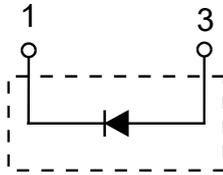
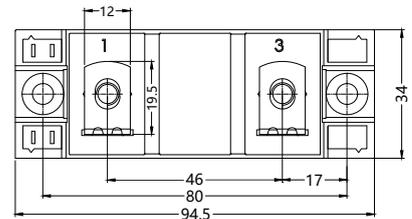
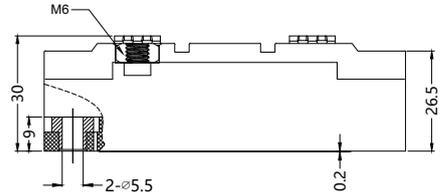


SDF550-02

Ultra Fast Recovery Epitaxial Diodes



Dimensions in mm



	V _{RSM} V	V _{RRM} V
SDF550-02	200	200



Symbol	Test Conditions	Maximum Ratings	Unit	
I _{FRMS}	T _C =75°C	822	A	
I _{FAVM}	T _C =75°C; rectangular, d=0.5	582		
I _{FRM}	t _p <10us; rep. rating, pulse width limited by T _{VJM}	2280		
I _{FSM}	T _{VJ} =45°C	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	4800 5280	A
	T _{VJ} =150°C	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	4320 4750	
I ² t	T _{VJ} =45°C	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	115200 117100	A ² s
	T _{VJ} =150°C	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	93300 94800	
T _{VJ} T _{stg} T _{Smax}		-40...+150 -40...+125 110	°C	
P _{tot}	T _C =25°C	1750	W	
V _{ISOL}	50/60Hz, RMS t=1min I _{ISOL} ≤1mA t=1s	3000 3600	V~	
M _d	Mounting torque (M6) Terminal connection torque (M6)	2.25-2.75/20-25 4.50-5.50/40-48	Nm/lb.in.	
d _s	Creeping distance on surface	12.7	mm	
d _A	Strike distance through air	9.6	mm	
a	Maximum allowable acceleration	50	m/s ²	
Weight		150	g	

Sirectifier®

SDF550-02

Ultra Fast Recovery Epitaxial Diodes

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I _R	T _{VJ} =25°C; V _R =V _{RRM}		5	mA
	T _{VJ} =25°C; V _R =0.8·V _{RRM}		4	
	T _{VJ} =125°C; V _R =0.8·V _{RRM}		160	
V _F	I _F =300A; T _{VJ} =125°C		0.84	V
	T _{VJ} =25°C		1.10	
	I _F =520A; T _{VJ} =125°C		1.08	
	T _{VJ} =25°C		1.25	
V _{TO}	For power-loss calculations only		0.52	V
r _T			1.06	mΩ
R _{thJH}	DC current		0.114	K/W
R _{thJC}	DC current		0.071	
t _{rr}	I _F =500A; T _{VJ} =100°C	150	200	ns
I _{RM}	V _R =100V; T _{VJ} =25°C		9	A
	-di/dt=200A/us; T _{VJ} =100°C		15	A

FEATURES

- * International standard package with DCB ceramic base plate
- * Planar passivated chips
- * Short recovery time
- * Low switching losses
- * Soft recovery behaviour
- * Isolation voltage 3600 V~

APPLICATIONS

- * Antiparallel diode for high frequency switching devices
- * Free wheeling diode in converters and motor control circuits
- * Inductive heating and melting
- * Uninterruptible power supplies (UPS)
- * Ultrasonic cleaners and welders

ADVANTAGES

- * High reliability circuit operation
- * Low voltage peaks for reduced protection circuits
- * Low noise switching
- * Low losses

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SDF550-02

Ultra Fast Recovery Epitaxial Diodes

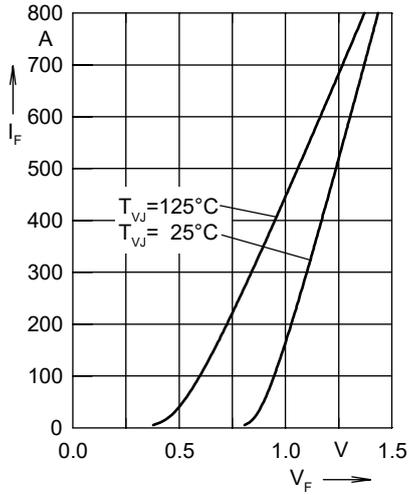


Fig. 1 Forward current I_F versus max. voltage drop V_F per leg

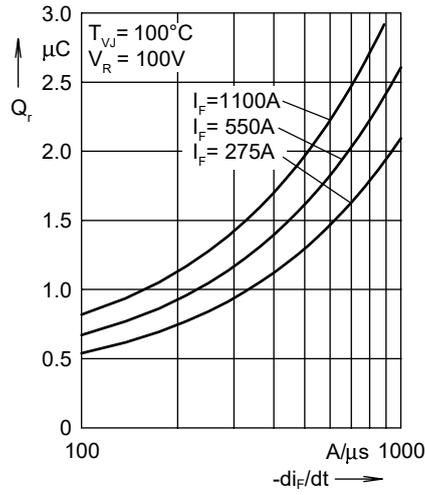


Fig. 2 Typ. reverse recovery charge Q_r versus $-di_F/dt$

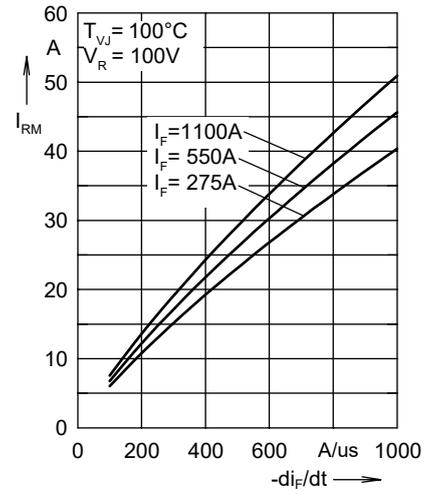


Fig. 3 Typ. peak reverse current I_{RM} versus $-di_F/dt$

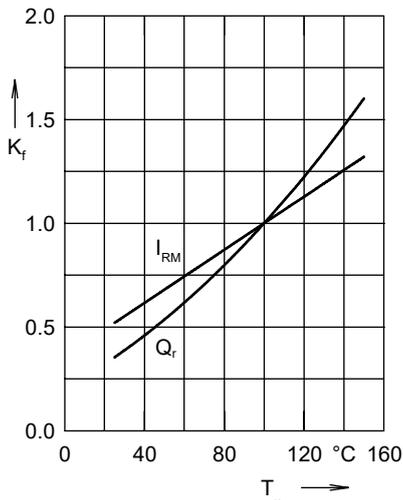


Fig. 4 Dynamic parameters Q_r , I_{RM} versus junction temperature T_{VJ}

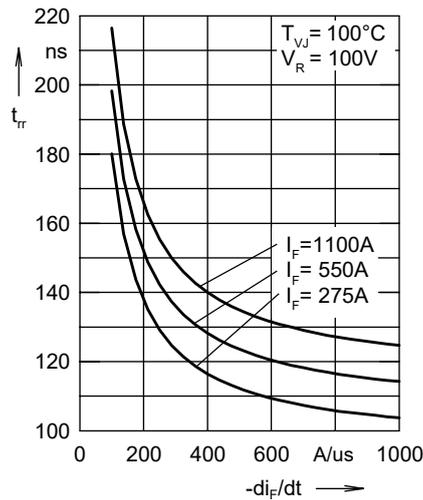


Fig. 5 Typ. recovery time t_{tr} versus $-di_F/dt$

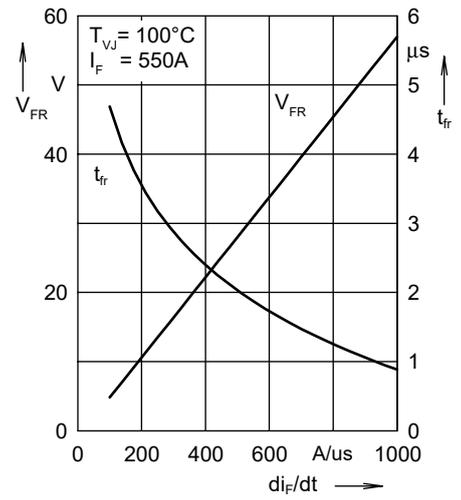


Fig. 6 Typ. peak forward voltage V_{FR} and t_{tr} versus di_F/dt

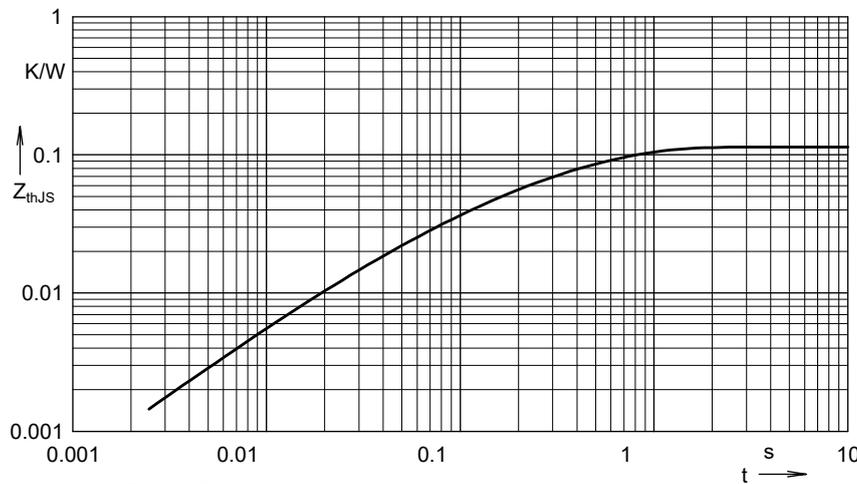


Fig. 7 Transient thermal impedance junction to heatsink

Constants for Z_{thJS} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.001	0.08
2	0.004	0.024
3	0.027	0.112
4	0.082	0.464