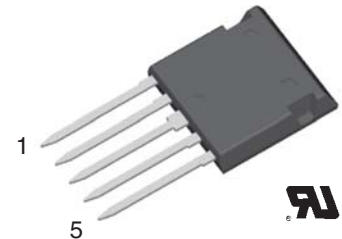
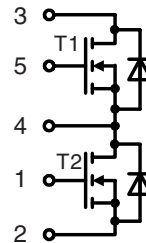


# Trench Power MOSFET

Phaseleg Topology  
in ISOPLUS i4-PAC™

$I_{D25} = 300 \text{ A}$   
 $V_{DSS} = 55 \text{ V}$   
 $R_{DSon\text{typ.}} = 2.7 \text{ m}\Omega$

Preliminary data



## MOSFET T1/T2

Symbol	Conditions	Maximum Ratings	
$V_{DSS}$	$T_{VJ} = 25^\circ\text{C}$ to $T_{VJmax}$	55	V
$V_{GS}$		$\pm 20$	V
$I_{D25}$	$T_C = 25^\circ\text{C}$	300	A
$I_{D90}$	$T_C = 90^\circ\text{C}$	220	A
$I_{F25}$	(body diode) $T_C = 25^\circ\text{C}$	240	A
$I_{F90}$	(body diode) $T_C = 90^\circ\text{C}$	150	A

### Features

- trench MOSFET
  - very low on state resistance  $R_{DSon}$
  - fast switching
- 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.
$R_{DSon}$	$V_{GS} = 10 \text{ V}; I_D = 150 \text{ A}$		2.7	3.6 m $\Omega$
$V_{GSth}$	$V_{DS} = 20 \text{ V}; I_D = 2 \text{ mA}$	2		4 V
$I_{DSS}$	$V_{DS} = 55 \text{ V}; V_{GS} = 0 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		0.2	2 $\mu\text{A}$ mA
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			200 nA
$Q_g$ $Q_{gs}$ $Q_{gd}$	$V_{GS} = 10 \text{ V}; V_{DS} = 44 \text{ V}; I_D = 50 \text{ A}$		172	nC
			36	nC
			50	nC
$t_{d(on)}$ $t_r$ $t_{d(off)}$ $t_f$	$V_{GS} = 10 \text{ V}; V_{DS} = 30 \text{ V}$ $I_D = 50 \text{ A}; R_G = 4.7 \Omega$		25	ns
			50	ns
			70	ns
			40	ns
$V_F$	(body diode) $I_F = 150 \text{ A}; V_{GS} = 0 \text{ V}$		1.1	1.5 V
$t_{rr}$	(body diode) $I_F = 40 \text{ A}; -di/dt = 200 \text{ A}/\mu\text{s}; V_{DS} = 30 \text{ V}$		100	ns
$R_{thJC}$ $R_{thJH}$	with heat transfer paste		1	0.5 K/W K/W

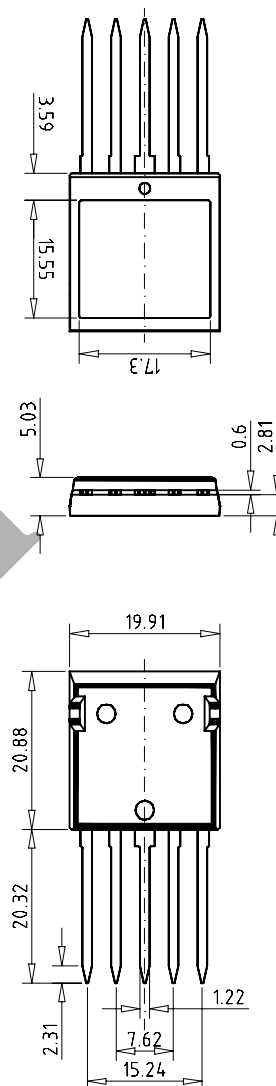
### Applications

- automotive
  - AC drives - starter generator for 12/14 V etc.
  - choppers - replacing series resistors for DC drives, heating etc.
  - DC-DC converters - between 12V and 42V system etc.
  - electronic switches - replacing relays and fuses
- power supplies
  - DC-DC converters
  - solar inverters
  - converters for fuel cells
- battery supplied systems
  - choppers or inverters for drives in hand held tools
  - battery chargers

**Component**

Symbol	Conditions	Maximum Ratings	
$I_{RMS}$	per pin	75	A
$T_{VJ}$		-55...+175	°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.
$R_{pin-chip}$			0.5	mΩ
$C_p$	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")**


PHASE-OUT