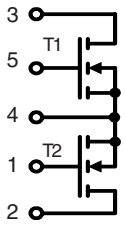
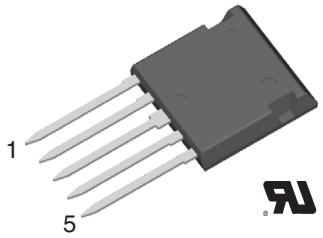
# HiPerFET™ Power MOSFET

Common Source Topology
in ISOPLUS i4-PAC™

$I_{D25}$ = 75 A
$V_{DSS}$ = 100 V
$R_{DSon\,typ.}$ = 18 mΩ

Preliminary data




**MOSFET T1/T2**

| Symbol | Conditions | Maximum Ratings | |
|---|---|---|---|
| $V_{DSS}$ | $T_{VJ}$ = 25°C to 150°C | 100 | V |
| $V_{GS}$ | | ±20 | V |
| $I_{D25}$ | $T_C$ = 25°C | 75 | A |
| $I_{D90}$ | $T_C$ = 90°C | 50 | A |
| $I_{F25}$ | (body diode) $T_C$ = 25°C | 100 | A |
| $I_{F90}$ | (body diode) $T_C$ = 90°C | 60 | A |
| dv/dt | $V_{DS} < V_{DSS}$; $I_F \le 300A$; $\lvert di_F/dt \rvert \le 100A/\mu s$; $R_G$ = 2 Ω; $T_{VJ}$ = 150°C | 5 | V/ns |
| $E_{AR}$ | $T_C$ = 25°C | 30 | mJ |

| Symbol | Conditions | Characteristic Values ($T_{VJ}$ = 25°C, unless otherwise specified) min. | typ. | max. | |
|---|---|---|---|---|---|
| $R_{DSon}$ | $V_{GS}$ = 10 V; $I_D = I_{D90}$ | | 18 | 25 | mΩ |
| $V_{GSth}$ | $V_{DS}$ = 20 V; $I_D$ = 4 mA | 2 | | 4 | V |
| $I_{DSS}$ | $V_{DS} = V_{DSS}$; $V_{GS}$ = 0 V; $T_{VJ}$ = 25°C | | | 0.3 | mA |
| | $T_{VJ}$ = 125°C | | 0.25 | | mA |
| $I_{GSS}$ | $V_{GS}$ = ±20 V; $V_{DS}$ = 0 V | | | 200 | nA |
| $Q_g$ | $V_{GS}$= 10 V; $V_{DS} = 0.5 \bullet V_{DSS}$; $I_D = I_{D90}$ | | 180 | | nC |
| $Q_{gs}$ | | | 35 | | nC |
| $Q_{gd}$ | | | 85 | | nC |
| $t_{d(on)}$ | $V_{GS}$= 10 V; $V_{DS} = 0.5 \bullet V_{DSS}$ | | 20 | | ns |
| $t_r$ | $I_D = I_{D90}$; $R_G$ = 2 Ω | | 60 | | ns |
| $t_{d(off)}$ | | | 80 | | ns |
| $t_f$ | | | 60 | | ns |
| $V_F$ | (body diode) $I_F$ = 75 A; $V_{GS}$ = 0 V | | 1.2 | 1.5 | V |
| $t_{rr}$ | (body diode) $I_F$ = 37.5A; -di/dt = 100A/μs; $V_{DS}$ = 25V | | 300 | | ns |
| $R_{thJC}$ | | | | 0.5 | K/W |
| $R_{thJH}$ | with heat transfer paste | | 0.93 | | K/W |

### Features

- HiPerFET™ technology
  - low $R_{DSon}$
  - low gate charge for high frequency operation
  - unclamped inductive switching (UIS) capability
  - dv/dt ruggedness
  - fast intrinsic reverse diode
- ISOPLUS i4-PAC™ package
  - isolated back surface
  - low coupling capacity between pins and heatsink
  - enlarged creepage towards heatsink
  - application friendly pinout
  - low inductive current path
  - high reliability
  - industry standard outline
  - UL registered E 72873

### Applications

- drives and power supplies
- battery or fuel cell powered
- automotive, industrial vehicle etc.
- secondary side of mains power supplies

IXYS reserves the right to change limits, test conditions and dimensions.

**Component**

| Symbol | Conditions | Maximum Ratings | |
|---|---|---|---|
| $T_{VJ}$ | | -55...+150 | °C |
| $T_{stg}$ | | -55...+125 | °C |
| $V_{ISOL}$ | $I_{ISOL} \leq 1$ mA; 50/60 Hz | 2500 | V~ |
| $F_C$ | mounting force with clip | 20...120 | N |

| Symbol | Conditions | Characteristic Values min. | typ. | max. | |
|---|---|---|---|---|---|
| $C_p$ | coupling capacity between shorted pins and mounting tab in the case | | 40 | | pF |
| $d_S$, $d_A$ | pin - pin | 1.7 | | | mm |
| $d_S$, $d_A$ | pin - backside metal | 5.5 | | | mm |
| **Weight** | | | | | |

**Dimensions in mm (1 mm = 0.0394")**