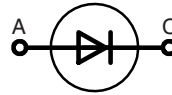


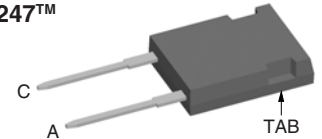
# Rectifier Diode

**$V_{RRM} = 1600\text{ V}$**   
 **$I_{F(AV)M} = 48\text{ A}$**

$V_{RSM}$ V	$V_{RRM}$ V	Type
1700	1600	DSI 45-16AR



**ISOPLUS247™**  
**E72873**



A = Anode, C = Cathode

Symbol	Conditions	Maximum Ratings	
$I_{F(AV)M}$	$T_C = 105^\circ\text{C}; 180^\circ$ sine	48	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}; V_R = 0\text{ V};$ $t = 10\text{ ms (50 Hz), sine}$	475	A
	$t = 8.3\text{ ms (60 Hz), sine}$	520	A
$I^2t$	$T_{VJ} = 150^\circ\text{C}; V_R = 0\text{ V};$ $t = 10\text{ ms (50 Hz), sine}$	380	A
	$t = 8.3\text{ ms (60 Hz), sine}$	420	A
$T_{VJ}$	$T_{VJ} = 45^\circ\text{C}; V_R = 0\text{ V};$ $t = 10\text{ ms (50 Hz), sine}$	1120	A <sup>2</sup> s
	$t = 8.3\text{ ms (60 Hz), sine}$	1120	A <sup>2</sup> s
$T_{VJ}$	$T_{VJ} = 150^\circ\text{C}; V_R = 0\text{ V};$ $t = 10\text{ ms (50 Hz), sine}$	720	A <sup>2</sup> s
	$t = 8.3\text{ ms (60 Hz), sine}$	720	A <sup>2</sup> s
$T_{VJM}$		-40...+150	°C
$T_{stg}$		150	°C
$T_{stg}$		-40...+150	°C
$V_{ISOL}$	50/60 Hz, RMS, $t = 1$ minute, leads-to-tab	2500	V~
Weight	typical	6	g

### Features

- International standard package
- Planar glassivated chips
- Isolated and UL registered
- Epoxy meets UL 94V-0

### Applications

- Supplies for DC power equipment
- DC supply for PWM inverter
- Field supply for DC motors
- Battery DC power supplies

### Advantages

- Space and weight savings
- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits

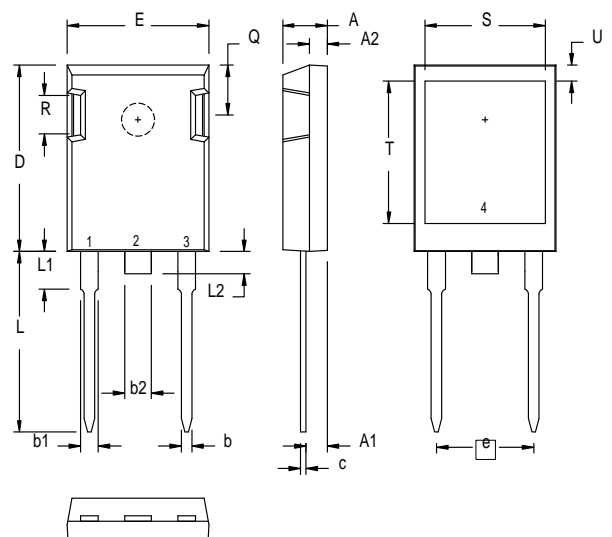
Symbol	Conditions	Characteristic Values	
$I_R$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}$	≤ 3	mA
$V_F$	$I_F = 40\text{ A}; T_{VJ} = 25^\circ\text{C}$	≤ 1.18	V
$V_{T0}$	For power-loss calculations only	0.8	V
$r_T$	$T_{VJ} = T_{VJM}$	8	mΩ
$R_{thJC}$	DC current	0.55	K/W
$R_{thCH}$	typical	0.2	K/W

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

- NOTE 1. This drawing will meet all dimensions requirement of JEDEC outline 8-247A except screw hole.  
 2. Lead terminals are Pb-free solder plated.  
 3. Bottom heatsink (4) is pre-Ni plated and electrically isolated 2,500V from pin 1, 2, and 3

Data according to IEC 60747

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.190	.205	4.83	5.21
A1	.090	.100	2.29	2.54
A2	.075	.085	1.91	2.16
b	.045	.055	1.14	1.40
b1	.075	.084	1.91	2.13
b2	.115	.123	2.92	3.12
c	.024	.031	0.61	0.80
D	.819	.840	20.80	21.34
E	.620	.635	15.75	16.13
e	.430 BSC		10.92 BSC	
L	.780	.800	19.81	20.32
L1	.150	.170	3.81	4.32
L2	0	.100	0	2.54
Q	.220	.244	5.59	6.20
R	.170	.190	4.32	4.83
S	.520	.540	13.21	13.72
T	.620	.640	15.75	16.26
U	.065	.080	1.65	2.03



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

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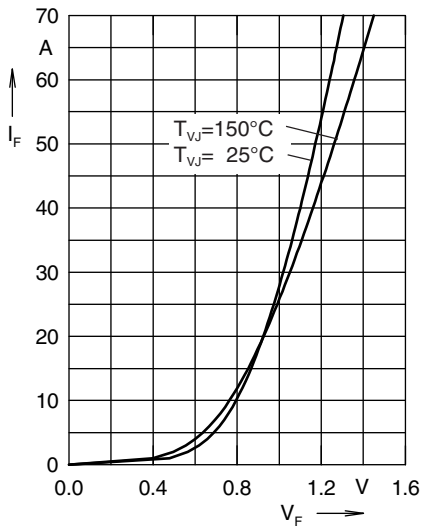


Fig. 1 Forward current versus voltage drop per diode

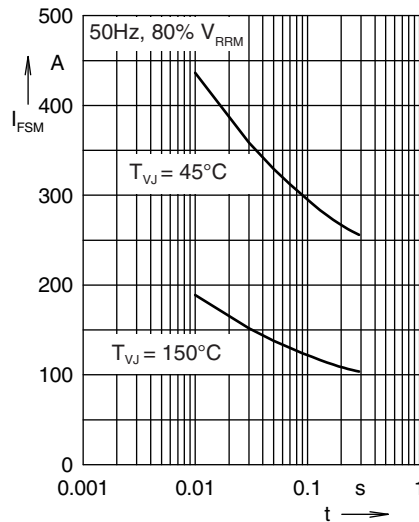


Fig. 2 Surge overload current

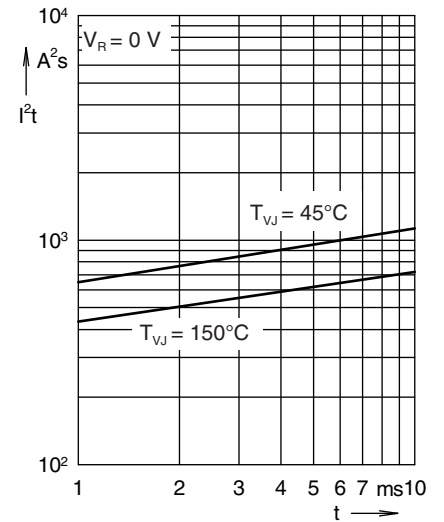


Fig. 3  $I^2t$  versus time per diode

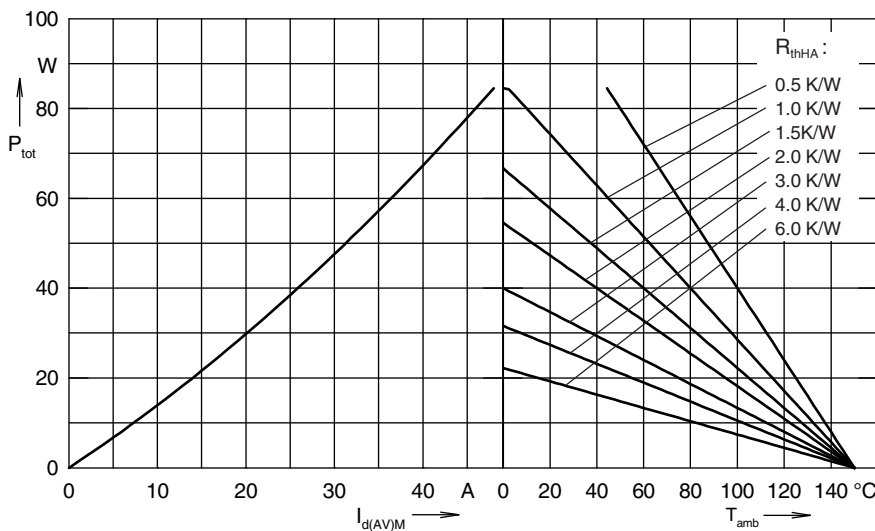


Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

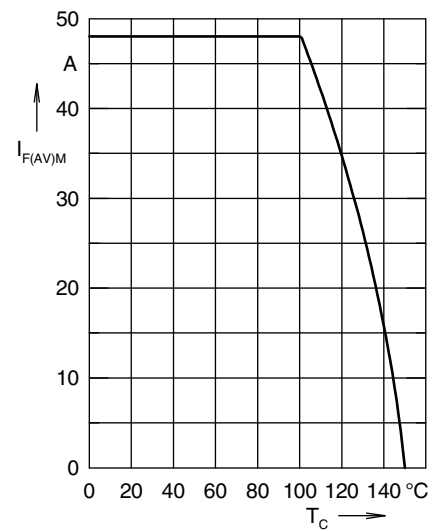


Fig. 5 Max. forward current versus case temperature

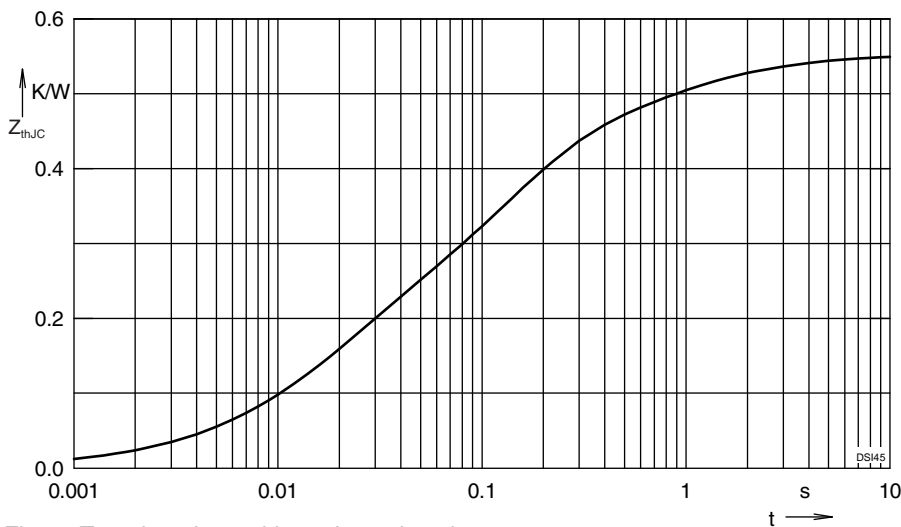


Fig. 6 Transient thermal impedance junction to case

Constants for  $Z_{thjC}$  calculation:

i	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.1633	0.016
2	0.2517	0.118
3	0.0933	0.588
4	0.04167	2.6