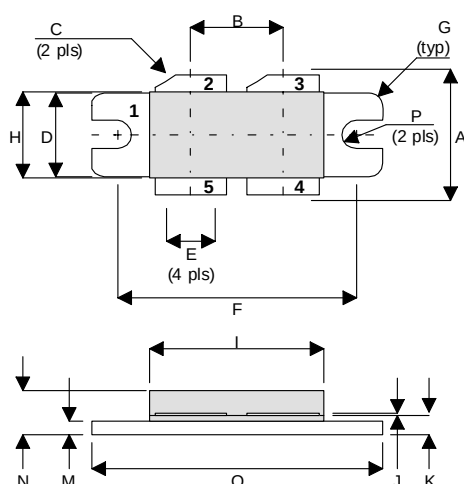


**MECHANICAL DATA**

**D1**

|       |                 |       |         |
|-------|-----------------|-------|---------|
| PIN 1 | SOURCE (COMMON) | PIN 2 | DRAIN 1 |
| PIN 3 | DRAIN 2         | PIN 4 | GATE 2  |
| PIN 5 | GATE 1          |       |         |

| DIM | Millimetres | Tol. | Inches | Tol.  |
|-----|-------------|------|--------|-------|
| A   | 15.24       | 0.50 | 0.600  | 0.020 |
| B   | 10.80       | 0.13 | 0.425  | 0.005 |
| C   | 45°         | 5°   | 45°    | 5°    |
| D   | 9.78        | 0.13 | 0.385  | 0.005 |
| E   | 8.38        | 0.13 | 0.330  | 0.005 |
| F   | 27.94       | 0.13 | 1.100  | 0.005 |
| G   | 1.52R       | 0.13 | 0.060R | 0.005 |
| H   | 10.16       | 0.15 | 0.400  | 0.006 |
| I   | 21.84       | 0.23 | 0.860  | 0.009 |
| J   | 0.10        | 0.02 | 0.004  | 0.001 |
| K   | 1.96        | 0.13 | 0.077  | 0.005 |
| M   | 1.02        | 0.13 | 0.040  | 0.005 |
| N   | 4.45        | 0.38 | 0.175  | 0.015 |
| O   | 34.04       | 0.13 | 1.340  | 0.005 |
| P   | 1.63R       | 0.13 | 0.064R | 0.005 |

# **GOLD METALLISED** **MULTI-PURPOSE SILICON** **DMOS RF FET** **100W – 28V – 500MHz** **PUSH-PULL**

**FEATURES**

- SUITABLE FOR BROAD BAND APPLICATIONS
- SIMPLE BIAS CIRCUITS
- ULTRA-LOW THERMAL RESISTANCE
- BeO FREE
- LOW Crss
- HIGH GAIN – 13 dB MINIMUM

**APPLICATIONS**

- VHF/UHF COMMUNICATIONS  
from 1 MHz to 500 MHz

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

|              |                                        |                         |
|--------------|----------------------------------------|-------------------------|
| $P_D$        | Power Dissipation                      | 500W (290W -A Version)  |
| $BV_{DSS}$   | Drain – Source Breakdown Voltage *     | 70V                     |
| $BV_{GSS}$   | Gate – Source Breakdown Voltage*       | $\pm 20V$               |
| $I_{D(sat)}$ | Drain Current*                         | 15A                     |
| $T_{stg}$    | Storage Temperature                    | $-65$ to $150^{\circ}C$ |
| $T_j$        | Maximum Operating Junction Temperature | $200^{\circ}C$          |

\* Per Side

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

| Parameter                | Test Conditions                                                                                          | Min. | Typ. | Max. | Unit |
|--------------------------|----------------------------------------------------------------------------------------------------------|------|------|------|------|
| <b>PER SIDE</b>          |                                                                                                          |      |      |      |      |
| B <sub>V</sub> DSS       | Drain–Source Breakdown Voltage<br>V <sub>GS</sub> = 0 I <sub>D</sub> = 100mA                             | 70   |      |      | V    |
| I <sub>D</sub> DSS       | Zero Gate Voltage Drain Current<br>V <sub>DS</sub> = 28V V <sub>GS</sub> = 0                             |      |      | 3    | mA   |
| I <sub>G</sub> DSS       | Gate Leakage Current<br>V <sub>GS</sub> = 20V V <sub>DS</sub> = 0                                        |      |      | 1    | μA   |
| V <sub>GS(th)</sub>      | Gate Threshold Voltage*<br>I <sub>D</sub> = 10mA V <sub>DS</sub> = V <sub>GS</sub>                       | 1    |      | 7    | V    |
| g <sub>fs</sub>          | Forward Transconductance*<br>V <sub>DS</sub> = 10V I <sub>D</sub> = 3A                                   | 2.4  |      |      | mhos |
| V <sub>GS(th)match</sub> | Gate Threshold Voltage Matching Between Sides<br>I <sub>D</sub> = 10mA V <sub>DS</sub> = V <sub>GS</sub> |      |      | 0.1  | V    |
| <b>TOTAL DEVICE</b>      |                                                                                                          |      |      |      |      |
| G <sub>PS</sub>          | Common Source Power Gain<br>P <sub>O</sub> = 100W                                                        | 13   |      |      | dB   |
| η                        | Drain Efficiency<br>V <sub>DS</sub> = 28V I <sub>DQ</sub> = 1.2A                                         | 50   |      |      | %    |
| VSWR                     | Load Mismatch Tolerance<br>f = 500MHz                                                                    | 20:1 |      |      | —    |
| <b>PER SIDE</b>          |                                                                                                          |      |      |      |      |
| C <sub>iss</sub>         | Input Capacitance<br>V <sub>DS</sub> = 28V V <sub>GS</sub> = –5V f = 1MHz                                |      |      | 180  | pF   |
| C <sub>oss</sub>         | Output Capacitance<br>V <sub>DS</sub> = 28V V <sub>GS</sub> = 0 f = 1MHz                                 |      |      | 90   | pF   |
| C <sub>rss</sub>         | Reverse Transfer Capacitance<br>V <sub>DS</sub> = 28V V <sub>GS</sub> = 0 f = 1MHz                       |      |      | 7.5  | pF   |

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

### THERMAL DATA

|                       |                                    |                                          |
|-----------------------|------------------------------------|------------------------------------------|
| R <sub>THj-case</sub> | Thermal Resistance Junction – Case | Max. 0.35°C / W<br>0.6 °C / W -A Version |
|-----------------------|------------------------------------|------------------------------------------|

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