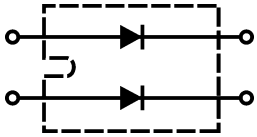
IXYS

Fast Recovery Epitaxial Diode (FRED)

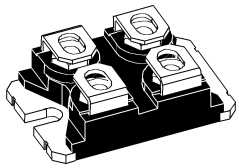
DSEI 2x 61

I_{FAVM} = 2x 71 A
V_{RRM} = 200 V
t_{rr} = 35 ns

V_{RSM} V	V_{RRM} V	Type
200	200	DSEI 2x 61-02A



miniBLOC, SOT-227 B
E72873



Symbol	Test Conditions		Maximum Ratings (per diode)	
I_{FRMS}	$T_{VJ} = T_{VJM}$		100	A
I_{FAVM} ①	T_C = 85°C; rectangular, d = 0.5		71	A
I_{FRM}	t_P < 10 µs; rep. rating, pulse width limited by T_{VJM}		800	A
I_{FSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	950	A
		t = 8.3 ms (60 Hz), sine	1020	A
	T_{VJ} = 150°C;	t = 10 ms (50 Hz), sine	800	A
		t = 8.3 ms (60 Hz), sine	870	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	4500	A^2s
		t = 8.3 ms (60 Hz), sine	4300	A^2s
	T_{VJ} = 150°C;	t = 10 ms (50 Hz), sine	3200	A^2s
		t = 8.3 ms (60 Hz), sine	3140	A^2s
T_{VJ}			-40...+150	°C
T_{VJM}			150	°C
T_{stg}			-40...+150	°C
P_{tot}	T_C = 25°C		150	W
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \leq$ 1 mA		2500	V~
M_d	Mounting torque		1.1-1.5/9-13	Nm/lb.in.
	Terminal connection torque (M4)		1.1-1.5/9-13	Nm/lb.in.
Weight			30	g

Symbol	Test Conditions		Characteristic Values (per diode) typ.	max.	
I_R	T_{VJ} = 25°C	$V_R = V_{RRM}$		50	µA
	T_{VJ} = 25°C	V_R = 0.8 • V_{RRM}		40	µA
	T_{VJ} = 125°C	V_R = 0.8 • V_{RRM}		11	mA
V_F	I_F = 60 A;	T_{VJ} = 150°C		0.88	V
		T_{VJ} = 25°C		1.08	V
V_{T0}	For power-loss calculations only			0.7	V
r_T	$T_{VJ} = T_{VJM}$			3.0	mΩ
R_{thJC}				0.8	K/W
R_{thCK}			0.05		K/W
t_{rr}	I_F = 1 A; -di/dt = 200 A/µs; V_R = 30 V; T_{VJ} = 25°C		35	50	ns
I_{RM}	V_R = 100 V; I_F = 60 A; $-di_F/dt$ = 200 A/µs L ≤ 0.05 mH; T_{VJ} = 100°C		8	10	A

① I_{FAVM} rating includes reverse blocking losses at T_{VJM}, V_R = 0.8 V_{RRM}, duty cycle d = 0.5
Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

Features

- International standard package miniBLOC (ISOTOP compatible)
- Isolation voltage 2500 V~
- 2 independent FRED in 1 package
- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low I_{RM}-values
- Soft recovery behaviour

Applications

- Antiparallel diode for high frequency switching devices
- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- 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
- Operating at lower temperature or space saving by reduced cooling

600

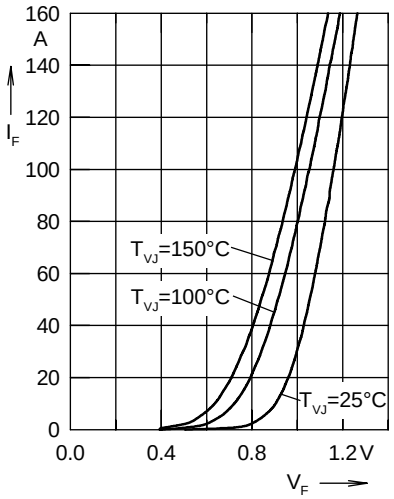


Fig. 1 Forward current I_F versus V_F

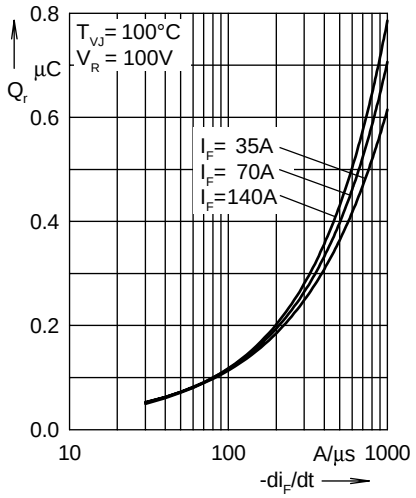


Fig. 2 Typ. reverse recovery charge Q_r versus $-di_F/dt$

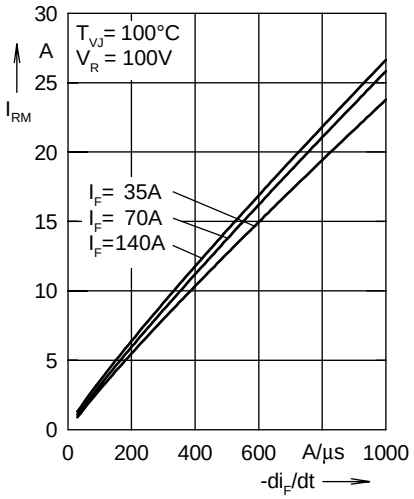


Fig. 3 Typ. peak reverse current I_{RM} versus $-di_F/dt$

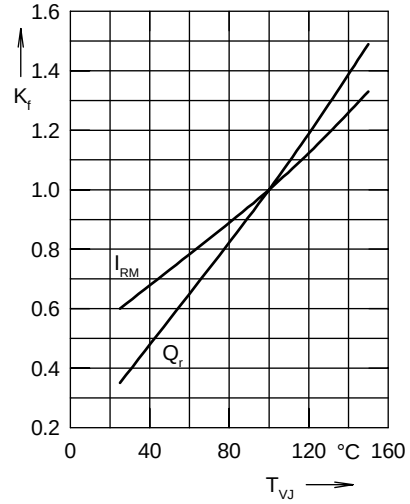


Fig. 4 Dynamic parameters Q_r, I_{RM} versus T_{VJ}

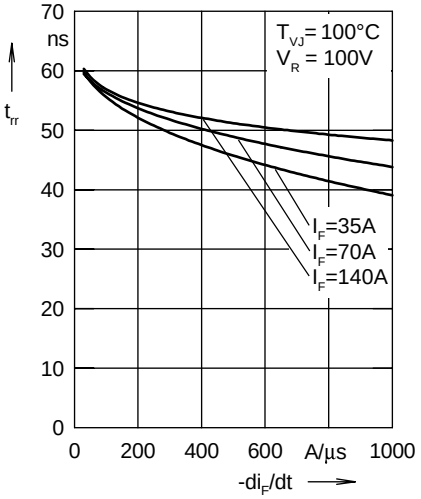


Fig. 5 Typ. recovery time t_{rr} versus $-di_F/dt$

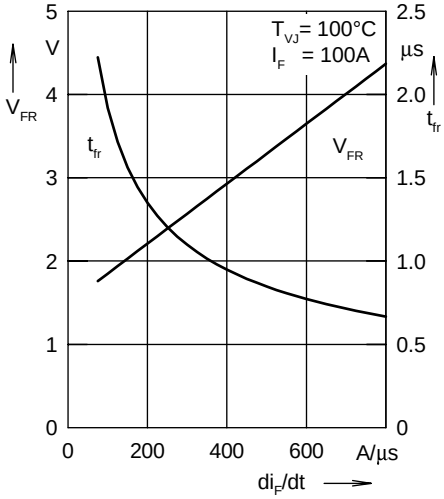


Fig. 6 Typ. peak forward voltage V_{FR} and t_{fr} versus di_F/dt

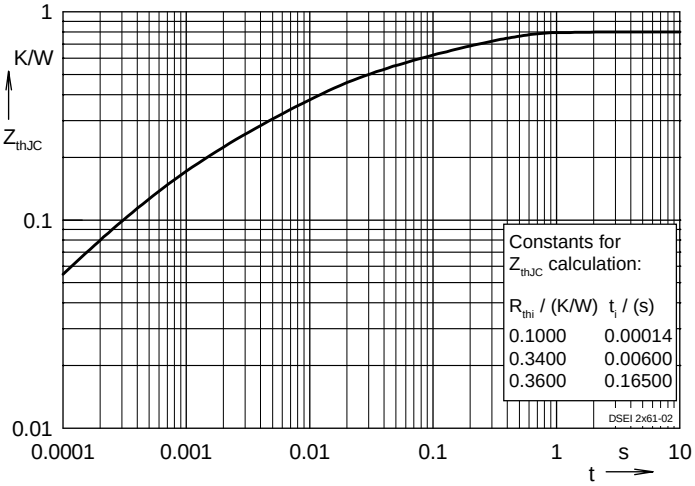
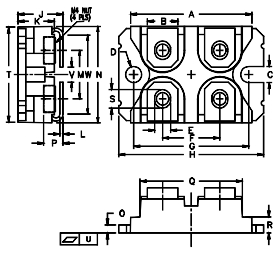


Fig. 7 Transient thermal impedance junction to case

Dimensions



miniBLOC SOT-227 B
M4 screws (4x) supplied

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.20	1.489	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004
V	3.30	4.57	0.130	0.180
W	0.780	0.830	19.81	21.08

littlediode
COMPONENTS FOR ALL

Littlediode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.