

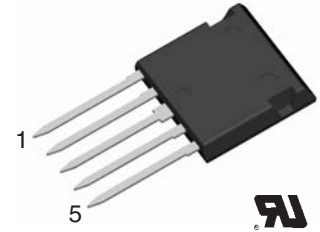
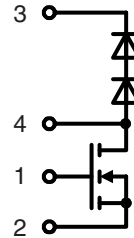
HiPerFET™ Power MOSFETs

-Boost Chopper Topology-
in ISOPLUS i4-PAC™

$$I_{D25} = 38 \text{ A}$$

$$V_{DSS} = 600 \text{ V}$$

$$R_{DSon} = 60 \text{ m}\Omega$$



MOSFET		
Symbol	Conditions	Maximum Ratings
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C}$ to 150°C	600 V
V_{GS}		± 20 V
I_{D25}	$T_C = 25^{\circ}\text{C}$	38 A
I_{D90}	$T_C = 90^{\circ}\text{C}$	25 A

Features

- fast CoolMOS power MOSFET - 3rd generation
 - high blocking voltage
 - low on resistance
 - low thermal resistance due to reduced chip thickness
- HiPerDyn™ FRED
 - consisting of series connected diodes
 - enhanced dynamic behaviour for high frequency operation
- 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

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
R_{DSon}	$V_{GS} = 10 \text{ V}; I_D = 20 \text{ A}$		60	70 mΩ
V_{GSth}	$V_{DS} = 20 \text{ V}; I_D = 2.7 \text{ mA}$	2.1		3.9 V
I_{DSS}	$V_{DS} = V_{DSS}; V_{GS} = 0 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		250	25 μA μA
I_{GSS}	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			200 nA
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10 \text{ V}; V_{DS} = 350 \text{ V}; I_D = 47 \text{ A}$		250	nC
			25	nC
			120	nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10 \text{ V}; V_{DS} = 380 \text{ V};$ $I_D = 47 \text{ A}; R_G = 1.8 \Omega$		20	ns
			30	ns
			110	ns
			10	ns
V_F	(reverse conduction) $I_F = 20 \text{ A}; V_{GS} = 0 \text{ V}$		0.9	V
R_{thJC} R_{thJS}			tbd	0.45 K/W K/W

Applications

- chopper for power factor correction
- supply of high frequency transformer
 - switched mode power supplies
 - welding converters

Free Wheeling Diode (data for series connection)

Symbol	Conditions	Maximum Ratings	
V_{RRM}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	600	V
I_{F25}	$T_C = 25^{\circ}\text{C}$	80	A
I_{F90}	$T_C = 90^{\circ}\text{C}$	45	A

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
V_F	$I_F = 20\text{ A}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$	2.6	2.9	V
I_R	$V_R = V_{RRM}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$	0.25	0.25	mA
I_{RM} t_{rr}	} $I_F = 30\text{ A}; di_F/dt = -500\text{ A}/\mu\text{s}; T_{VJ} = 125^{\circ}\text{C}$ $V_R = 300\text{ V}$	9		A
		40		ns
R_{thJC} R_{thJS}	(per diode)	tbd	0.65	K/W

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-55...+150	$^{\circ}\text{C}$
T_{stg}		-55...+125	$^{\circ}\text{C}$
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")
