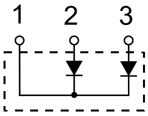
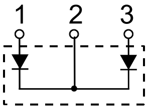
SDKF/SDAF/SDEF/SDFF2x200-12B1(B2)

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules



SDKF2X200-12B1
Side Common



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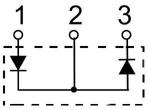
Center Common



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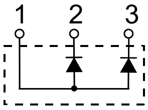

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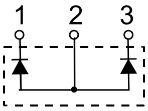

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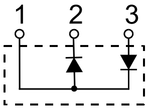
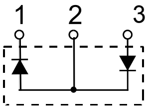
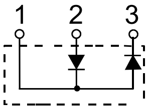
Center Common



SDEF2X200-12B1
Side Common

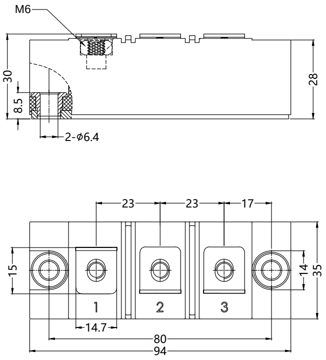


SDEF2X200-12B2
Center Common



SDFF2X200-12B1
Side Common

Dimensions in mm (1mm=0.0394")



	VRSM V	VRRM V
SDKF2x200-12B1	1200	1200
SDKF2x200-12B2	1200	1200

	VRSM V	VRRM V
SDEF2x200-12B1	1200	1200
SDEF2x200-12B2	1200	1200

	VRSM V	VRRM V
SDAF2x200-12B1	1200	1200
SDAF2x200-12B2	1200	1200

	VRSM V	VRRM V
SDFF2x200-12B1	1200	1200
SDFF2x200-12B2	1200	1200

FEATURES

* International standard package
* Copper Base Plate
* Planar passivatd chips
* Short recovery time
* Low switching losses
* Soft recovery behaviour
* Isolation voltage 3600 V~
* 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

SDKF/SDAF/SDEF/SDFF2x200-12B1(B2)

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM} I_{FRM}	$T_C=75^oC$ $T_C=75^oC$; rectangular, d=0.5 Per Diode $t_p<10us$; rep. rating, pulse width limited by T_{VJM}	290 200 1380	A
I_{FSM}	$T_{VJ}=45^oC$ t=10ms (50Hz), sine t=8.3ms (60Hz), sine	2100 2310	A
	$T_{VJ}=150^oC$ t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1890 2070	
I^2t	$T_{VJ}=45^oC$ t=10ms (50Hz), sine t=8.3ms (60Hz), sine	18800 19300	A^2s
	$T_{VJ}=150^oC$ t=10ms(50Hz), sine t=8.3ms(60Hz), sine	13300 13800	
T_{VJ} T_{stg} T_{Smax}		-40...+150 -40...+125 110	^oC
P_{tot}	$T_C=25^oC$	775	W
V_{ISOL}	50/60Hz, RMS t=1min $I_{ISOL}\leq1mA$ 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 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		170	g

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^oC$; $V_R=V_{RRM}$ $T_{VJ}=25^oC$; $V_R=0.8\cdot V_{RRM}$ $T_{VJ}=125^oC$; $V_R=0.8\cdot V_{RRM}$		12 3 60	mA
V_F	$I_F=100A$; $T_{VJ}=125^oC$ $T_{VJ}=25^oC$ $I_F=200A$; $T_{VJ}=125^oC$ $T_{VJ}=25^oC$		1.58 1.89 2.10 2.30	V
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}	$I_F=200A$; $T_{VJ}=100^oC$ $V_R=600V$; $T_{VJ}=25^oC$ -di/dt=400A/us; $T_{VJ}=100^oC$	450	500 55 83	ns A A

SDKF/SDAF/SDEF/SDFF2x200-12B1(B2)

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

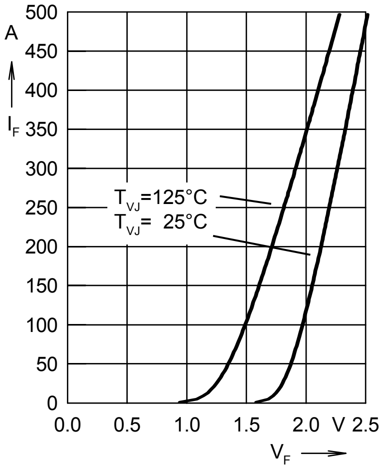


Fig. 1 Forward current I_F versus voltage drop V_F per leg

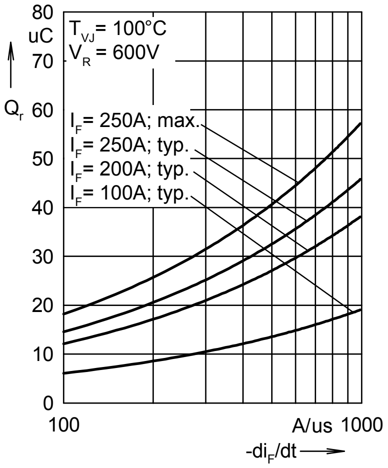


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

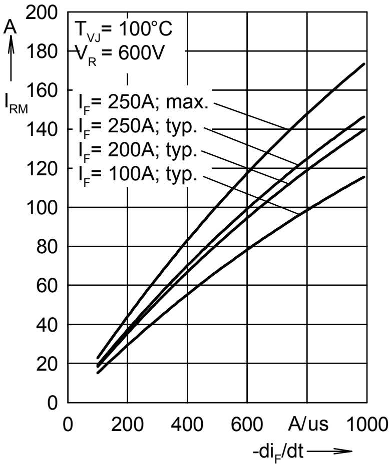


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

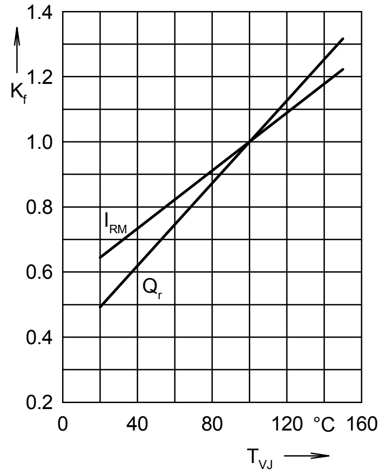


Fig. 4 Dynamic parameters Q_r, I_{RM} versus junction temperature T_{VJ}

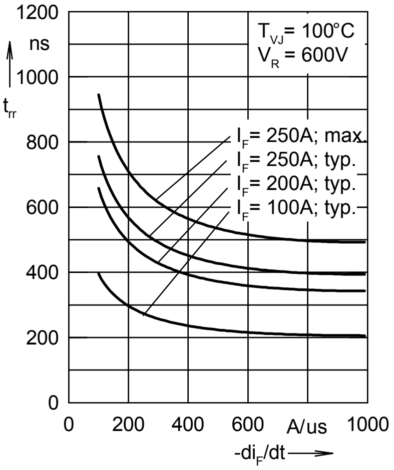


Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

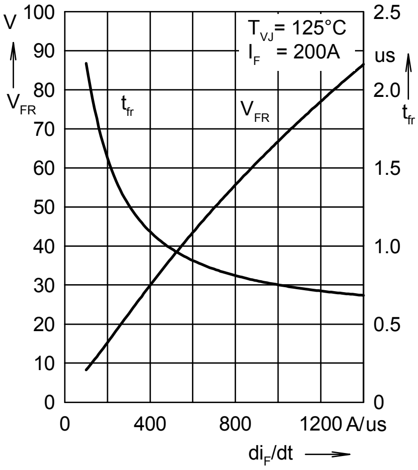


Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

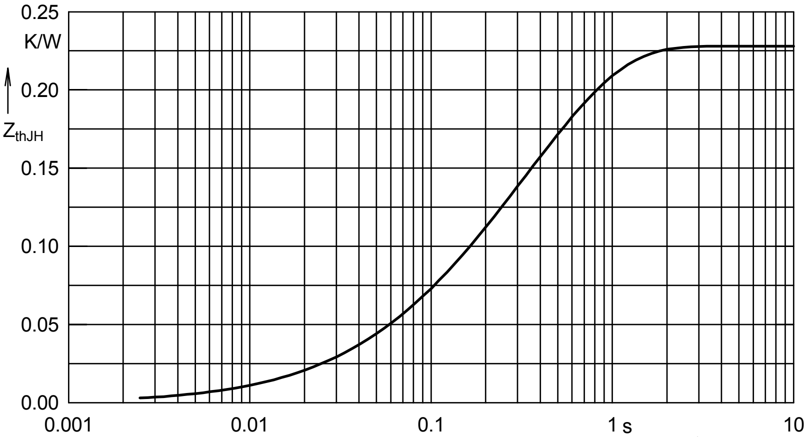


Fig. 7 Transient thermal impedance junction to heatsink

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