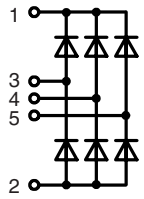
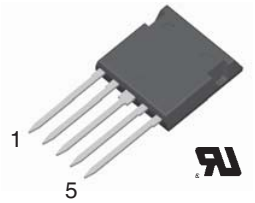
Three Phase Rectifier Bridge

in ISOPLUS i4-PAC™

V_{RRM} = 1600 V
$I_{D(AV)M}$ = 50 A
I_{FSM} = 200 A





Rectifier Bridge

Symbol	Conditions	Maximum Ratings	
V_{RRM}		1600	V
I_{FAV}	T_C = 90°C; sine 180° (per diode)	20	A
$I_{D(AV)M}$	T_C = 90°C	50	A
I_{FSM}	T_{VJ} = 25°C; t = 10 ms; sine 50 Hz	200	A
P_{tot}	T_C = 25°C (per diode)	60	W

Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified) min.	typ.	max.	
V_F	I_F = 20 A; T_{VJ} = 25°C		1.1	1.3	V
	T_{VJ} = 125°C		1.1		V
I_R	$V_R = V_{RRM}$; T_{VJ} = 25°C			10	µA
	$V_R = 0.8 \cdot V_{RRM}$; T_{VJ} = 125°C		0.2		mA
R_{thJC}	(per diode)			2.1	K/W
R_{thJH}			3.2		K/W

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-55...+150	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \le$ 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

Data according to IEC 60747 and refer to a single diode unless otherwise stated.

IXYS reserves the right to change limits, test conditions and dimensions.

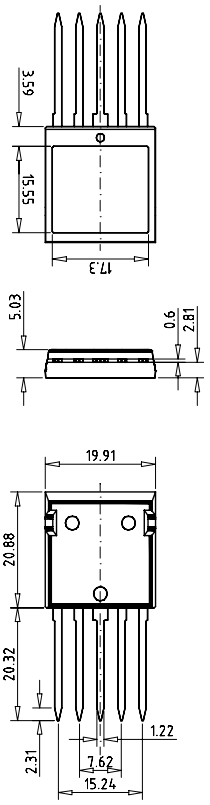
Features

- rectifier diodes for line frequency
- ISOPLUS i4-PAC™ package
  - isolated back surface
  - UL registered E 72873
  - low coupling capacity between pins and heatsink
  - enlarged creepage towards heatsink
  - application friendly pinout
  - high reliability
  - industry standard outline

Applications

- three phase mains rectifiers

Dimensions in mm (1 mm = 0.0394")



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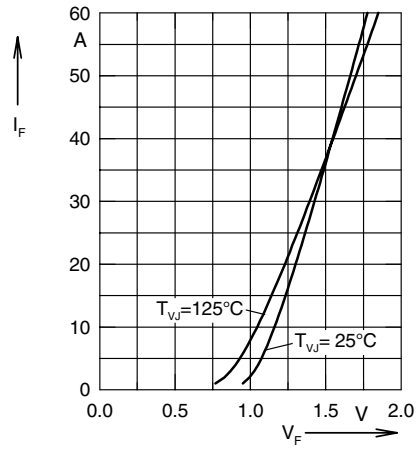

Fig. 1 Forward current vs. voltage drop per leg

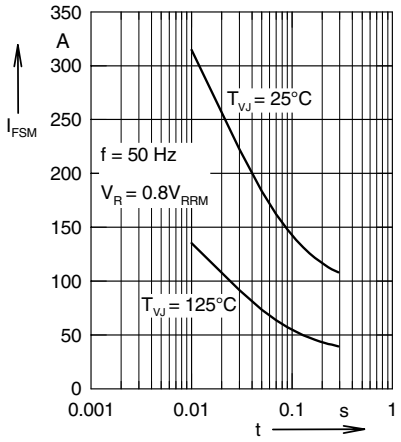

Fig. 2 Surge overload current

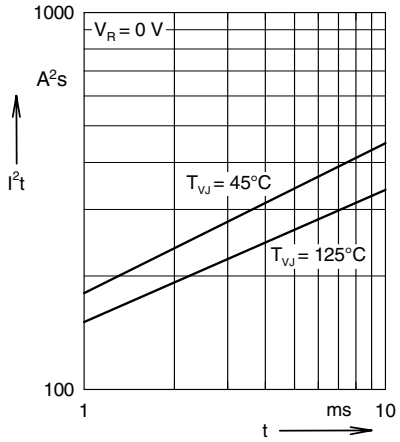

Fig. 3 t versus time per diode

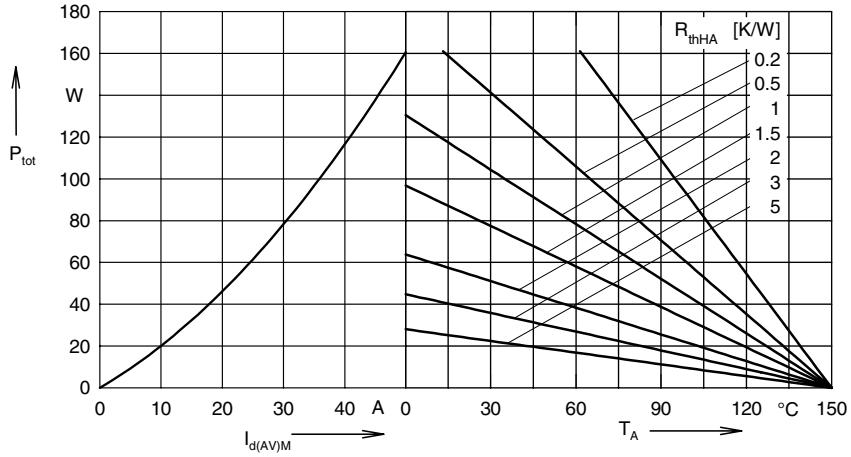

Fig. 4 Power dissipation versus direct output current and ambient temperature; sinusoidal 120°

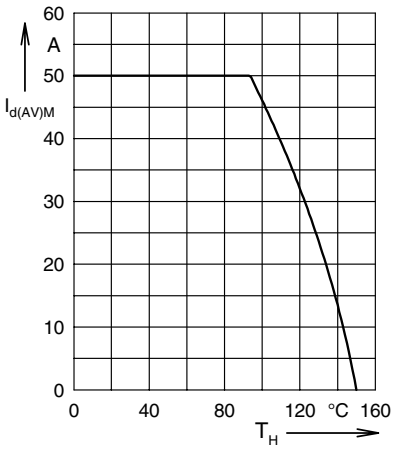

Fig. 5 Max. forward current vs. case temperature $I_{d(AVM)} = f(T_{case})$

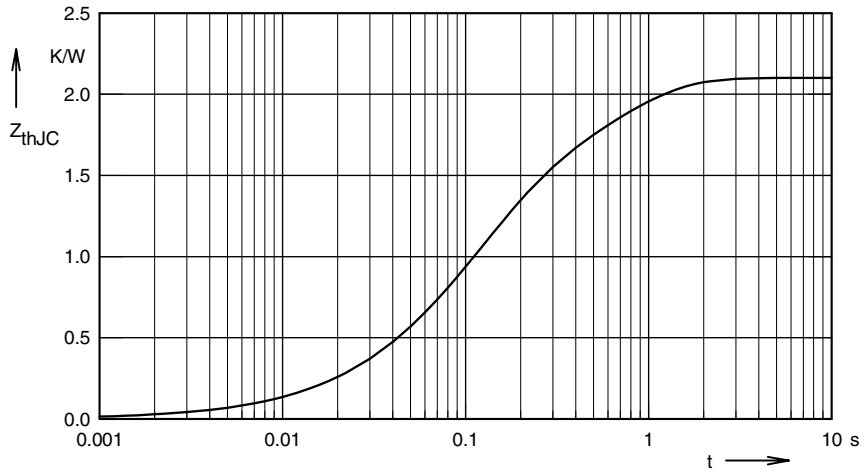

Fig. 6 Transient thermal impedance junction to case Z_{thjc}

Constants for Z_{thJc} calculation

i	R_{thi} (K/W)	t_i (s)
1	1.159	0.1015
2	0.1286	0.1026
3	0.2651	0.4919
4	0.5473	0.62