

# POWER MOSFETS

## HERMETIC POWER MOSFETS

### N-CHANNEL, SURFACE MOUNT

| TYPE<br>NUMBER | DRAIN TO<br>SOURCE<br>BREAKDOWN<br>VOLTAGE<br>$V_{(BR)DSS}$ | CONTINUOUS<br>DRAIN<br>CURRENT<br>$I_D$<br>Amps |       | MAXIMUM<br>POWER<br>DISSIPATION<br>$P_D$<br>Watts | STATIC<br>DRAIN TO<br>SOURCE ON<br>RESISTANCE<br>$R_{DS(on)}$ |      | MAXIMUM<br>THERMAL<br>RESISTANCE<br>$R_{\theta JC}$ | SIMILAR<br>PART TYPE | PKG.<br>STYLE                                                                         |
|----------------|-------------------------------------------------------------|-------------------------------------------------|-------|---------------------------------------------------|---------------------------------------------------------------|------|-----------------------------------------------------|----------------------|---------------------------------------------------------------------------------------|
|                | Volts                                                       | 25°C                                            | 100°C | 25°C                                              | Ohms                                                          | Amps | °C/W                                                |                      |                                                                                       |
| SHD218413      | 30                                                          | 50                                              | 50    | 100                                               | .012                                                          | 20   | 0.7                                                 | ⓈMTP75N03            |    |
| SHD2181        | 60                                                          | 45                                              | 31    | 200                                               | .02                                                           | 31   | 0.6                                                 | IRFM054              |                                                                                       |
| SHD2182        | 100                                                         | 38                                              | 24    | 200                                               | .055                                                          | 24   | 0.6                                                 | IRFM150              |                                                                                       |
| SHD2183        | 200                                                         | 30                                              | 19    | 200                                               | .85                                                           | 19   | 0.6                                                 | IRFM250              |                                                                                       |
| SHD2184        | 400                                                         | 14                                              | 9.0   | 200                                               | .30                                                           | 9.0  | 0.6                                                 | IRFM350              |                                                                                       |
| SHD2185        | 500                                                         | 12                                              | 7.75  | 200                                               | .40                                                           | 7.75 | 0.6                                                 | IRFM450              |                                                                                       |
| SHD2186        | 800                                                         | 7.1                                             | 4.5   | 200                                               | 1.2                                                           | 4.5  | 0.6                                                 | IRFAE50              |                                                                                       |
| SHD2187        | 900                                                         | 6.2                                             | 4.0   | 200                                               | 1.6                                                           | 4.0  | 0.6                                                 | IRFAF50              |                                                                                       |
| SHD2188        | 1000                                                        | 5.6                                             | 3.5   | 200                                               | 2.0                                                           | 3.5  | 0.6                                                 | IRFAG50              | SHD-5                                                                                 |
| SHD218413A     | 30                                                          | 50                                              | 50    | 100                                               | .012                                                          | 20   | 0.7                                                 | ⓈMTP75N03            |    |
| SHD2181A       | 60                                                          | 45                                              | 31    | 200                                               | .02                                                           | 21   | 0.6                                                 | IRFM054              |                                                                                       |
| SHD2182A       | 100                                                         | 38                                              | 24    | 200                                               | .055                                                          | 24   | 0.6                                                 | IRFM150              |                                                                                       |
| SHD2183A       | 200                                                         | 30                                              | 19    | 200                                               | .085                                                          | 19   | 0.6                                                 | IRFM250              |                                                                                       |
| SHD2184A       | 400                                                         | 14                                              | 9.0   | 200                                               | .30                                                           | 9.0  | 0.6                                                 | IRFM350              |                                                                                       |
| SHD2185A       | 500                                                         | 12                                              | 7.75  | 200                                               | .40                                                           | 7.75 | 0.6                                                 | IRFM450              |                                                                                       |
| SHD2186A       | 800                                                         | 7.1                                             | 4.5   | 200                                               | 1.2                                                           | 4.5  | 0.6                                                 | IRFAE50              |                                                                                       |
| SHD2187A       | 900                                                         | 6.2                                             | 4.0   | 200                                               | 1.6                                                           | 4.0  | 0.6                                                 | IRFAF50              |                                                                                       |
| SHD2188A       | 1000                                                        | 5.6                                             | 3.5   | 200                                               | 2.0                                                           | 3.5  | 0.6                                                 | IRFAG50              | SHD-5A                                                                                |
| SHD218413B     | 30                                                          | 50                                              | 50    | 100                                               | .012                                                          | 20   | 0.7                                                 | ⓈMTP75N03            |  |
| SHD2181B       | 60                                                          | 45                                              | 31    | 200                                               | .02                                                           | 21   | 0.6                                                 | IRFM054              |                                                                                       |
| SHD2182B       | 100                                                         | 38                                              | 24    | 200                                               | .055                                                          | 24   | 0.6                                                 | IRFM150              |                                                                                       |
| SHD2183B       | 200                                                         | 30                                              | 19    | 200                                               | .085                                                          | 19   | 0.6                                                 | IRFM250              |                                                                                       |
| SHD2184B       | 400                                                         | 14                                              | 9.0   | 200                                               | .30                                                           | 9.0  | 0.6                                                 | IRFM350              |                                                                                       |
| SHD2185B       | 500                                                         | 12                                              | 7.75  | 200                                               | .40                                                           | 7.75 | 0.6                                                 | IRFM450              |                                                                                       |
| SHD2186B       | 800                                                         | 7.1                                             | 4.5   | 200                                               | 1.2                                                           | 4.5  | 0.6                                                 | IRFAE50              |                                                                                       |
| SHD2187B       | 900                                                         | 6.2                                             | 4.0   | 200                                               | 1.6                                                           | 4.0  | 0.6                                                 | IRFAF50              |                                                                                       |
| SHD2188B       | 1000                                                        | 5.6                                             | 3.5   | 200                                               | 2.0                                                           | 3.5  | 0.6                                                 | IRFAG50              | SHD-5B                                                                                |
| SHD239501      | 60                                                          | 45                                              | 31    | 200                                               | .02                                                           | 31   | 0.37                                                | IRFM054              |  |
| SHD239502      | 100                                                         | 38                                              | 24    | 200                                               | .055                                                          | 24   | 0.37                                                | IRFM150              |                                                                                       |
| SHD239601      | 100                                                         | 75                                              | 50    | 300                                               | .025                                                          | 37.5 | 0.27                                                | IXTM75N10            |                                                                                       |
| SHD239602      | 100                                                         | 75                                              | 50    | 300                                               | .025                                                          | 37.5 | 0.27                                                | IXFM75N10            |                                                                                       |
| SHD239503      | 200                                                         | 30                                              | 19    | 200                                               | .085                                                          | 19   | 0.37                                                | IRFM250              |                                                                                       |
| SHD239603      | 200                                                         | 50                                              | 30    | 300                                               | .05                                                           | 25   | 0.27                                                | IXTM50N20            |                                                                                       |
| SHD239604      | 200                                                         | 50                                              | 30    | 300                                               | .05                                                           | 25   | 0.27                                                | IXFM50N20            |                                                                                       |
| SHD239504      | 400                                                         | 14                                              | 9.0   | 200                                               | .30                                                           | 9.0  | 0.37                                                | IRFM350              |                                                                                       |
| SHD239505      | 500                                                         | 12                                              | 7.75  | 200                                               | .40                                                           | 7.75 | 0.37                                                | IRFM450              |                                                                                       |
| SHD239605      | 500                                                         | 24                                              | 18    | 300                                               | .23                                                           | 12   | 0.27                                                | IXTM24N50            |                                                                                       |
| SHD239606      | 500                                                         | 24                                              | 18    | 300                                               | .23                                                           | 12   | 0.27                                                | IXFM24N50            |                                                                                       |
| SHD239607      | 600                                                         | 20                                              | 12    | 300                                               | .35                                                           | 10   | 0.27                                                | IXTM20N60            |                                                                                       |
| SHD239608      | 600                                                         | 20                                              | 12    | 300                                               | .35                                                           | 10   | 0.27                                                | IXFM20N60            |                                                                                       |
| SHD239506      | 800                                                         | 7.1                                             | 4.5   | 200                                               | 1.2                                                           | 4.5  | 0.34                                                | IRFAE50              |                                                                                       |
| SHD239609      | 800                                                         | 13                                              | 8.0   | 300                                               | .80                                                           | 6.5  | 0.27                                                | IXTM13N80            |                                                                                       |
| SHD239610      | 800                                                         | 13                                              | 8.0   | 300                                               | .80                                                           | 6.5  | 0.27                                                | IXFM13N80            |                                                                                       |
| SHD239507      | 900                                                         | 6.2                                             | 4.0   | 200                                               | 1.6                                                           | 4.0  | 0.34                                                | IRFAF50              |                                                                                       |
| SHD239611      | 900                                                         | 12                                              | 7.2   | 300                                               | .90                                                           | 6.0  | 0.27                                                | IXTM12N90            |                                                                                       |
| SHD239612      | 900                                                         | 12                                              | 7.2   | 300                                               | .90                                                           | 6.0  | 0.27                                                | IXFM12N90            |                                                                                       |
| SHD239508      | 1000                                                        | 5.6                                             | 3.5   | 200                                               | 2.0                                                           | 3.5  | 0.34                                                | IRFAG50              |                                                                                       |
| SHD239613      | 1000                                                        | 12                                              | 7.2   | 300                                               | 1.05                                                          | 6.0  | 0.27                                                | IXTM12N100           | SHD-6                                                                                 |
| SHD239614      | 1000                                                        | 12                                              | 7.2   | 300                                               | 1.05                                                          | 6.0  | 0.27                                                | IXFM12N100           |                                                                                       |

Ⓢ PRELIMINARY INFORMATION

## HERMETIC POWER MOSFETS

### P-CHANNEL, SURFACE MOUNT

|  | DRAIN TO | CONTINUOUS | MAXIMUM | STATIC | MAXIMUM | SIMILAR |  |
|--|----------|------------|---------|--------|---------|---------|--|
|--|----------|------------|---------|--------|---------|---------|--|

| TYPE<br>NUMBER | SOURCE<br>BREAKDOWN<br>VOLTAGE<br>$V_{(BR)DSS}$ | DRAIN<br>CURRENT<br>$I_D$ |       | POWER<br>DISSIPATION<br>$P_D$ | DRAIN TO<br>SOURCE ON<br>RESISTANCE<br>$R_{DS(on)}$ |      | THERMAL<br>RESISTANCE<br>$R_{\theta JC}$ | PART TYPE | PKG.<br>STYLE                                                                                 |
|----------------|-------------------------------------------------|---------------------------|-------|-------------------------------|-----------------------------------------------------|------|------------------------------------------|-----------|-----------------------------------------------------------------------------------------------|
|                | Volts                                           | 25°C                      | 100°C | Watts                         | Ohms                                                | Amps | °C/W                                     |           |                                                                                               |
| SHD2189        | -100                                            | -18                       | -11   | 125                           | .20                                                 | -11  | 1.0                                      | IRF9140   | <br>SHD-5  |
| SHD21810       | -200                                            | -11                       | -7    | 125                           | .50                                                 | -7   | 1.0                                      | IRF9240   |                                                                                               |
| SHD2189A       | -100                                            | -18                       | -11   | 125                           | .20                                                 | -11  | 1.0                                      | IRF9140   | <br>SHD-5A |
| SHD21810A      | -200                                            | -11                       | -7    | 125                           | .50                                                 | -7   | 1.0                                      | IRF9240   |                                                                                               |
| SHD2189B       | -100                                            | -18                       | -11   | 125                           | .20                                                 | -11  | 1.0                                      | IRF9140   | <br>SHD-5B |
| SHD21810B      | -200                                            | -11                       | -7    | 125                           | .50                                                 | -7   | 1.0                                      | IRF9240   |                                                                                               |

**Notes:**

-All ratings are at  $T_C = 25^\circ\text{C}$  unless otherwise specified.

-Maximum operating and storage temperature  $-55^\circ\text{C}$  to  $+150^\circ\text{C}$ .

**PINOUTS**

| DEVICE TYPE                                      | PIN 1 | PIN 2  | PIN 3 |
|--------------------------------------------------|-------|--------|-------|
| MOSFET - SHD-5, SHD-5A, SHD-5B,<br>LCC-3P, SHD-6 | DRAIN | SOURCE | GATE  |

**Note:** Ceramic seals and GlidCop® leads available.