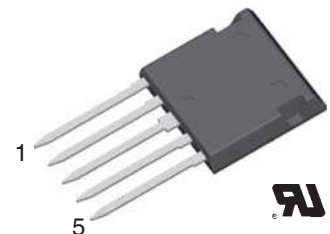
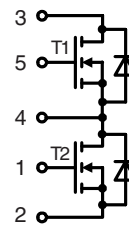


HiPerFET™ Power MOSFET

Phaseleg Topology
in ISOPLUS i4-PAC™

$I_{D25} = 75 \text{ A}$
 $V_{DSS} = 100 \text{ V}$
 $R_{DSon\text{typ.}} = 18 \text{ m}\Omega$

Preliminary data



| MOSFET T1/T2 | | | |
|--------------|--|-----------------|------|
| Symbol | Conditions | Maximum Ratings | |
| V_{DSS} | $T_{VJ} = 25^\circ\text{C to } 150^\circ\text{C}$ | 100 | V |
| V_{GS} | | ± 20 | V |
| I_{D25} | $T_C = 25^\circ\text{C}$ | 75 | A |
| I_{D90} | $T_C = 90^\circ\text{C}$ | 50 | A |
| I_{F25} | (body diode) $T_C = 25^\circ\text{C}$ | 100 | A |
| I_{F90} | (body diode) $T_C = 90^\circ\text{C}$ | 60 | A |
| dv/dt | $V_{DS} < V_{DSS}; I_F \leq 300\text{A}; di_F/dt \leq 100\text{A}/\mu\text{s}; R_G = 2 \Omega$ $T_{VJ} = 150^\circ\text{C}$ | 5 | V/ns |
| E_{AR} | $T_C = 25^\circ\text{C}$ | 30 | mJ |

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

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. |
| 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 | | | 9 | g |

Dimensions in mm (1 mm = 0.0394")
