

HiPerFET™

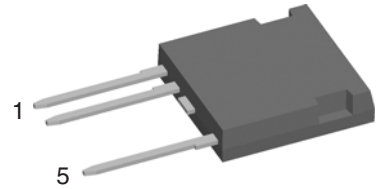
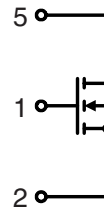
Power MOSFET

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°C, unless otherwise specified)			
		min.	typ.	max.	
R _{DSon}	V _{GS} = 10 V; I _D = I _{D90}			390 mΩ	
V _{GSth}	V _{DS} = 20 V; I _D = 8 mA;	2.5		5 V	
I _{DSS}	V _{DS} = V _{DSS} ; V _{GS} = 0 V; T _{VJ} = 25°C T _{VJ} = 125°C		0.25	0.1 mA mA	
I _{GSS}	V _{GS} = ±20 V; V _{DS} = 0 V			200 nA	
Q _g Q _{gs} Q _{gd}	} V _{GS} = 10 V; V _{DS} = 500 V; I _D = 12 A		250	nC	
				55	nC
				135	nC
t _{d(on)} t _r t _{d(off)} t _f	} V _{GS} = 10 V; V _{DS} = 500 V; I _D = 12 A; R _G = 1 Ω		35	ns	
				35	ns
				75	ns
				21	ns
V _F	(diode) I _F = 12 A; V _{GS} = 0 V			1.5 V	
t _{rr}	(diode) I _F = 24 A; -di/dt = 100 A/μs; V _{DS} = 100 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

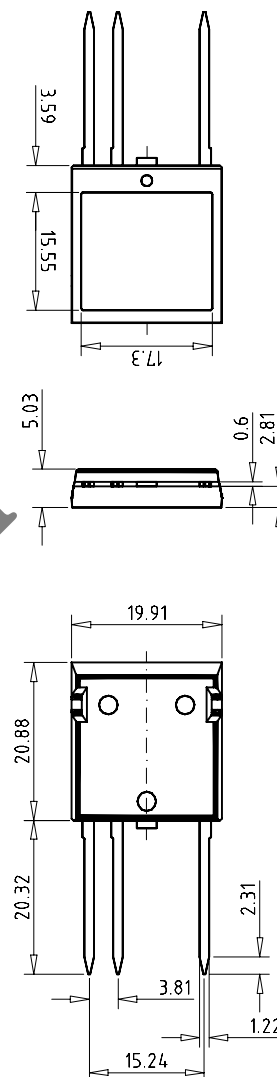
- switched mode power supplies
- DC-DC converters
- resonant converters

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")



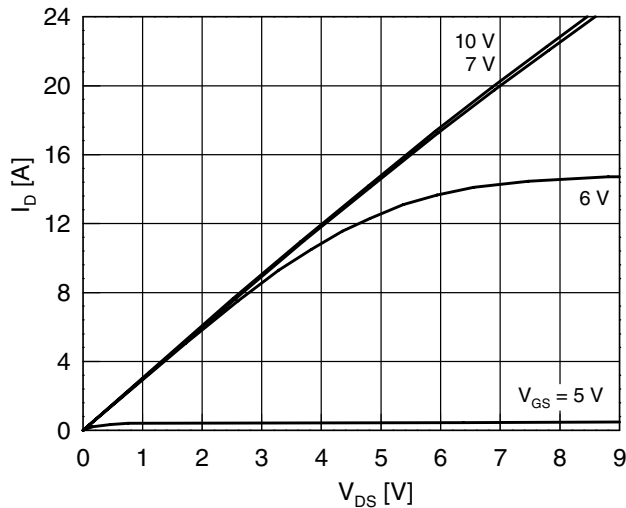


Fig. 1. Output Characteristics @ 25°C

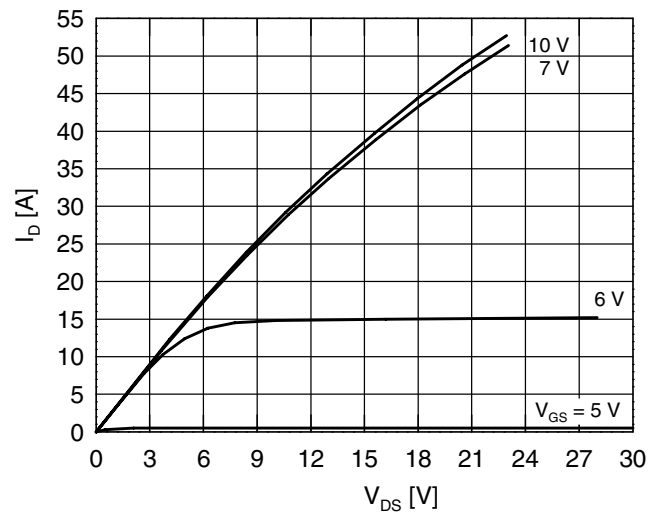


Fig. 2. Extended Output Characteristics @ 25°C

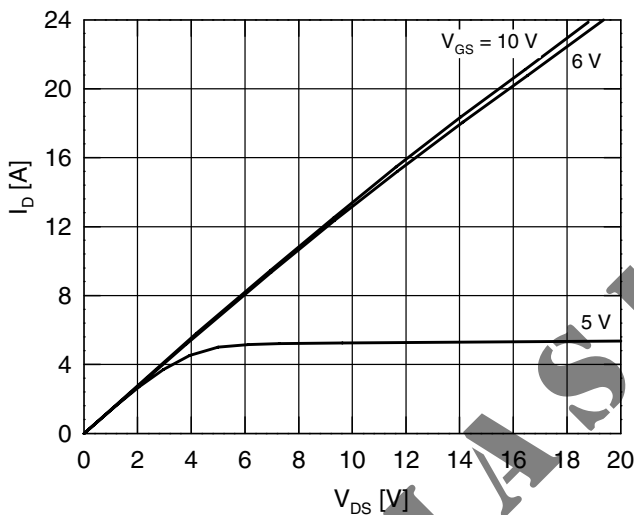


Fig. 3. Output Characteristics @ 125°C

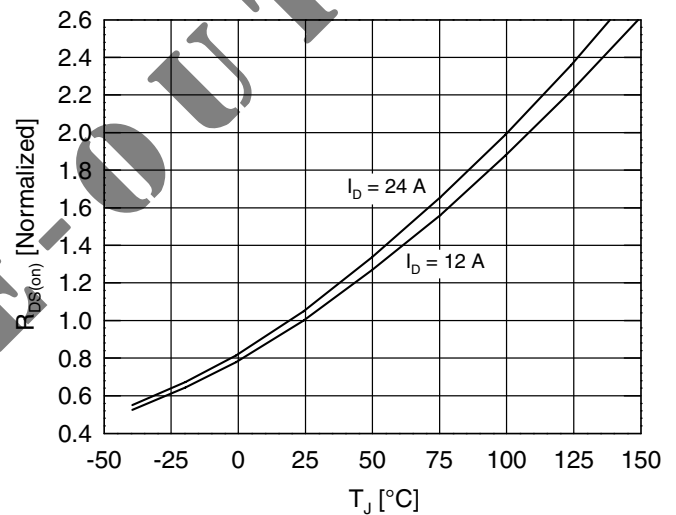


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 12$ A Value versus Junction Temperature

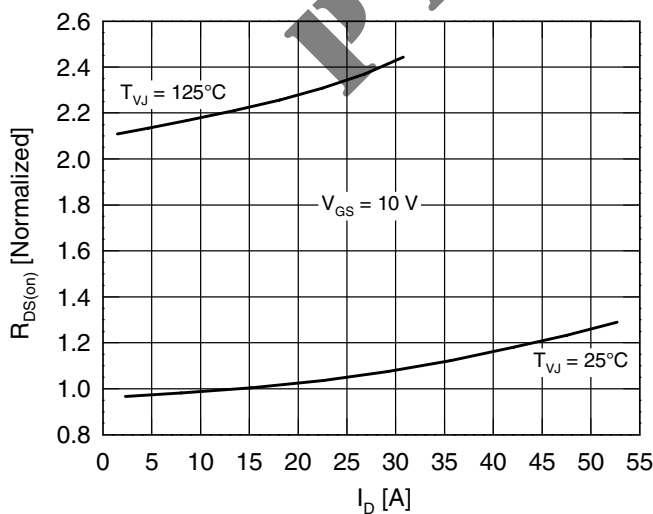


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 12$ A Value versus Drain Current

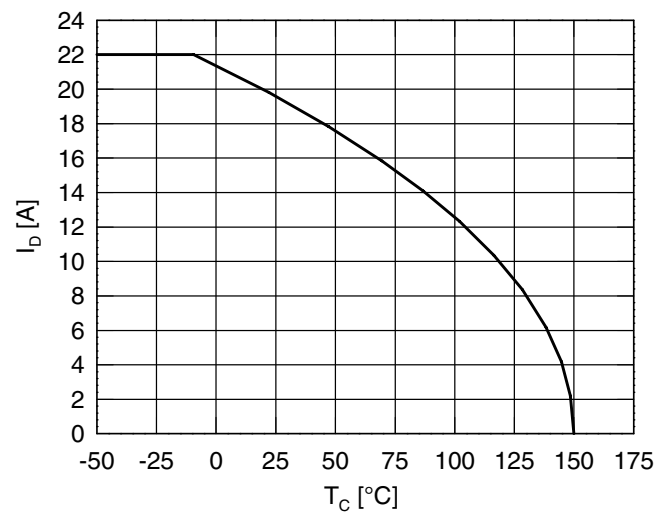


Fig. 6. Max. Drain Current vs. Case Temperature

