

**HiPerFET™ Power MOSFET**

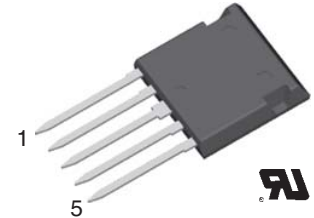
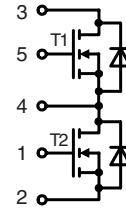
Phaseleg Topology  
in ISOPLUS i4-PAC™

$$I_{D25} = 75 \text{ A}$$

$$V_{DSS} = 100 \text{ V}$$

$$R_{DSon\text{typ.}} = 18 \text{ m}\Omega$$

Preliminary data



MOSFET T1/T2			
Symbol	Conditions	Maximum Ratings	
$V_{DSS}$	$T_{VJ} = 25^\circ\text{C to } 150^\circ\text{C}$	100	V
$V_{GS}$		$\pm 20$	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 $\Omega$
$V_{GSth}$	$V_{DS} = 20 \text{ V}; I_D = 4 \text{ mA}$	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
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			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

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

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**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
<b>Weight</b>			9	g

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