SDD10

Discrete Diodes

Dimensions TO-220AB
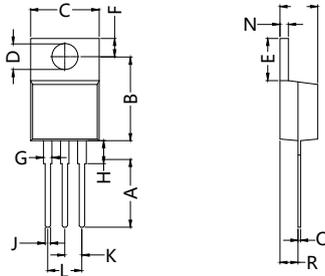
Dim.	Millimeter	
	Min.	Max.
A	12.70	13.97
B	14.73	16.00
C	9.91	10.66
ØD	3.54	4.08
E	5.85	6.85
F	2.54	3.18
G	1.15	1.65
H	2.79	5.84
J	0.64	1.01
K	2.45BSC	
L	5.05BSC	
M	4.32	4.82
N	1.14	1.39
Q	0.35	0.56
R	2.29	2.79

	V_{RSM} V	V_{RRM} V
SDD10N01	200	100
SDD10N02	300	200
SDD10N04	500	400
SDD10N08	900	800
SDD10N10	1100	1000
SDD10N12	1300	1200
SDD10N16	1700	1600

Symbol	Test Conditions		Maximum Ratings	Unit
$I_{F(AV)M}$	T_C=100 °C; 180° sine		10	A
I_{FSM}	T_{VJ}=45°C;	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	100 110	A
	T_{VJ}=15°C;	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	90 100	
I^2t	T_{VJ}=45°C;	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	50 50	A^2s
	T_{VJ}=150°C;	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	41 42	
T_{VJ} T_{VJM} T_{stg}			-40...+180 180 -40...+150	°C
M_d	Mounting torque		0.4...0.6	Nm
Weight	Typical		2	g

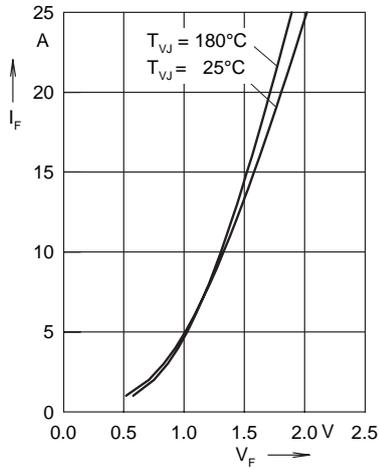| Symbol	Test Conditions	Characteristic Values	Unit
I_R	T_{VJ}=T_{VJM}; V_R=V_{RRM}	≤ 0.5	mA
V_F	I_F =45A; T_{VJ} =25 °C	≤ 1.15	V
V_{TO}	For power-loss calculations only	0.8	V
r_T	T_{VJ}=T_{VJM}	40	mΩ
R_{thJC}	DC current	3.5	K/W

Sirectifier®

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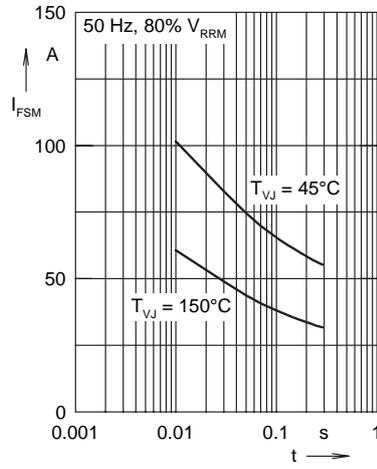Fig. 1 Forward current versus voltage drop per diode
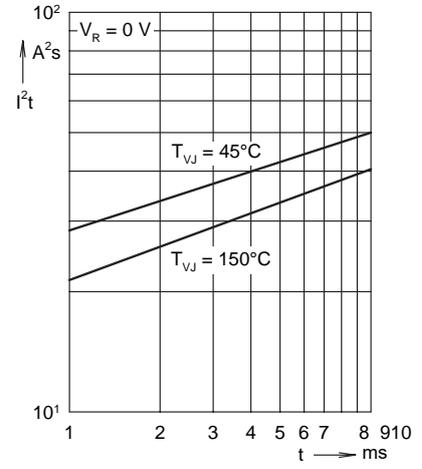
Fig. 2 Surge overload current

Fig. 3 I²t versus time per diode

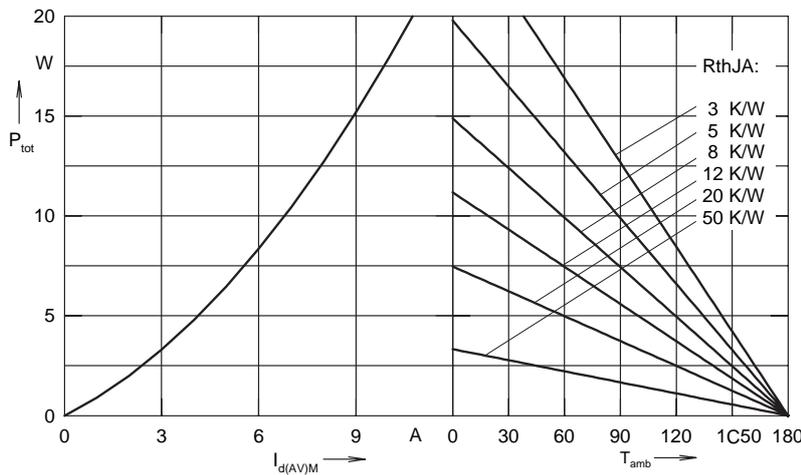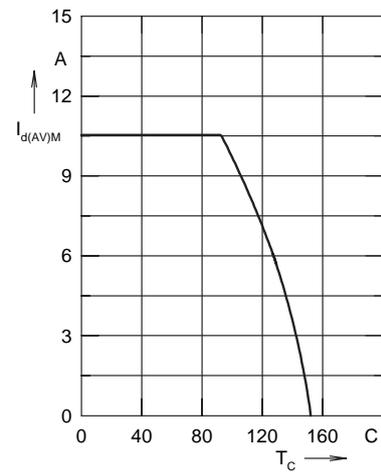Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

RthJA:
3 K/W
5 K/W
8 K/W
12 K/W
20 K/W
50 K/W

Fig. 5 Max. forward current versus case temperature
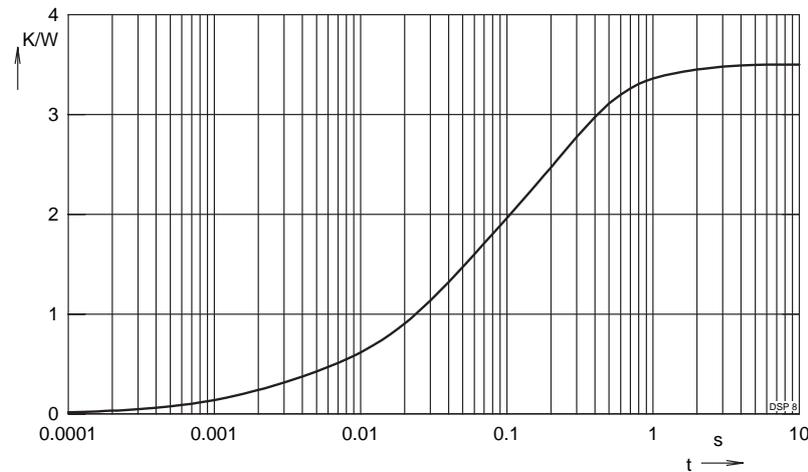
Fig. 6 Transient thermal impedance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.252	0.002
2	1.045	0.032
3	1.932	0.227
4	0.271	1.2

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