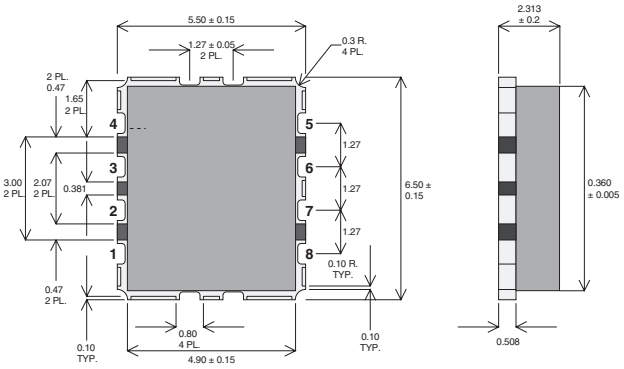
# D2230UK

## METAL GATE RF SILICON FET

### MECHANICAL DATA

Dimensions in mm.




**F-0127 PACKAGE**

| | |
|---|---|
| PIN 1 – SOURCE | PIN 5 – SOURCE |
| PIN 2 – DRAIN | PIN 6 – GATE |
| PIN 3 – DRAIN | PIN 7 – GATE |
| PIN 4 – SOURCE | PIN 8 – SOURCE |

**Ceramic Material: Alumina.**
**Parts can also be supplied with AIN or BeO for improved thermal resistance.**
**Contact Semelab for details.**

# GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET 5W – 12.5V – 1GHz SINGLE ENDED

### FEATURES

- **SIMPLIFIED AMPLIFIER DESIGN**
- **SUITABLE FOR BROAD BAND APPLICATIONS**
- **VERY LOW $C_{rss}$**
- **SIMPLE BIAS CIRCUITS**
- **LOW NOISE**
- **HIGH GAIN – 10 dB MINIMUM**

### APPLICATIONS

- HF/VHF/UHF COMMUNICATIONS from 1 MHz to 2 GHz

## ABSOLUTE MAXIMUM RATINGS ($T_{case}$ = 25°C unless otherwise stated)

| | | |
|---|---|---|
| $P_D$ | Power Dissipation | 17.5W |
| $BV_{DSS}$ | Drain – Source Breakdown Voltage | 40V |
| $BV_{GSS}$ | Gate – Source Breakdown Voltage | ±20V |
| $I_{D(sat)}$ | Drain Current | 4A |
| $T_{stg}$ | Storage Temperature | –65 to 150°C |
| $T_j$ | Maximum Operating Junction Temperature | 200°C |



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## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25°C unless otherwise stated)

| Parameter | | Test Conditions | | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|---|
| $BV_{DSS}$ | Drain–Source Breakdown Voltage | $V_{GS}$ = 0 | $I_D$ = 10mA | | 40 | | | V |
| $I_{DSS}$ | Zero Gate Voltage Drain Current | $V_{DS}$ = 12.5V | $V_{GS}$ = 0 | | | | 2 | mA |
| $I_{GSS}$ | Gate Leakage Current | $V_{GS}$ = 20V | $V_{DS}$ = 0 | | | | 1 | μA |
| $V_{GS(th)}$ | Gate Threshold Voltage* | $I_D$ = 10mA | $V_{DS}$ = $V_{GS}$ | | 0.5 | | 7 | V |
| $g_{fs}$ | Forward Transconductance* | $V_{DS}$ = 10V | $I_D$ = 0.4A | | 0.36 | | | S |
| $G_{PS}$ | Common Source Power Gain | $P_O$ = 5W | | | 10 | | | dB |
| η | Drain Efficiency | $V_{DS}$ = 12.5V | $I_{DQ}$ = 0.2A | | 40 | | | % |
| VSWR | Load Mismatch Tolerance | f = 1GHz | | | 20:1 | | | — |
| $C_{iss}$ | Input Capacitance | $V_{DS}$ = 0V | $V_{GS}$ = –5V | f = 1MHz | | | 24 | pF |
| $C_{oss}$ | Output Capacitance | $V_{DS}$ = 12.5V | $V_{GS}$ = 0 | f = 1MHz | | | 20 | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | $V_{DS}$ = 12.5V | $V_{GS}$ = 0 | f = 1MHz | | | 2 | pF |

* Pulse Test: Pulse Duration = 300 μs , Duty Cycle ≤ 2%

## THERMAL DATA

| | | |
|---|---|---|
| $R_{THj–case}$ | Thermal Resistance Junction – Case | Max. 6°C / W |



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