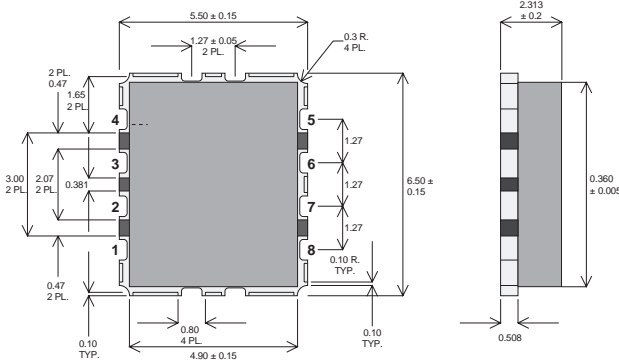


**MECHANICAL DATA**

Dimensions in mm.

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



**F-0127 PACKAGE**

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

**FEATURES**

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

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

**APPLICATIONS**

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

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$  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        |

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}\text{C}$  unless otherwise stated)

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

\* Pulse Test: Pulse Duration = 300  $\mu\text{s}$  , Duty Cycle  $\leq 2\%$

**THERMAL DATA**

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