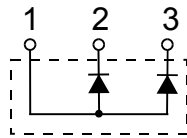
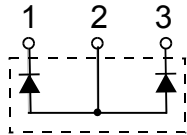


SDKF2x250-12B

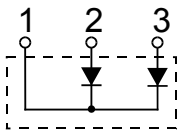
Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules



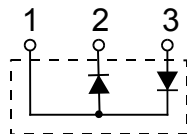
SDAF2X250-12B1
Center Common



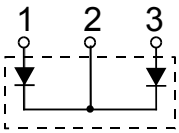
SDAF2X250-12B2
Center Common



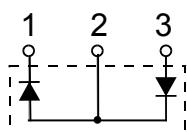
SDKF2X250-12B1
Side Common



SDEF2X250-12B1
Center Common

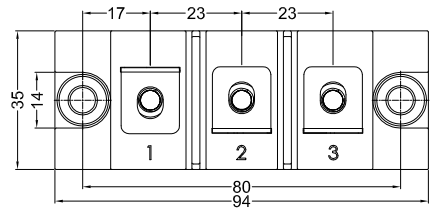
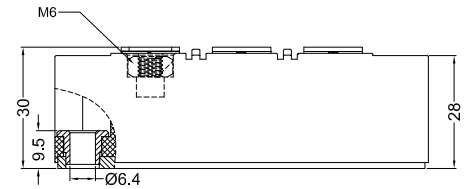


SDKF2X250-12B2
Center Common



SDEF2X250-12B2
Center Common

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions	Maximum Ratings	Unit	
I_{FRMS}	T _C =75°C	367	A	
I_{FAVM}	T _C =75°C; rectangular, d=0.5	2 x 250		
I_{FRM}	t _p <10us; rep. rating, pulse width limited by T _{VJM}	1480		
I_{FSM}	T _{VJ} =45°C	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	A	
	T _{VJ} =150°C	t=10ms(50Hz), sine t=8.3ms(60Hz), sine		
I²t	T _{VJ} =45°C	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	A ² s	
	T _{VJ} =150°C	t=10ms(50Hz), sine t=8.3ms(60Hz), sine		
T_{VJ}		-40...+150	°C	
T_{stg}		-40...+125		
T_{Smax}		110		
P_{tot}	T _C =25°C	875	W	
V_{ISOL}	50/60Hz, RMS	t=1min	3000	V~
	I _{ISOL} ≤1mA	t=1s	3600	
M_d	Mounting torque (M6)	2.25-2.75/20-25	Nm/lb.in.	
	Terminal connection torque (M6)	4.50-5.50/40-48		
ds	Creeping distance on surface	12.7	mm	
da	Strike distance through air	9.6	mm	
a	Maximum allowable acceleration	50	m/s ²	
Weight		170	g	

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SDKF2x250-12B

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$		12	mA
	$T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$		3	
	$T_{VJ}=125^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$		60	
V_F	$I_F=150\text{A}; T_{VJ}=125^{\circ}\text{C}$		1.38	V
	$T_{VJ}=25^{\circ}\text{C}$		1.69	
	$I_F=260\text{A}; T_{VJ}=125^{\circ}\text{C}$		1.54	
	$T_{VJ}=25^{\circ}\text{C}$		1.80	
V_{TO}	For power-loss calculations only		1.16	V
r_T			1.46	mΩ
R_{thJH} R_{thJC}	DC current DC current		0.228 0.143	K/W
t_{rr} I_{RM}	$I_F=300\text{A}; T_{VJ}=100^{\circ}\text{C}$ $V_R=600\text{V}; T_{VJ}=25^{\circ}\text{C}$ $-di/dt=400\text{A}/\mu\text{s}; T_{VJ}=100^{\circ}\text{C}$	450	500 55 83	ns A A

FEATURES

- * International standard package
- * Copper Base Plate
- * Glass passivated chips
- * Short recovery time
- * Low switching losses
- * Soft recovery behaviour
- * Isolation voltage 3600 V~
- * 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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Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

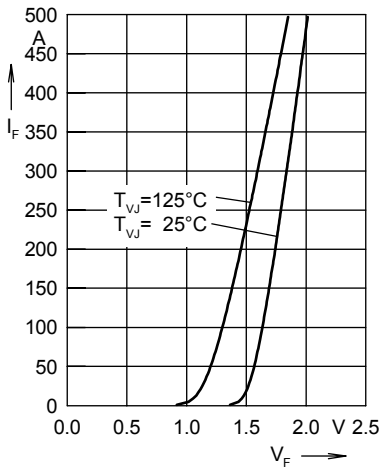


Fig. 1 Forward current I_F versus voltage drop V_F per leg

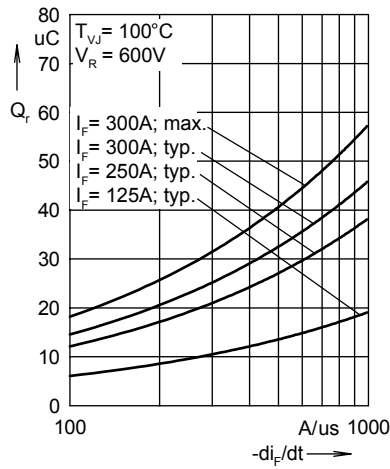


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

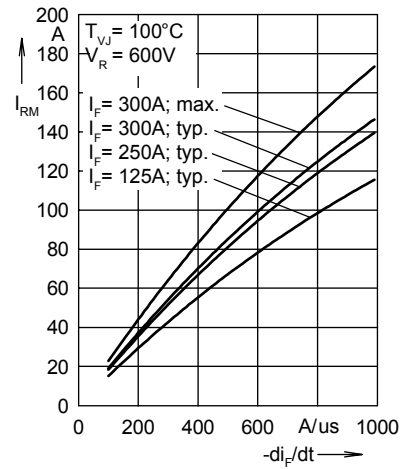


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

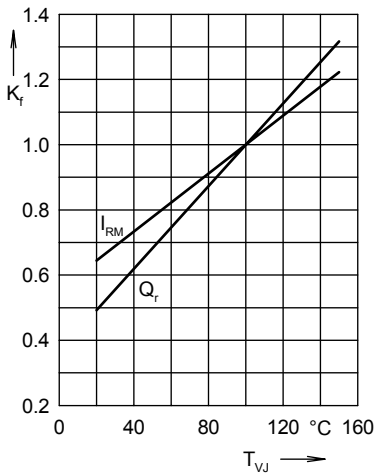


Fig. 4 Dynamic parameters Q_r , I_{RM} versus junction temperature T_{VJ}

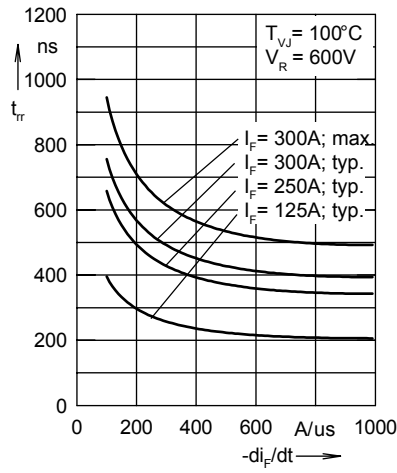


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

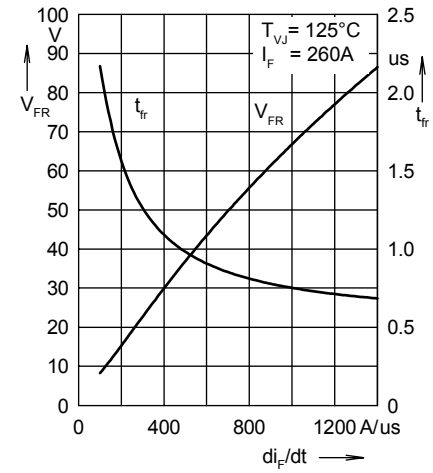


Fig. 6 Peak forward voltage V_{FR} and t_{tr} versus di_F/dt

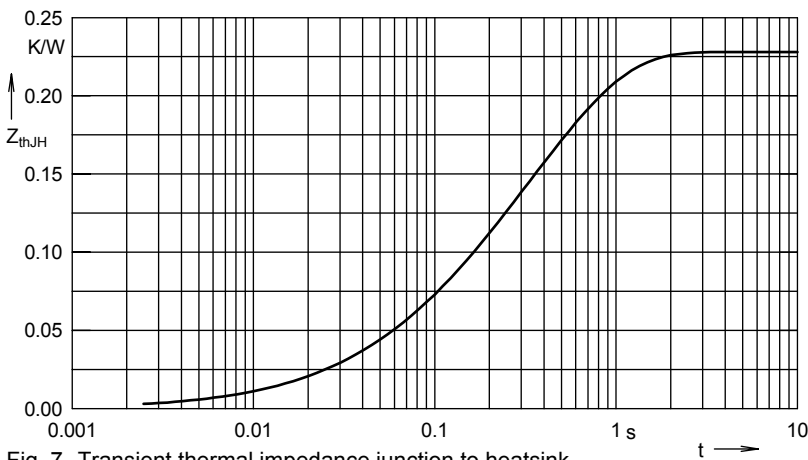


Fig. 7 Transient thermal impedance junction to heatsink

Constants for Z_{thJS} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.002	0.08
2	0.008	0.024
3	0.054	0.112
4	0.164	0.464