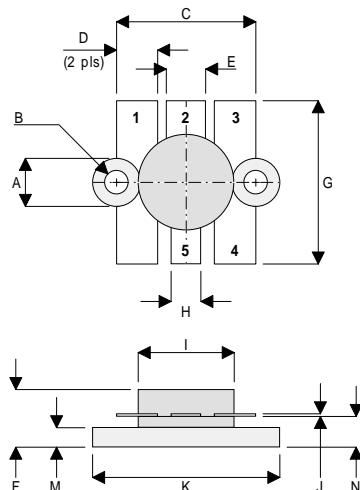


**MECHANICAL DATA**



**DT**

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

| DIM | mm       | Tol. | Inches    | Tol.  |
|-----|----------|------|-----------|-------|
| A   | 6.35 DIA | 0.13 | 0.250 DIA | 0.005 |
| B   | 3.17 DIA | 0.13 | 0.125 DIA | 0.005 |
| C   | 18.41    | 0.25 | 0.725     | 0.010 |
| D   | 5.46     | 0.13 | 0.215     | 0.005 |
| E   | 5.21     | 0.13 | 0.205     | 0.005 |
| F   | 7.62     | MAX  | 0.300     | MAX   |
| G   | 21.59    | 0.38 | 0.850     | 0.015 |
| H   | 3.94     | 0.13 | 0.155     | 0.005 |
| I   | 12.70    | 0.13 | 0.500     | 0.005 |
| J   | 0.13     | 0.03 | 0.005     | 0.001 |
| K   | 24.76    | 0.13 | 0.975     | 0.005 |
| M   | 2.59     | 0.13 | 0.102     | 0.005 |
| N   | 4.06     | 0.25 | 0.160     | 0.010 |

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

|              |  |                            |
|--------------|--|----------------------------|
| $P_D$        | Power Dissipation                      | 117W                       |
| $BV_{DSS}$   | Drain – Source Breakdown Voltage       | 40V                        |
| $BV_{GSS}$   | Gate – Source Breakdown Voltage        | $\pm 20\text{V}$           |
| $I_{D(sat)}$ | Drain Current                          | 30A                        |
| $T_{stg}$    | Storage Temperature                    | -65 to $150^\circ\text{C}$ |
| $T_j$        | Maximum Operating Junction Temperature | 200°C                      |

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.

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Document Number 3170  
Issue 1

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

| Parameter    | Test Conditions                    |                  | Min.              | Typ. | Max. | Unit    |
|--------------|------------------------------------|------------------|-------------------|------|------|---------|
| $BV_{DSS}$   | Drain-Source<br>Breakdown Voltage  | $V_{GS} = 0$     | $I_D = 100mA$     | 40   |      | V       |
| $I_{DSS}$    | Zero Gate Voltage<br>Drain Current | $V_{DS} = 12.5V$ | $V_{GS} = 0$      |      | 1    | mA      |
| $I_{GSS}$    | Gate Leakage Current               | $V_{GS} = 20V$   | $V_{DS} = 0$      |      | 1    | $\mu A$ |
| $V_{GS(th)}$ | Gate Threshold Voltage*            | $I_D = 10mA$     | $V_{DS} = V_{GS}$ | 1    | 7    | V       |
| $g_{fs}$     | Forward Transconductance*          | $V_{DS} = 10V$   | $I_D = 3A$        | 2.4  |      | S       |
| $G_{PS}$     | Common Source Power Gain           | $P_O = 30W$      |                   | 10   |      | dB      |
| $\eta$       | Drain Efficiency                   | $V_{DS} = 12.5V$ | $I_{DQ} = 0.6A$   | 50   |      | %       |
| VSWR         | Load Mismatch Tolerance            | $f = 500MHz$     |                   | 20:1 |      | —       |
| $C_{iss}$    | Input Capacitance                  | $V_{DS} = 0$     | $V_{GS} = -5V$    |      | 180  | pF      |
| $C_{oss}$    | Output Capacitance                 | $V_{DS} = 12.5V$ | $V_{GS} = 0$      |      | 120  | pF      |
| $C_{rss}$    | Reverse Transfer Capacitance       | $V_{DS} = 12.5V$ | $V_{GS} = 0$      |      | 12   | pF      |

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

**HAZARDOUS MATERIAL WARNING**

The ceramic portion of the device between leads and metal flange is beryllium oxide. Beryllium oxide dust is highly toxic and care must be taken during handling and mounting to avoid damage to this area.

**THESE DEVICES MUST NEVER BE THROWN AWAY WITH GENERAL INDUSTRIAL OR DOMESTIC WASTE.**

**THERMAL DATA**

|                |                                    |                |
|----------------|------------------------------------|----------------|
| $R_{THj-case}$ | Thermal Resistance Junction – Case | Max. 1.5°C / W |
|----------------|------------------------------------|----------------|

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