

## TECHNICAL DATA

DATA SHEET 682, REV -

Formerly part number SHD2199

**HERMETIC POWER MOSFET  
P-CHANNEL**

## FEATURES:

- -100 Volt, 0.2 Ohm, -18A MOSFET
- Electrically Isolated Hermetically Sealed
- Low  $R_{DS(on)}$
- Equivalent to IRF9140 Series

## MAXIMUM RATINGS

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

| RATING                                                                                                                     | SYMBOL           | MIN. | TYP. | MAX.       | UNITS              |
|----------------------------------------------------------------------------------------------------------------------------|------------------|------|------|------------|--------------------|
| GATE TO SOURCE VOLTAGE                                                                                                     | $V_{GS}$         | -    | -    | $\pm 20$   | Volts              |
| CONTINUOUS DRAIN CURRENT $V_{GS}=10\text{V}$ , $T_C = 25^\circ\text{C}$<br>$V_{GS}=10\text{V}$ , $T_C = 100^\circ\text{C}$ | $I_D$            | -    | -    | -18<br>-11 | Amps               |
| PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$                                                                            | $I_{DM}$         | -    | -    | -72        | Amps               |
| OPERATING AND STORAGE TEMPERATURE                                                                                          | $T_{OP}/T_{STG}$ | -55  | -    | +150       | $^\circ\text{C}$   |
| TERMAL RESISTANCE JUNCTION TO CASE                                                                                         | $R_{\theta JC}$  | -    | -    | 0.78       | $^\circ\text{C/W}$ |
| TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$                                                                        | $P_D$            | -    | -    | 160        | Watts              |

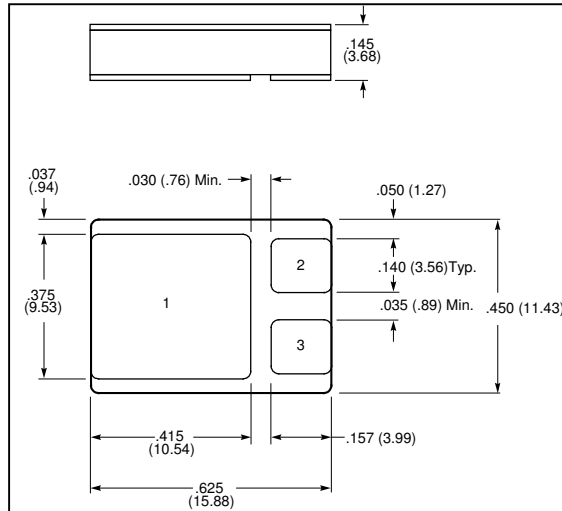
## ELECTRICAL CHARACTERISTICS

|                                                                                                                                                                                                    |                                                 |                  |                          |                      |                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------|--------------------------|----------------------|-----------------------|
| DRAIN TO SOURCE BREAKDOWN VOLTAGE<br>$V_{GS} = 0\text{V}$ , $I_D = 1.0\text{mA}$                                                                                                                   | $BV_{DSS}$                                      | -100             | -                        | -                    | Volts                 |
| DRAIN TO SOURCE ON STATE RESISTANCE<br>$V_{GS} = -10\text{V}$ , $I_D = -11\text{A}$<br>$V_{GS} = -10\text{V}$ , $I_D = -18\text{A}$                                                                | $R_{DS(ON)}$                                    | -                | -                        | 0.20<br>0.22         | $\Omega$              |
| GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}$ , $I_D = -250\mu\text{A}$                                                                                                                                 | $V_{GS(th)}$                                    | -2.0             | -                        | -4.0                 | Volts                 |
| FORWARD TRANSCONDUCTANCE<br>$V_{DS} \geq -15\text{V}$ , $I_{DS} = -11\text{A}$                                                                                                                     | $g_{fs}$                                        | 6.2              | -                        | -                    | $\text{S}(1/\Omega)$  |
| ZERO GATE VOLTAGE DRAIN CURRENT<br>$V_{DS} = 0.8 \times \text{Max. Rating}$ , $V_{GS} = 0\text{V}$<br>$V_{DS} = 0.8 \times \text{Max. Rating}$<br>$V_{GS} = 0\text{V}$ , $T_J = 125^\circ\text{C}$ | $I_{DSS}$                                       | -                | -                        | -25<br>-250          | $\mu\text{A}$         |
| GATE TO SOURCE LEAKAGE FORWARD $V_{GS} = -20\text{V}$<br>GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = 20\text{V}$                                                                                      | $I_{GSS}$                                       | -                | -                        | -100<br>100          | nA                    |
| TOTAL GATE CHARGE $V_{GS} = -10\text{V}$<br>GATE TO SOURCE CHARGE $V_{DS} = \text{Max. Rating} \times 0.5$<br>GATE TO DRAIN CHARGE $I_D = -18\text{A}$                                             | $Q_g$<br>$Q_{gs}$<br>$Q_{gd}$                   | 31<br>3.7<br>7.0 | -                        | 60<br>13<br>35.2     | nC                    |
| TURN ON DELAY TIME $V_{DD} = -50\text{V}$ ,<br>RISE TIME $I_D = -11\text{A}$ ,<br>TURN OFF DELAY TIME $R_G = 9.1\Omega$<br>FALL TIME                                                               | $t_{d(on)}$<br>$t_r$<br>$t_{d(off)}$<br>$t_f$   | -                | -                        | 35<br>85<br>85<br>65 | nsec                  |
| DIODE FORWARD VOLTAGE $T_J = 25^\circ\text{C}$ , $I_S = -18\text{A}$ ,<br>$V_{GS} = 0\text{V}$                                                                                                     | $V_{SD}$                                        | -                | -                        | -4.2                 | Volts                 |
| DIODE REVERSE RECOVERY TIME $T_J = 25^\circ\text{C}$ ,<br>REVERSE RECOVERY CHARGE $I_F = -18\text{A}$ ,<br>$di/dt = -100\text{A}/\mu\text{sec}$ ,<br>$V_{DD} \leq -50\text{V}$                     | $t_{rr}$<br><br>$Q_{rr}$                        | -                | -                        | 280<br>3.6           | nsec<br>$\mu\text{C}$ |
| INPUT CAPACITANCE $V_{GS} = 0\text{V}$ ,<br>OUTPUT CAPACITANCE $V_{DS} = 25\text{V}$ ,<br>REVERSE TRANSFER CAPACITANCE $f = 1.0\text{MHz}$<br>DRAIN TO CASE CAPACITANCE                            | $C_{iss}$<br>$C_{oss}$<br>$C_{rss}$<br>$C_{DC}$ | -                | 1400<br>600<br>200<br>12 | -                    | pF                    |

[查询"SHD219409"供应商](#)

**SENSITRON**  
**DATA SHEET 682**  
**REVISION -**

**MECHANICAL DIMENSIONS: in Inches / mm**



**LCC-3P**

**PINOUT TABLE**

| DEVICE TYPE              | PIN 1 | PIN 2  | PIN 3 |
|--------------------------|-------|--------|-------|
| MOSFET<br>LCC-3P PACKAGE | DRAIN | SOURCE | GATE  |

**TECHNICAL DATA**

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