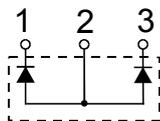


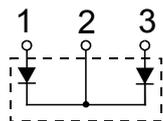
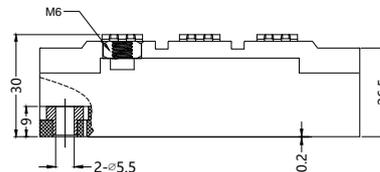
SDKF2x250-12DA SDAF2X250-12DA SDEF2X250-12DA

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

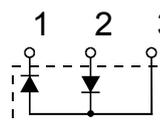


SDAF2X250-12DA
Center Common

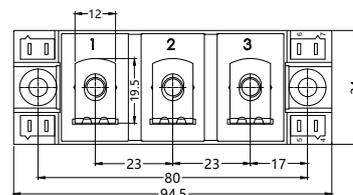
Dimensions in mm (1mm=0.0394")



SDKF2X250-12DA
Center Common



SDEF2X250-12DA
Side Common



	V _{RSM} V	V _{RRM} V
SDAF2X250-12DA	1200	1200
SDKF2X250-12DA	1200	1200
SDEF2X250-12DA	1200	1200

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 260	
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	
I ² t	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} T _{stg} T _{Smax}		-40...+150 -40...+125 110	°C
P _{tot}	T _C =25°C	875	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



SDKF2x250-12DA SDAF2X250-12DA SDEF2X250-12DA

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
- * DBC Base Plate
- * Planar 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



SDKF2x250-12DA SDAF2X250-12DA SDEF2X250-12DA

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

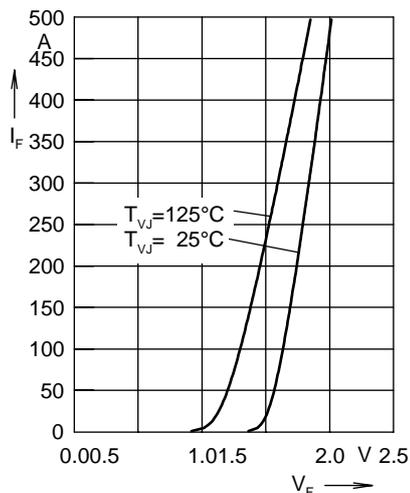


Fig. 1 Forward current I_F versus voltage drop V_F per leg

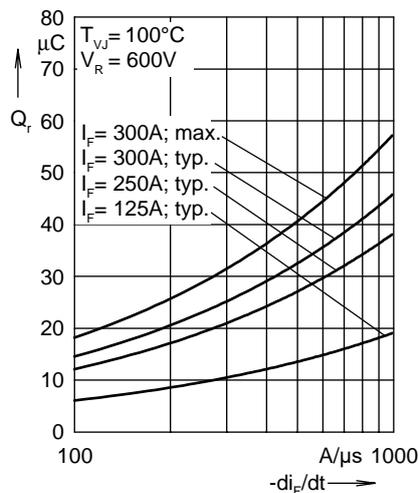


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

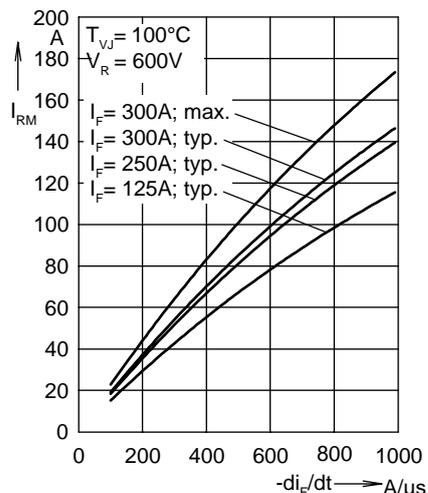


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

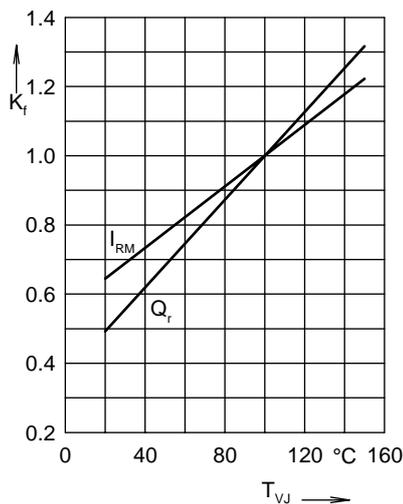


Fig. 4 Dynamic parameters Q_r, I_{RM} versus junction temperature T_{VJ}

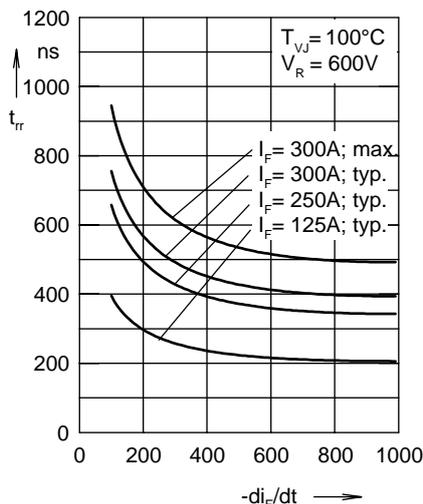


Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

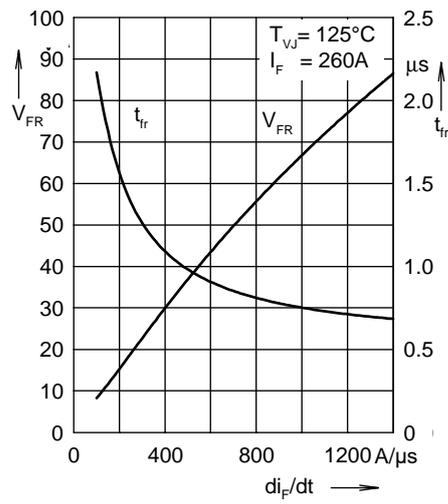


Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

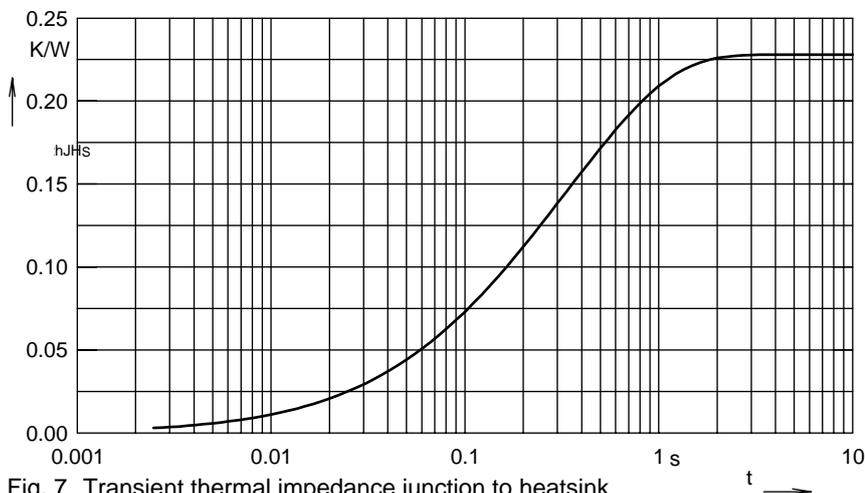


Fig. 7 Transient thermal impedance junction to heatsink

Constants for Z_{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