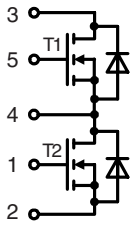
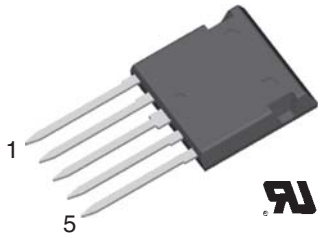
HiPerFET™ Power MOSFET

Phaseleg 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 • 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 • 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.

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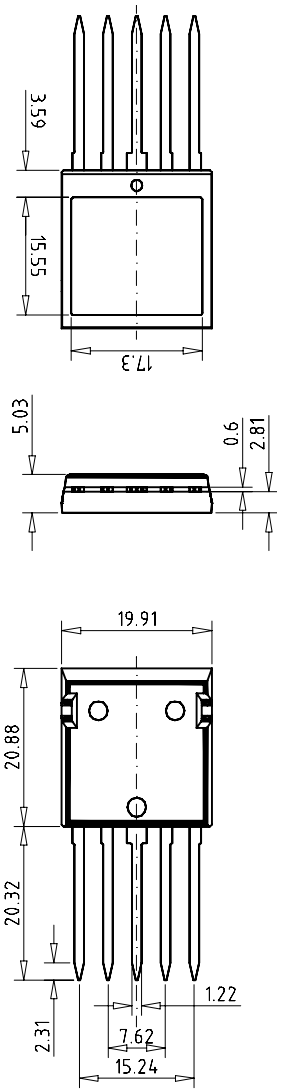
Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-55...+150	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1$ 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			9		g

Dimensions in mm (1 mm = 0.0394")



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