

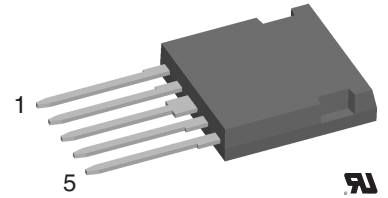
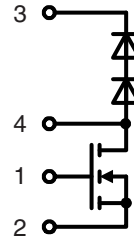
# HiPerFET™ CoolMOS™ 1) Power MOSFETs

-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 $150^{\circ}\text{C}$	600 V
$V_{GS}$		$\pm 20$ V
$I_{D25}$	$T_C = 25^{\circ}\text{C}$	38 A
$I_{D90}$	$T_C = 90^{\circ}\text{C}$	25 A

## Features

- fast CoolMOS™ 1) power MOSFET 3<sup>rd</sup> 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 $\mu\text{A}$ 25 $\mu\text{A}$
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			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

<sup>1)</sup> CoolMOS™ is a trademark of Infineon Technologies AG.

**Free Wheeling Diode (data for series connection)**

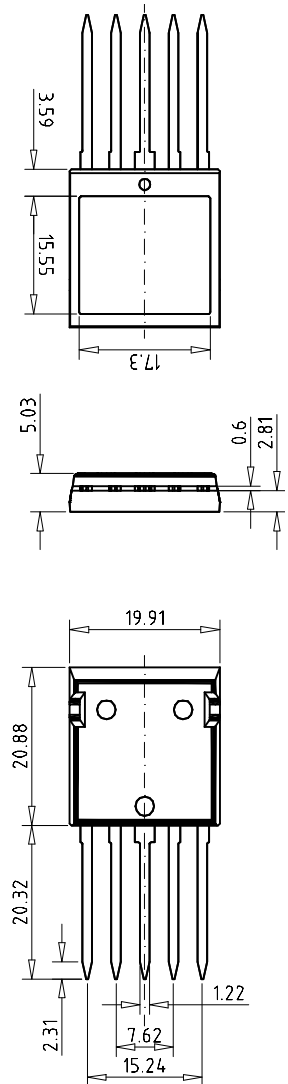
Symbol	Conditions	Maximum Ratings	
$V_{RRM}$	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	600	V
$I_{F25}$	$T_C = 25^{\circ}\text{C}$	80	A
$I_{F90}$	$T_C = 90^{\circ}\text{C}$	45	A

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)	tdb		0.65 K/W 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
<b>Weight</b>			9	g

**Dimensions in mm (1 mm = 0.0394")**




---

Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).