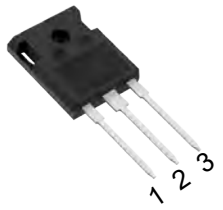
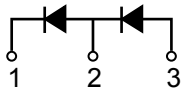
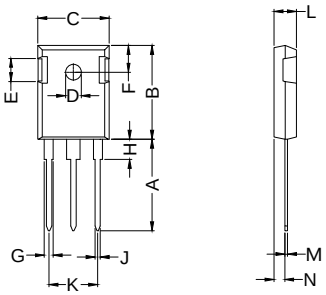
SDD45N12

Discrete Diodes





Dimensions TO-247AD



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.620	0.640
ØD	3.15	3.65	0.124	0.144
E	4.32	5.49	0.170	0.216
F	5.40	6.30	0.213	0.248
G	1.65	2.18	0.065	0.086
H	3.80	4.50	0.150	0.177
J	1.00	1.40	0.039	0.055
K	10.80	11.10	0.425	0.437
L	4.70	5.30	0.185	0.209
M	0.40	0.80	0.016	0.031
N	1.50	2.49	0.059	0.098

	V_{RSM} V	V_{RRM} V
SDD45N02	300	200
SDD45N04	500	400
SDD45N08	900	800
SDD45N10	1100	1000
SDD45N12	1300	1200
SDD45N16	1700	1600
SDD45N18	1900	1800
SDD45N20	2100	2000

Symbol	Test Conditions		Maximum Ratings	Unit
$I_{F(AV)M}$	T_C=130°C; 180°sine, per chip		45	A
I_{FSM}	T_{VJ}=45°C; V_R =0V;	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	485 520	A
	T_{VJ}=150°C; V_R =0V;	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	415 445	
I^2t	T_{VJ}=45°C; V_R =0V;	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1160 1130	A^2s
	T_{VJ}=150°C; V_R =0V;	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	850 810	
T_{VJ} T_{VJM} T_{stg}			-40...+175 175 -55...+150	°C
M_d	Mounting torque		0.8...1.2	Nm
Weight	Typical		6	g

Symbol	Test Conditions	Characteristic Values	Unit
I_R	T_{VJ}=T_{VJM}; V_R=V_{RRM}	< 1.00	mA
V_F	I_F=45A; T_{VJ}=25°C	< 1.25	V
V_{FO}	For power-loss calculations only	0.80	V
r_F	T_{VJ}=T_{VJM}	9.0	mΩ
R_{thJC} R_{thCH}	DC current typical	0.55 0.20	K/W

- International Standard Package TO-247AD
- RoHS compliant
- Non-Isolated package
- Epoxy meets UL 94V-0

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Discrete Diodes

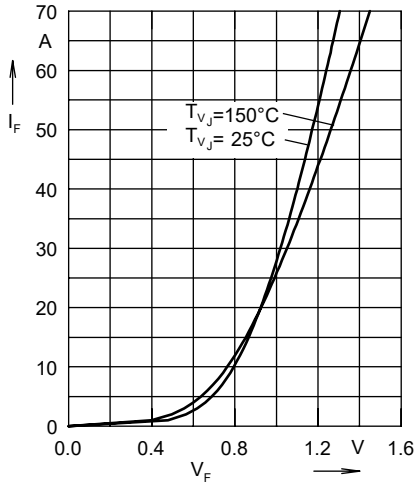

Fig. 1 Forward current versus voltage drop per diode

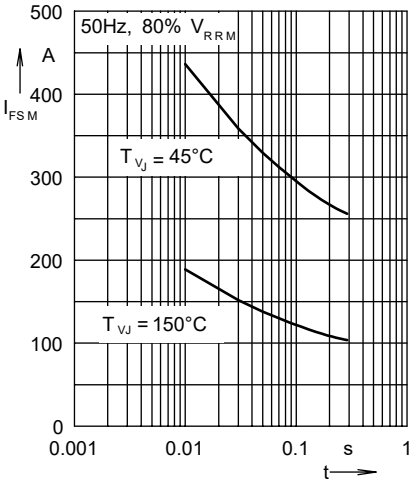

Fig. 2 Surge overload current

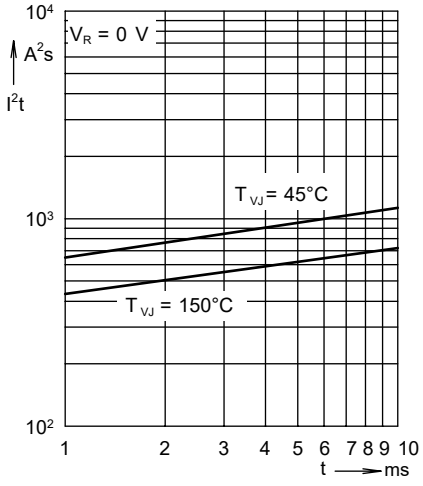

Fig. 3 I^2t versus time per diode

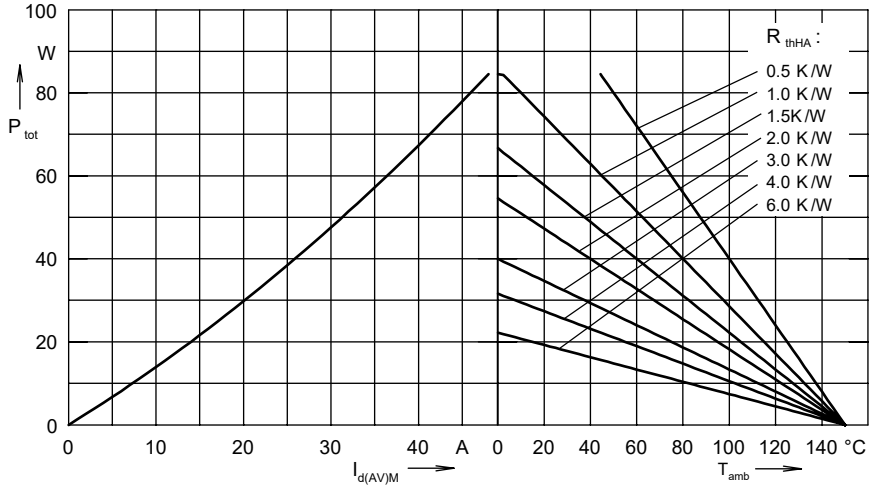

Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

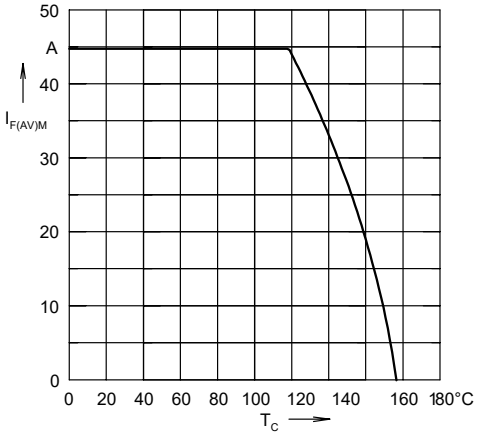

Fig. 5 Max. forward current versus case temperature

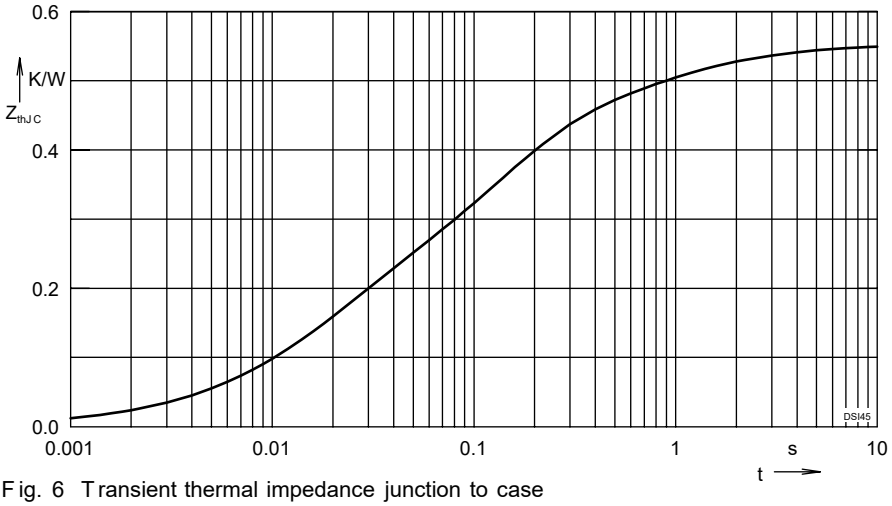

Fig. 6 Transient thermal impedance junction to case

Constants for Z_{thJC} calculation:

i	(R_{thi}K/W)	t_i (s)
1	0.033	0.0006
2	0.095	0.0039
3	0.164	0.0330
4	0.258	0.272

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