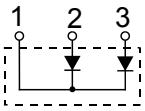
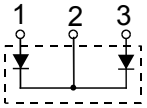
SDKF2x75-12B SDEF2x75-12B SDAF2x75-12B

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules



SDKF2X75-12B1
Side Common Cathode



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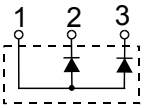
Center Common Cathode



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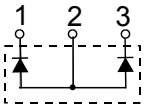
Side Common Anode



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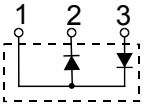

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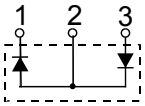
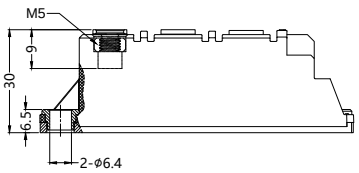
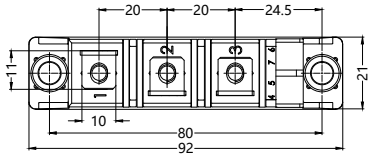
Side Common



SDEF2X75-12B2
Center Common

Dimensions in mm (1mm=0.0394")





	VRSM V	VRRM V
SDKF2x75-12B1	1200	1200
SDKF2x75-12B2	1200	1200

	VRSM V	VRRM V
SDAF2x75-12B1	1200	1200
SDAF2x75-12B2	1200	1200

	VRSM V	VRRM V
SDEF2x75-12B1	1200	1200
SDEF2x75-12B2	1200	1200

Symbol	Test Conditions		Maximum Ratings	Unit
I_{FRMS} I_{FAVM} I_{FRM}	T_C=75°C T_C=75°C; rectangular, d=0.5 t_P<10us; rep. rating, pulse width limited by T_{VJM}		107 2 x 75 TBD	A
I_{FSM}	T_{VJ}=45°C	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1200 1300	A
	T_{VJ}=150°C	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1080 1170	
I^2t	T_{VJ}=45°C	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	7200 7100	A^2s
	T_{VJ}=150°C	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	5800 5700	
T_{VJ} T_{stg} T_{Hmax}			-40...+150 -40...+125 110	°C
P_{tot}	T_{case}=25°C		280	W
V_{ISOL}	50/60Hz, RMS I_{ISOL}≤1mA	t=1min t=1s	3000 3600	V~
M_d	Mounting torque (M5) Terminal connection torque (M5)		2.50-4/22-35 2.50-4/22-35	Nm/lb.in.
d_S d_A a	Creeping distance on surface Strike distance through air Maximum allowable acceleration		12.7 9.6 50	mm mm m/s^2
Weight			108	g

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SDKF2x75-12B SDEF2x75-12B SDAF2x75-12B

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	T_{VJ}=25°C; V_R=V_{RRM} T_{VJ}=25°C; V_R=0.8·V_{RRM} T_{VJ}=125°C; V_R=0.8·V_{RRM}		2 0.5 34	mA
V_F	I_F=75A; T_{VJ}=125°C T_{VJ}=25°C I_F=225A; T_{VJ}=125°C T_{VJ}=25°C		1.85 2.17 2.58 2.64	V
V_{TO}	For power-loss calculations only		1.48	V
r_T			3.65	mq
R_{thJH} R_{thJC}	DC current DC current		0.550 0.450	K/W
t_{rr} I_{RM}	I_F=150A; T_{VJ}=100°C V_R=600V; T_{VJ}=25°C -di/dt=200A/us; T_{VJ}=100°C	250	300 22 33	ns A A

FEATURES

* International standard package
* Copper base plate
* Glass passivated chips
* Short recovery time
* Low switching losses
* Soft recovery behaviour
* UL File NO.E310749
* RoHS compliant

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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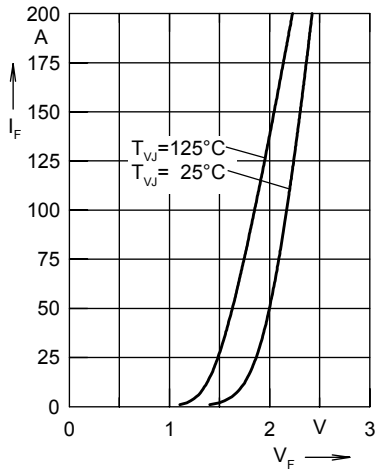

Fig. 1 Forward current I_F versus voltage drop V_F per leg

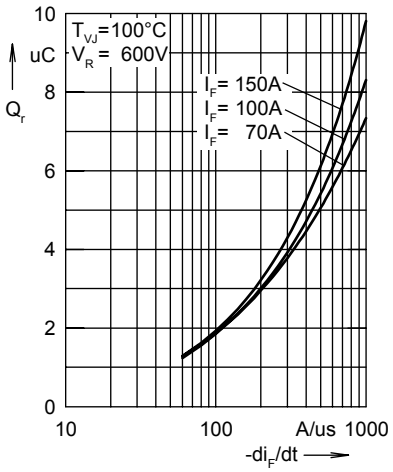

Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

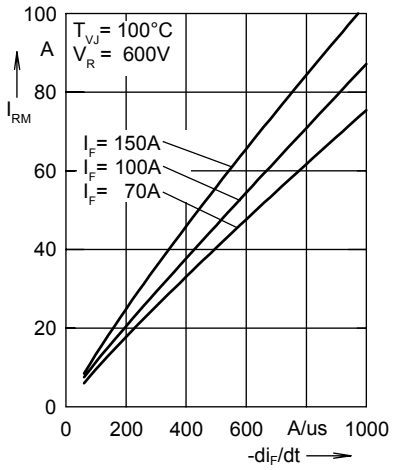

Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

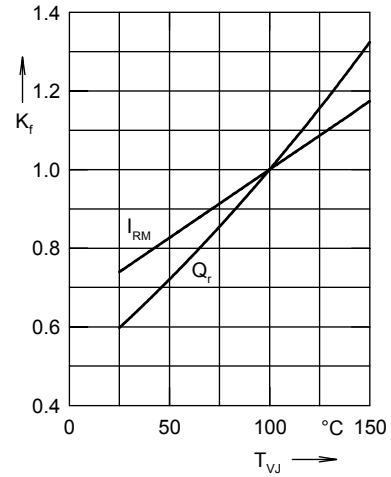

Fig. 4 Dynamic parameters Q_r, I_{RM} versus junction temperature T_{VJ}

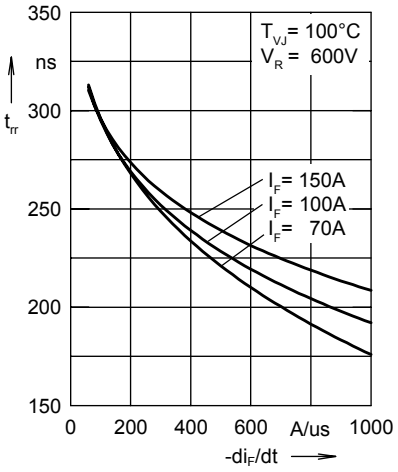

Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

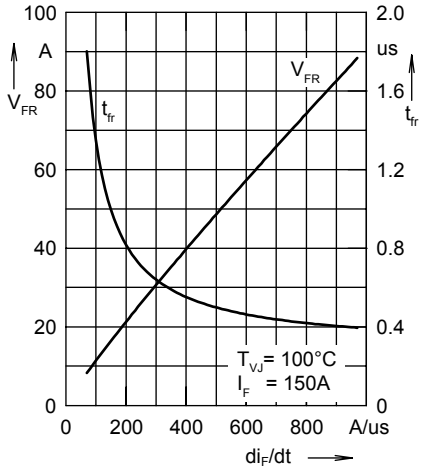

Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

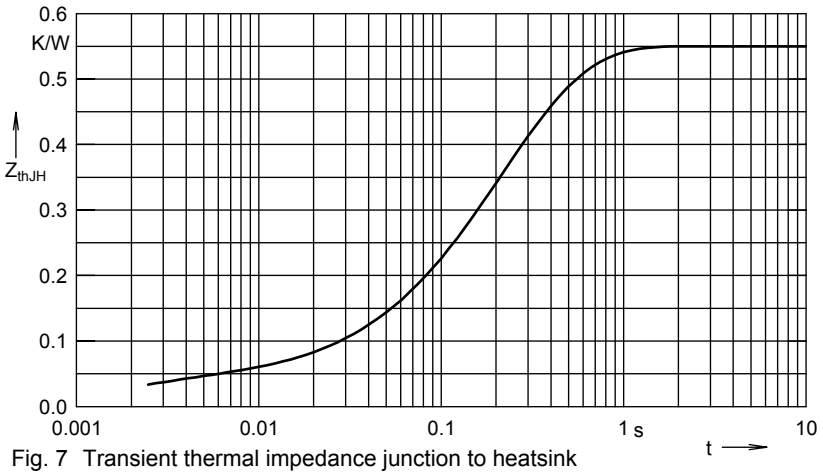

Fig. 7 Transient thermal impedance junction to heatsink

Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i(s)
1	0.037	0.002
2	0.138	0.134
3	0.093	0.25
4	0.282	0.274

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