

**TECHNICAL DATA**  
**DATA SHEET 4188, REV. A****LOW  $R_{DS(on)}$  HERMETIC POWER MOSFET - N-CHANNEL****FEATURES:**

- 100 Volt, 0.022 Ohm, 60A MOSFET
- Isolated Hermetic Metal Package
- Ultra Low  $R_{DS(on)}$

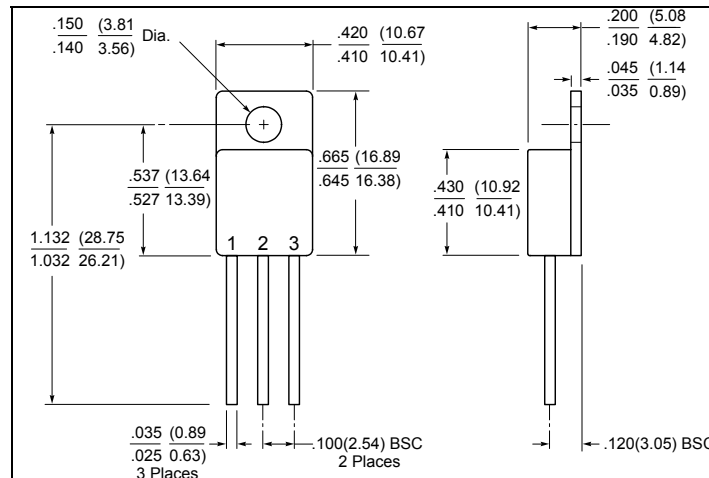
**MAXIMUM RATINGS**ALL RATINGS ARE AT  $T_C = 25^\circ\text{C}$  UNLESS OTHERWISE SPECIFIED.

| RATING                               | SYMBOL          | MIN. | TYP. | MAX.     | UNITS              |
|--------------------------------------|-----------------|------|------|----------|--------------------|
| GATE TO SOURCE VOLTAGE               | $V_{GS}$        | -    | -    | $\pm 20$ | Volts              |
| ON-STATE DRAIN CURRENT               | $I_{D25}$       | -    | -    | 35*      | Amps               |
| PULSED DRAIN CURRENT                 | $I_{DM}$        | -    | -    | 170      | Amps               |
| OPERATING AND STORAGE TEMPERATURE    | $T_J/T_{STG}$   | -55  | -    | +150     | $^\circ\text{C}$   |
| TOTAL DEVICE DISSIPATION             | $P_D$           | -    | -    | 190      | Watts              |
| THERMAL RESISTANCE, JUNCTION TO CASE | $R_{\theta JC}$ | -    | -    | 0.65     | $^\circ\text{C/W}$ |

Note: \* current limited by package; die rating is 90A

**ELECTRICAL CHARACTERISTICS**

| CHARACTERISTIC                                                                                                                                | SYMBOL                              | MIN. | TYP.               | MAX.        | UNITS           |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------|--------------------|-------------|-----------------|
| DRAIN TO SOURCE BREAKDOWN VOLTAGE<br>$V_{GS} = 0V, I_D = 250\mu A$                                                                            | $BV_{DSS}$                          | 100  | -                  | -           | Volts           |
| STATIC DRAIN TO SOURCE ON STATE RESISTANCE<br>$V_{GS} = 10V, I_D = 30A$                                                                       | $R_{DS(ON)}$                        | -    | 0.022              | 0.028       | $\Omega$        |
| GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu A$                                                                                      | $V_{GS(th)}$                        | 2    | -                  | 4           | Volts           |
| FORWARD TRANSCONDUCTANCE<br>$V_{DS} = 15V, I_D = 30A$                                                                                         | $g_{fs}$                            | 25   | -                  | -           | S(1/ $\Omega$ ) |
| ZERO GATE VOLTAGE DRAIN CURRENT<br>$V_{DS} = 0.8 \times \text{Max. rating}, V_{GS} = 0V, T_J = 25^\circ\text{C}$<br>$T_J = 125^\circ\text{C}$ | $I_{DSS}$                           | -    | -                  | 1<br>50     | $\mu A$         |
| GATE TO SOURCE LEAKAGE FORWARD $V_{GS} = 20V$<br>GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = -20V$                                               | $I_{GSS}$                           | -    | -                  | 100<br>-100 | nA              |
| TURN ON DELAY TIME $V_{DD} = 50V$<br>RISE TIME $I_D = 55A$                                                                                    | $t_{d(ON)}$<br>$t_r$                | -    | 20<br>110          | 30<br>170   | nsec            |
| TURN OFF DELAY TIME $V_{GS}=10V$<br>FALL TIME $R_G = 2.5\Omega$                                                                               | $t_{d(OFF)}$<br>$t_f$               | -    | 65<br>100          | 100<br>150  | nsec            |
| DIODE FORWARD VOLTAGE $I_F = 30A, V_{GS} = 0V$<br>Pulse test, $t \leq 300 \mu s$ , duty cycle $d \leq 2\%$                                    | $V_{SD}$                            | -    | 1.0                | 1.2         | Volts           |
| REVERSE RECOVERY TIME $T_J = 25^\circ\text{C}$ ,<br>$I_F=30A, V_R = 100V$<br>$di/dt = 100A/\mu sec$                                           | $t_{rr}$                            | -    | 70                 | 140         | nsec            |
| INPUT CAPACITANCE $V_{GS} = 0V$ ,<br>OUTPUT CAPACITANCE $V_{DS} = 25V$ ,<br>REVERSE TRANSFER CAPACITANCE $f = 1.0\text{MHz}$                  | $C_{iss}$<br>$C_{oss}$<br>$C_{rss}$ | -    | 8700<br>740<br>450 | -           | pF              |

**SENSITRON****TECHNICAL DATA****DATA SHEET 4188, REV. A****MECHANICAL DIMENSIONS: in Inches / mm****TO-257**

| DEVICE TYPE                        | PIN-1 | PIN-2  | PIN-3 |
|------------------------------------|-------|--------|-------|
| N-CHANNEL MOSFET<br>TO-257 PACKAGE | DRAIN | SOURCE | GATE  |

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