

TECHNICAL DATA  
DATA SHEET 223, REV A  
Former part number SHD2259

## HERMETIC POWER MOSFET N-CHANNEL

**FEATURES:**

- 100 Volt, .07 Ohm, 30A MOSFET
- Isolated Hermetic Metal Package
- Fast Switching
- Low  $R_{DS(on)}$
- Equivalent to IRFM150

**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                              | $I_D$         | -    | -    | 34       | Amps             |
| PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$     | $I_{DM}$      | -    | -    | 136      | Amps             |
| OPERATING AND STORAGE TEMPERATURE                   | $T_J/T_{STG}$ | -55  | -    | +150     | $^\circ\text{C}$ |
| TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$ | $P_D$         | -    | -    | 150      | Watts            |

**ELECTRICAL CHARACTERISTICS**

|   |              |     |   |           |               |
|---|--------------|-----|---|-----------|---------------|
| DRAIN TO SOURCE BREAKDOWN VOLTAGE<br>$V_{GS} = 0V, I_D = 1.0\text{ mA}$   | $BV_{DSS}$   | 100 | - | -         | Volts         |
| STATIC DRAIN TO SOURCE ON STATE RESISTANCE<br>$V_{GS} = 10V, I_D = 21A$   | $R_{DS(ON)}$ | -   | - | 0.07      | $\Omega$      |
| GATE THRESHOLD VOLTAGE<br>$V_{DS} = V_{GS}, I_D = 250\mu A$   | $V_{GS(th)}$ | 2.0 | - | 4.0       | Volts         |
| FORWARD TRANSCONDUCTANCE<br>$V_{DS} \geq 15V, I_{DS} = 21A$   | $g_{fs}$     | 9.0 | - | -         | $S(1/\Omega)$ |
| ZERO GATE VOLTAGE DRAIN CURRENT<br>$V_{DS} = 0.8 \times \text{Max. rating}, V_{GS} = 0V, T_J = 125^\circ\text{C}$ | $I_{DSS}$    | -   | - | 25<br>250 | $\mu A$       |
| GATE TO SOURCE LEAKAGE FORWARD<br>$V_{GS} = 20V$  | $I_{GSS}$    | -   | - | 100       | nA            |
| GATE TO SOURCE LEAKAGE REVERSE<br>$V_{GS} = -20V$   |              |     |   | -100      |               |

## SENSITRON

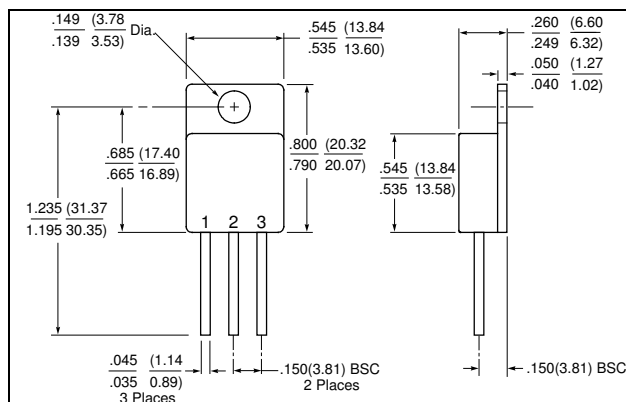
## DATA SHEET 223

## REVISION A

## ELECTRICAL CHARACTERISTICS (Continued)

| RATING                               |  | SYMBOL               | MIN. | TYP. | MAX.       | UNITS           |
|--------------------------------------|--|----------------------|------|------|------------|-----------------|
| TURN ON DELAY TIME                   | $V_{DD} = 50V,$  | $t_{d(ON)}$          | -    | -    | 35         | nsec            |
| RISE TIME                            | $I_D = 34A,$   | $t_r$                |      |      | 190        |                 |
| TURN OFF DELAY TIME                  | $V_{GS} = 10V$   | $t_{d(OFF)}$         |      |      | 170        |                 |
| FALL TIME                            |  | $t_f$                |      |      | 130        |                 |
| DIODE FORWARD VOLTAGE                | $I_S = 34A, V_{GS} = 0V$<br>Pulse test, $t \leq 300 \mu s,$ duty cycle $d \leq 2 \%$ | $V_{SD}$             | -    | -    | 1.8        | Volts           |
| REVERSE RECOVERY TIME                | $T_J = 25^\circ C,$<br>$I_f = 34A$<br>$di/dt = 100A/\mu sec$                         | $t_{rr}$<br>$Q_{rr}$ | -    | -    | 600<br>2.9 | nsec<br>$\mu C$ |
| INPUT CAPACITANCE                    | $V_{GS} = 0V$  | $C_{iss}$            | -    | 3700 | -          | pF              |
| OUTPUT CAPACITANCE                   | $V_{DS} = 25V$   | $C_{oss}$            |      | 1100 |            |                 |
| REVERSE TRANSFER CAPACITANCE         | $f = 1.0MHz$   | $C_{rss}$            |      | 350  |            |                 |
| THERMAL RESISTANCE, JUNCTION TO CASE |  | $R_{thJC}$           | -    | -    | 0.83       | $^\circ C/W$    |

## MECHANICAL DIMENSIONS: in Inches / mm

**TO-254**

| DEVICE TYPE                        | PIN-1 | PIN-2  | PIN-3 |
|------------------------------------|-------|--------|-------|
| N-CHANNEL MOSFET<br>TO-254 PACKAGE | DRAIN | SOURCE | GATE  |

**TECHNICAL DATA**

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