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# IRFH7932TRPBF-TP

**N-Channel 30V(D-S) Enhancement MOSFET**

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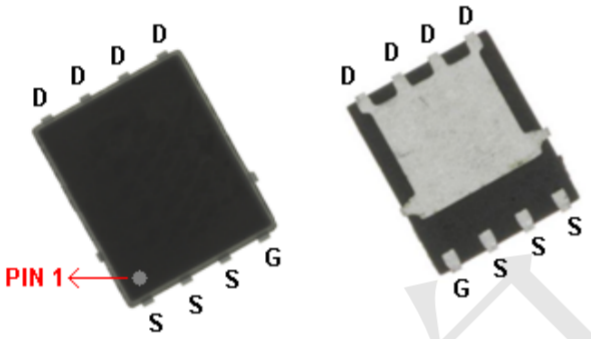
## Product Summary

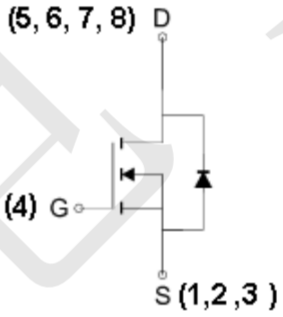
- $V_{DS}$ = 30V $I_D$ =150A
- $R_{DS(ON)}$≤2.5mΩ@$V_{GS}$=10V
- $R_{DS(ON)}$≤3.3mΩ@$V_{GS}$=4.5V

## Application

- Load/Power switch
- Interfacing, logic switching
- Battery management for ultra protable
- electronics

**PowerDFN 5x6**




N-Channel MOSFET

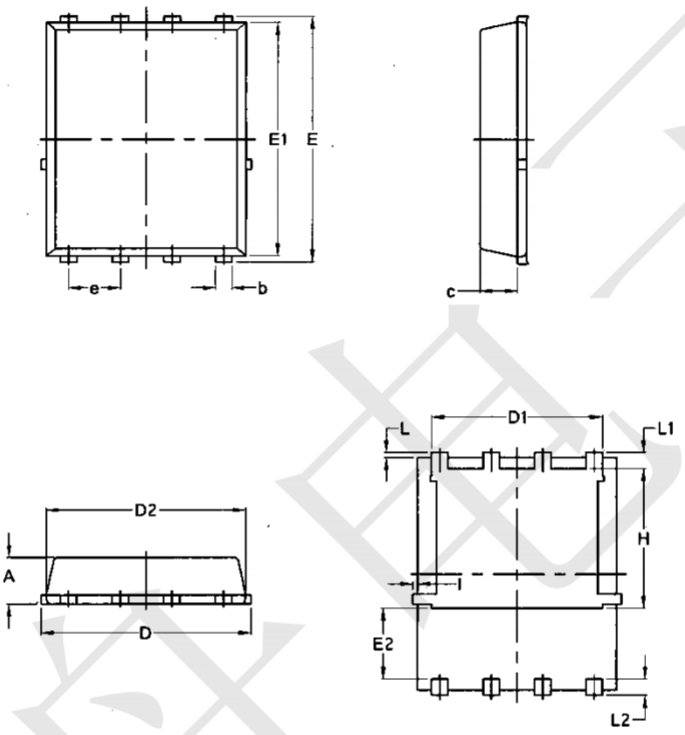
## Absolute Maximum Ratings ($T_A$=25°C unless otherwise specified)

| Parameter | | Symbol | Maximum Ratings | | Unit |
|---|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DS}$ | 30 | | V |
| Gate-Source Voltage | | $V_{GS}$ | ±20 | | V |
| Continuous Drain | $T_C$=25℃ | | 150 | | A |
| | $T_C$=100℃ | | 100 | | |
| Pulsed Drain Current | | $I_{DM}$ | 350 | | A |
| Maximum Power Dissipation* | $T_A$=25℃ | $P_D$ | 75 | | W |
| | $T_A$=100℃ | | 30 | | |
| Operating Junction Temperature | | $T_J$ | -55 to 150 | | ℃ |
| Thermal Resistance-Junction to Ambient* | | $R_{\theta JA}$ | Steady State | 45 | ℃/W |
| Thermal Resistance-Junction to Case* | | $R_{\theta JC}$ | 3.3 | | ℃/W |

## Electrical Characteristics (T =25°C unless otherwise specified)

| Symbol | Parameter | Limit | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **STATIC** | | | | | | |
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}$=0V, $I_D$=250μA | 30 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}$=$V_{GS}$, $I_D$=250μA | 1.3 | | 3.0 | V |
| $I_{GSS}$ | Gate Leakage Current | $V_{DS}$=0V, $V_{GS}$=±20V | | | ±100 | nA |
| $I_{DSS}$ | Zero Gate Voltage Drain Current | $V_{DS}$=30V, $V_{GS}$=0V | | | 1 | μA |
| $R_{DS(ON)}$ | Drain-Source On-State Resistance[a] | $V_{GS}$=10V, $I_D$=27A | | 1.9 | 2.5 | mΩ |
| | | $V_{GS}$=4.5V, $I_D$=20A | | 2.5 | 3.3 | |
| $V_{SD}$ | Diode Forward Voltage | $I_S$=2.8A, $V_{GS}$=0V | | 0.75 | 1.1 | V |
| **DYNAMIC** | | | | | | |
| Qg | Total Gate Charge | $V_{DS}$=15V, $V_{GS}$=4.5V, $I_D$=27A | | 58 | | nC |
| Qgs | Gate-Source Charge | | | 23 | | |
| Qgd | Gate-Drain Charge | | | 30 | | |
| Ciss | Input Capacitance | $V_{DS}$=15V, $V_{GS}$=0V, F=1MHz | | 5930 | | pF |
| Coss | Output Capacitance | | | 660 | | |
| Crss | Reverse Transfer Capacitance | | | 220 | | |
| Rg | Gate-Resistance | $V_{DS}$=0V, $V_{GS}$=0V, F=1MHz | | 0.85 | | Ω |
| $t_{d(on)}$ | Turn-On Delay Time | $V_{DD}$=15V, $R_L$=15Ω, $I_D$=1A, $V_{GEN}$=10V, $R_G$=6Ω | | 36 | | Ns |
| $t_r$ | Turn-On Rise Time | | | 23 | | |
| $t_{d(off)}$ | Turn-Off Delay Time | | | 170 | | |
| $t_f$ | Turn-Off Fall Time | | | 44 | | |

## Package Outline Dimensions PDFN5*6-8L




| Symbol | Common | | | |
|---|---|---|---|---|
| | mm | | Inch | |
| | Mim | Max | Min | Max |
| A | 1.03 | 1.17 | 0.0406 | 0.0461 |
| b | 0.34 | 0.48 | 0.0134 | 0.0189 |
| c | 0.824 | 0.0970 | 0.0324 | 0.082 |
| D | 4.80 | 5.40 | 0.1890 | 0.2126 |
| D1 | 4.11 | 4.31 | 0.1618 | 0.1697 |
| D2 | 4.80 | 5.00 | 0.1890 | 0.1969 |
| E | 5.95 | 6.15 | 0.2343 | 0.2421 |
| E1 | 5.65 | 5.85 | 0.2224 | 0.2303 |
| E2 | 1.60 | / | 0.0630 | / |
| e | 1.27 BSC | | 0.05 BSC | |
| L | 0.05 | 0.25 | 0.0020 | 0.0098 |
| L1 | 0.38 | 0.50 | 0.0150 | 0.0197 |
| L2 | 0.38 | 0.50 | 0.0150 | 0.0197 |
| H | 3.30 | 3.50 | 0.1299 | 0.1378 |
| I | / | 0.18 | / | 0.0070 |