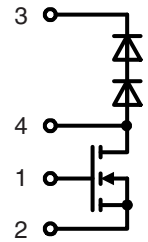
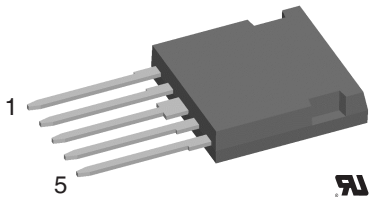
HiPerFET™
CoolMOS™ [1] Power MOSFETs
-Boost Chopper Topology-
in ISOPLUS i4-PAC™

I_{D25} = 38 A
V_{DSS} = 600 V
R_{DSon} = 60 mΩ





MOSFET

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

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

Features

- fast CoolMOS™ [1] power MOSFET 3rd generation
  - high blocking voltage
  - low on resistance
  - low thermals 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

Applications

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

[1] CoolMOS™ is a trademark of Infineon Technologies AG.

Free Wheeling Diode (data for series connection)

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

Symbol	Conditions	Characteristic Values min.	typ.	max.	
V_F	I_F = 20 A; T_{VJ} = 25°C		2.6	2.9	V
	T_{VJ} = 125°C		2.0		V
I_R	$V_R = V_{RRM}$; T_{VJ} = 25°C			0.25	mA
	T_{VJ} = 125°C		0.25		mA
I_{RM}	I_F = 30 A; di_F/dt = -500 A/µs; T_{VJ} = 125°C		9		A
t_{rr}	V_R = 300 V		40		ns
R_{thJC}	(per diode)			0.65	K/W
R_{thJS}			tbd		K/W

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")