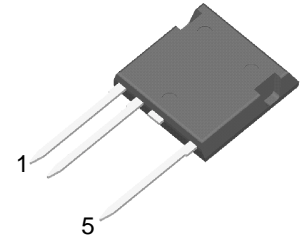
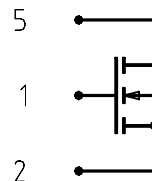


# HiPerFET™ Power Mosfet

in High Voltage ISOPLUS I4-PAC™

## IXFF 24N100

$I_{D25} = 22 \text{ A}$   
 $V_{DSS} = 1000 \text{ V}$   
 $R_{DSon} = 390 \text{ m}\Omega$



### MOSFETs

| Symbol    | Conditions   | Maximum Ratings |      |
|-----------|--|-----------------|------|
| $V_{DSS}$ | $T_{VJ} = 25^\circ\text{C to } 150^\circ\text{C}$  | 1000            | V    |
| $V_{GS}$  |  | $\pm 20$        | V    |
| $I_{D25}$ | $T_C = 25^\circ\text{C}$   | 22              | A    |
| $I_{D90}$ | $T_C = 90^\circ\text{C}$   | 15              | A    |
| $I_{F25}$ | (diode) $T_C = 25^\circ\text{C}$   | 120             | A    |
| $I_{F90}$ | (diode) $T_C = 90^\circ\text{C}$   | 75              | A    |
| $dv/dt$   | $V_{DS} < V_{DSS}; I_F \leq 100\text{A};  di_F/dt  \leq 100\text{A}/\mu\text{s}; R_G = 2 \Omega$<br>$T_{VJ} = 150^\circ\text{C}$ | 5               | V/ns |
| $E_{AR}$  | $T_C = 25^\circ\text{C}$   | 64              | mJ   |

### 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™ high voltage package
  - isolated back surface
  - enlarged creepage towards heatsink
  - enlarged creepage between high voltage pins
  - application friendly pinout
  - high reliability
  - industry standard outline

| Symbol       | Conditions  | Characteristic Values<br>( $T_{VJ} = 25^\circ\text{C}$ , unless otherwise specified) |      |                |
|--------------|---|--|------|----------------|
|              |   | min.   | typ. | max.           |
| $R_{DSon}$   | $V_{GS} = 10 \text{ V}; I_D = I_{D90}$  |  |      | 390 m $\Omega$ |
| $V_{GSth}$   | $V_{DS} = 20 \text{ V}; I_D = 8 \text{ mA};$  | 2.5  |      | 5 V            |
| $I_{DSS}$    | $V_{DS} = V_{DSS}; V_{GS} = 0 \text{ V}; T_{VJ} = 25^\circ\text{C}$<br>$T_{VJ} = 125^\circ\text{C}$ |  | 0.25 | 0.1 mA         |
| $I_{GSS}$    | $V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$   |  |      | 200 nA         |
| $Q_g$        |   |  | 250  | nC             |
| $Q_{gs}$     |   |  | 55   | nC             |
| $Q_{gd}$     |   |  | 135  | nC             |
| $t_{d(on)}$  |   |  | 35   | ns             |
| $t_r$        |   |  | 35   | ns             |
| $t_{d(off)}$ |   |  | 75   | ns             |
| $t_f$        |   |  | 21   | ns             |
| $V_F$        | (diode) $I_F = 12 \text{ A}; V_{GS} = 0 \text{ V}$  |  |      | 1.5 V          |
| $t_{rr}$     | (diode) $I_F = 24 \text{ A}; -di/dt = 100 \text{ A}/\mu\text{s}; V_{DS} = 100 \text{ V}$            |  | 250  | ns             |
| $R_{thJC}$   |   |  |      | 0.32 K/W       |

### Applications

- switched mode power supplies
- DC-DC converters
- resonant converters

**Component**

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

| Symbol        | Conditions             | Characteristic Values |      |      |
|---------------|------------------------|-----------------------|------|------|
|               |                        | min.                  | typ. | max. |
| $d_s, d_A$    | D pin - S pin          | 7.0                   |      | mm   |
| $d_s, d_A$    | pin - backside metal   | 5.5                   |      | mm   |
| $R_{thCH}$    | with heatsink compound |                       | 0.15 | K/W  |
| <b>Weight</b> |                        |                       | 9    | g    |

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