V_{G2S} = -4\text{ V}$, $f = 1\text{ MHz}$ |
| Output capacitance | C_{oss} | — | 0.36 | 0.6 | pF | |
| Reverse transfer capacitance | C_{rss} | — | 0.027 | 0.05 | pF | |
| Power gain | PG | 17 | 20 | — | dB | $V_{DS} = 5\text{ V}$, $V_{G2S} = 1\text{ V}$, $I_D = 10\text{ mA}$, $f = 900\text{ MHz}$ |
| Noise figure | NF | — | 1.3 | 2.0 | dB | |

- Marking is "XS-".
- See characteristic curve of 3SK228.