

HiPerFET™

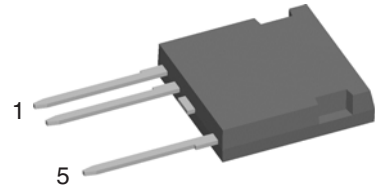
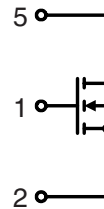
Power MOSFET

In High Voltage ISOPLUS i4-PAC™

$$I_{D25} = 22 \text{ A}$$

$$V_{DSS} = 1000 \text{ V}$$

$$R_{DSon} = 390 \text{ m}\Omega$$



MOSFET

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	1000	V
V_{GS}		± 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	$V_{DS} < V_{DSS}; I_F \leq 100\text{A}; di_F/dt \leq 100\text{A}/\mu\text{s}; R_G = 2 \Omega$ $T_{VJ} = 150^{\circ}\text{C}$	5	V/ns
E_{AR}	$T_C = 25^{\circ}\text{C}$	64	mJ

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
R_{DSon}	$V_{GS} = 10 \text{ V}; I_D = I_{D90}$			390 m Ω
V_{GSth}	$V_{DS} = 20 \text{ V}; I_D = 8 \text{ mA};$	2.5		5 V
I_{DSS}	$V_{DS} = V_{DSS}; V_{GS} = 0 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		0.25	0.1 mA mA
I_{GSS}	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			200 nA
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10 \text{ V}; V_{DS} = 500 \text{ V}; I_D = 12 \text{ A}$		250 55 135	nC nC nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f			35 35 75 21	ns ns ns 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

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

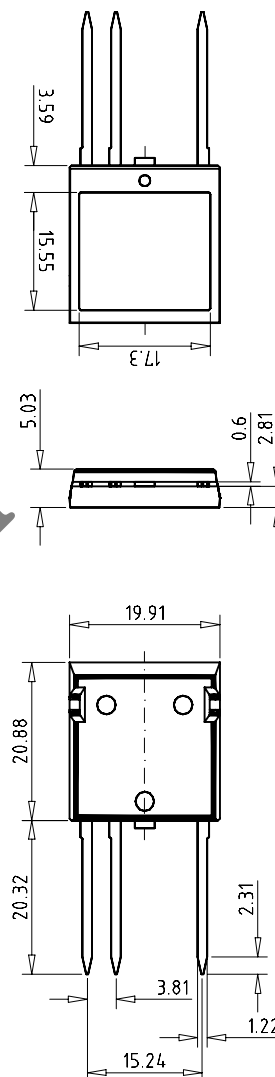
Applications

- 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
Weight			9	g

Dimensions in mm (1 mm = 0.0394")


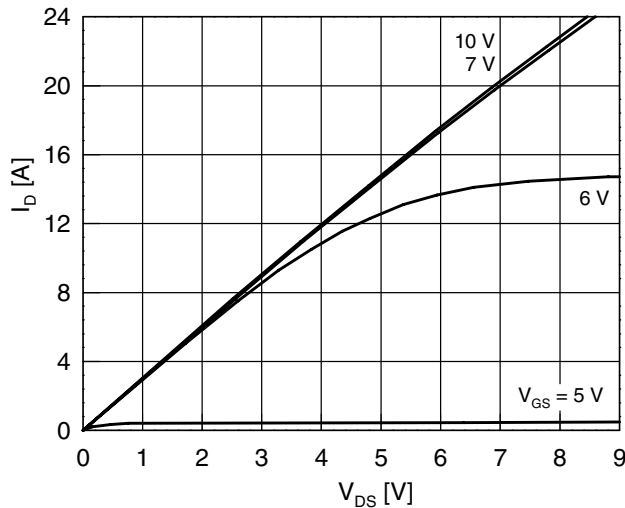


Fig. 1. Output Characteristics @ 25°C

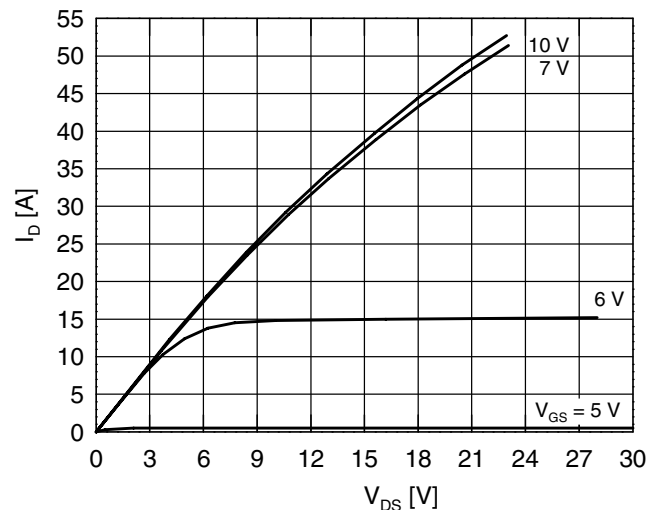


Fig. 2. Extended Output Characteristics @ 25°C

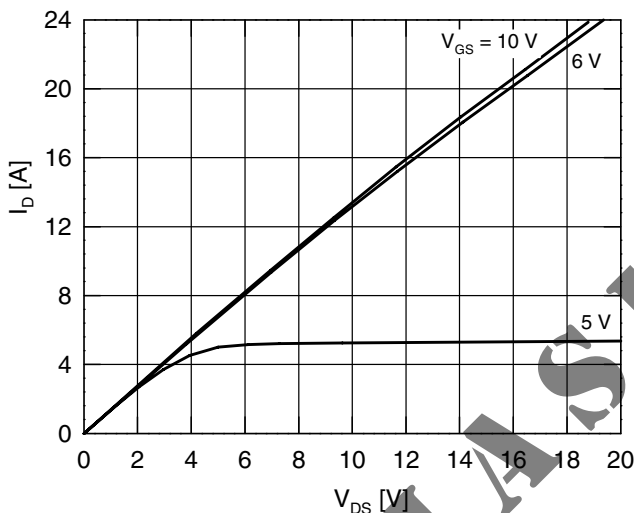


Fig. 3. Output Characteristics @ 125°C

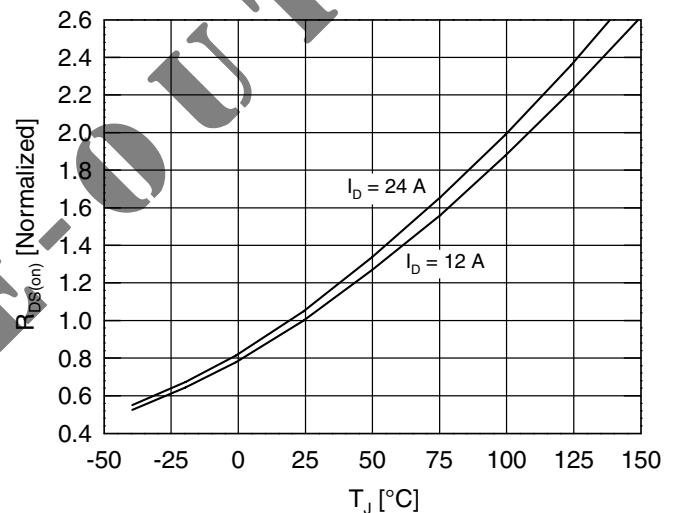


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 12$ A Value versus Junction Temperature

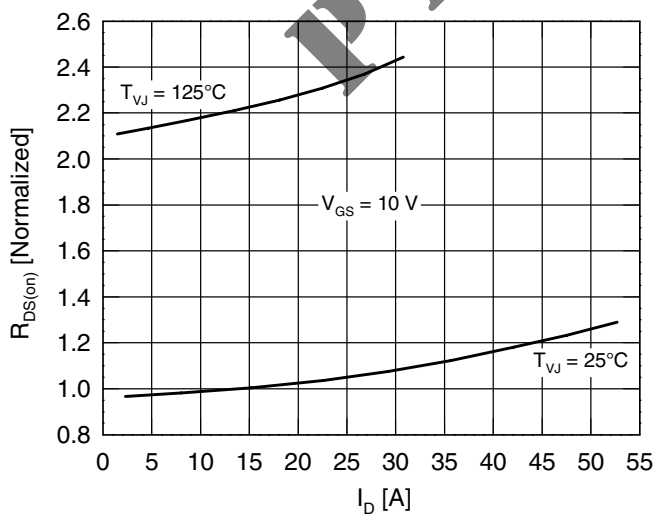


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 12$ A Value versus Drain Current

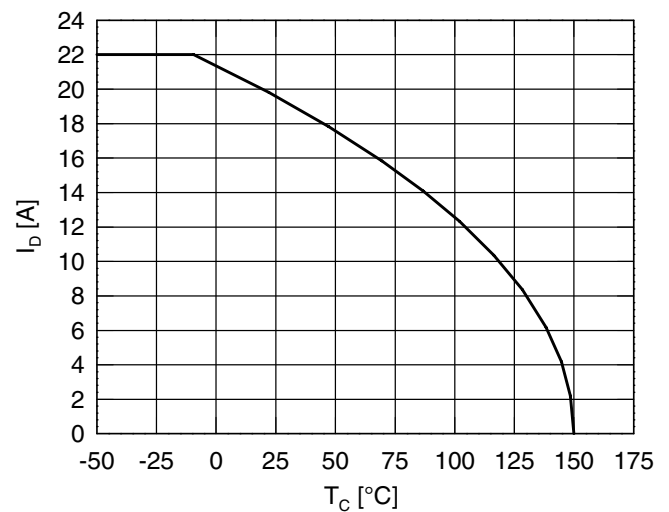


Fig. 6. Max. Drain Current vs. Case Temperature

