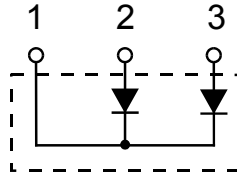
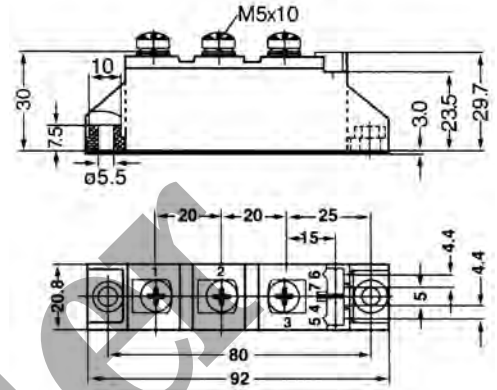


SDKF2x75-12B

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules



Dimensions in mm (1mm=0.0394")



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	V_{RSM}	V_{RRM}
	V	V
SDKF2x75-12B	1200	1200

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS}	$T_C=75^\circ C$	107	A
I_{FAVM}	$T_C=75^\circ C$; rectangular, $d=0.5$	2 x 75	
I_{FRM}	$t_p < 10\mu s$; rep. rating, pulse width limited by T_{VJM}	TBD	
I_{FSM}	$T_{VJ}=45^\circ C$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	A
	$T_{VJ}=150^\circ C$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	
I^2t	$T_{VJ}=45^\circ C$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	A^2s
	$T_{VJ}=150^\circ C$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	
T_{VJ}		-40...+150	$^\circ C$
T_{stg}		-40...+125	
T_{Hmax}		110	
P_{tot}	$T_{case}=25^\circ C$	280	W
V_{ISOL}	50/60Hz, RMS $t=1min$	3000	V~
	$I_{ISOL} \leq 1mA$ $t=1s$	3600	
M_d	Mounting torque (M5)	2.50-4/22-35	Nm/lb.in.
	Terminal connection torque (M5)	2.50-4/22-35	
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		108	g

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SDKF2x75-12B

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

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

FEATURES

- * International standard package
- * Copperbase plate
- * Glass passivated chips
- * Short recovery time
- * Low switching losses
- * Soft recovery behaviour
- * UL File NO.E310749
- * RoHS compliance

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

SDKF2x75-12B

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

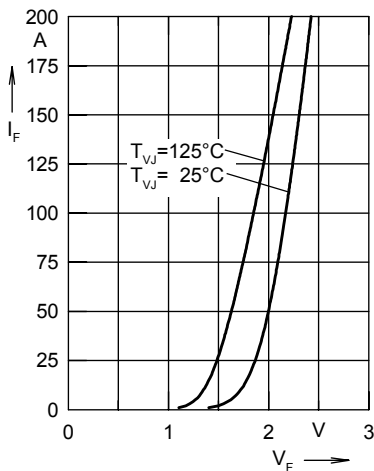


Fig. 1 Forward current I_F versus voltage drop V_F per leg

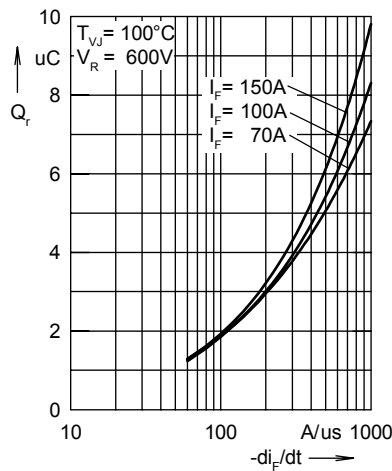


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

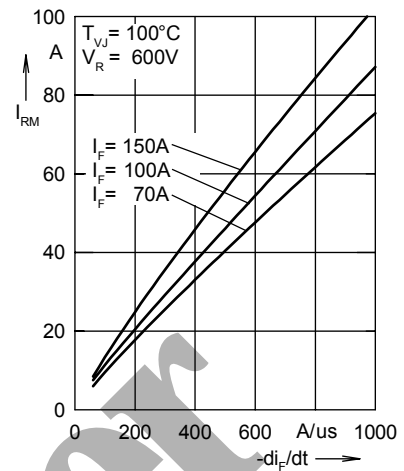


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

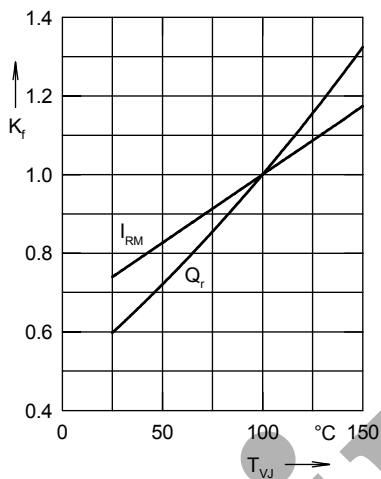


Fig. 4 Dynamic parameters Q_r , I_{RM} versus junction temperature T_{VJ}

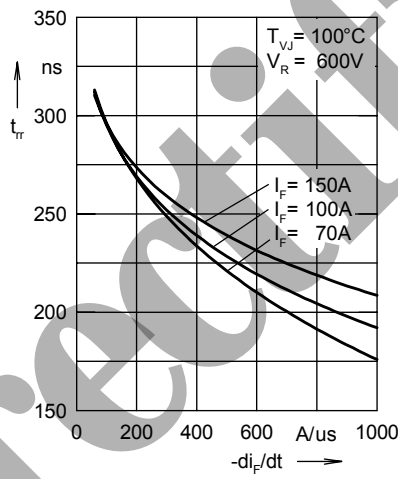


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

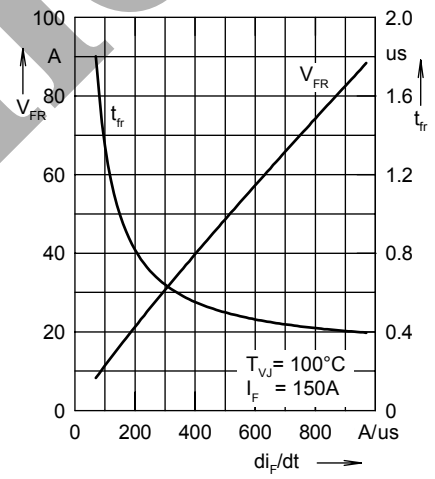


Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

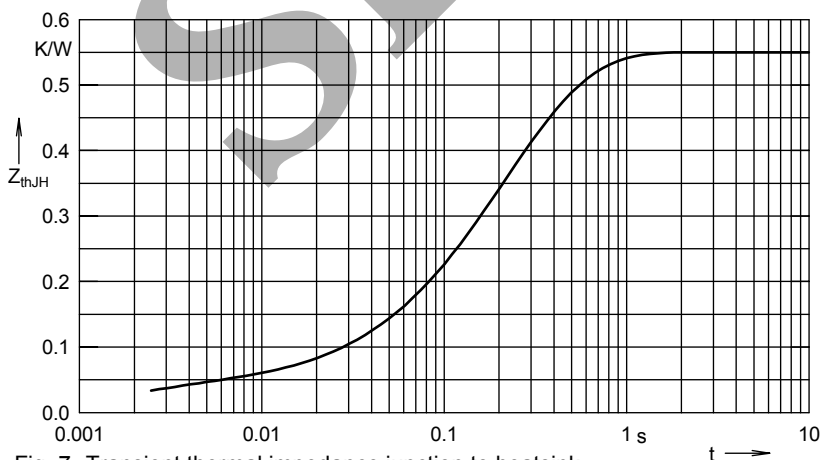


Fig. 7 Transient thermal impedance junction to heatsink

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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