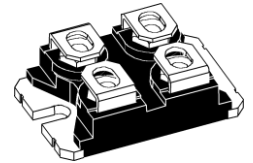
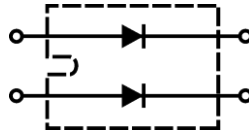


YZPST-F2x101-12A

Fast Recovery Epitaxial Diode (FRED)

$V_{RRM} = 1200\text{ V}$
 $I_{FAVM} = 2 \times 91\text{ A}$
 $t_{rr} = 48\text{ ns}$

V_{RSM}	V_{RRM}	Type
V	V	
1200	1200	YZPST-F2x 101-12A

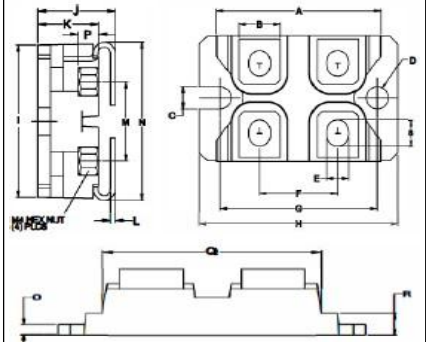


Symbol	Test Conditions	Maximum Ratings (per diode)	
$I_{F(RMS)}$	$T_{VJ} = T_{VJM}$	130	A
$I_{F(AVM)}^{①}$	$T_C = 50^\circ\text{C}$; rectangular, $d = 0.5$	91	A
I_{FRM}	$t_p < 10\ \mu\text{s}$; rep. rating, pulse width limited by T_{VJM}	TBD	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$; $t = 10\text{ ms}$ (50 Hz), sine	900	A
	$t = 8.3\text{ ms}$ (60 Hz), sine	970	A
	$T_{VJ} = 150^\circ\text{C}$; $t = 10\text{ ms}$ (50 Hz), sine	810	A
	$t = 8.3\text{ ms}$ (60 Hz), sine	870	A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	4100	A^2s
	$t = 8.3\text{ ms}$ (60 Hz), sine	4000	A^2s
	$T_{VJ} = 150^\circ\text{C}$; $t = 10\text{ ms}$ (50 Hz), sine	3300	A^2s
	$t = 8.3\text{ ms}$ (60 Hz), sine	3200	A^2s
T_{VJ}		-40...+150	$^\circ\text{C}$
T_{VJM}		150	$^\circ\text{C}$
T_{stg}		-40...+150	$^\circ\text{C}$
P_{tot}	$T_C = 25^\circ\text{C}$	250	W
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \leq 1\text{ mA}$	2500	V~
M_d	Mounting torque	1.5/13	Nm/lb.in.
	Terminal connection torque (M4)	1.5/13	Nm/lb.in.
Weight		30	g

Features

- International standard package
- miniBLOC (ISOTOP compatible)
- Isolation voltage 2500 V~
- matched diodes f. parallel operation
- Planar passivated chips
- two independent diodes
- Very short recovery time
- Extremely low switching losses
- Low I_{RM} -values
- Soft recovery behaviour

miniBLOC, SOT-227 B



DIM	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	31.40	31.60	1.236	1.244
B	7.70	8.10	0.303	0.319
C	4.20	4.40	0.165	0.173
D	4.20	4.40	0.165	0.173
E	4.10	4.30	0.161	0.169
F	14.90	15.10	0.587	0.594
G	30.10	30.20	1.185	1.189
H	38.00	38.30	1.496	1.507
I	23.80	24.20	0.937	0.953
J	12.20	12.70	0.480	0.500
K	9.40	9.60	0.370	0.378
L	0.75	0.85	0.030	0.033
M	12.40	12.60	0.488	0.496
N	24.50	25.40	0.964	1.000
O	1.90	2.10	0.075	0.083
P	3.10	3.20	0.122	0.126
Q	26.60	27.00	1.063	1.079
R	3.80	4.20	0.150	0.165
S	5.10	5.40	0.205	0.213

Symbol	Test Conditions	Characteristic Values (per diode)	
		typ.	max.
I_R	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$		3 mA
	$T_{VJ} = 25^\circ\text{C}$ $V_R = 0.8 \cdot V_{RRM}$		1.5 mA
	$T_{VJ} = 125^\circ\text{C}$ $V_R = 0.8 \cdot V_{RRM}$		15 mA
V_F	$I_F = 100\text{ A}$; $T_{VJ} = 150^\circ\text{C}$		1.61 V
	$T_{VJ} = 25^\circ\text{C}$		1.87 V
V_{T0}	For power-loss calculations only		1.01 V
r_T			6.1 mΩ
R_{thJC}			0.5 K/W
R_{thCH}		0.05	K/W
t_{rr}	$I_F = 1\text{ A}$; $-di/dt = 400\text{ A}/\mu\text{s}$; $V_R = 30\text{ V}$; $T_{VJ} = 25^\circ\text{C}$	40	60 ns
I_{RM}	$V_R = 100\text{ V}$; $I_F = 75\text{ A}$; $-di_F/dt = 200\text{ A}/\mu\text{s}$	24	30 A
	L 至 0.05 mH; $T_{VJ} = 100^\circ\text{C}$		

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

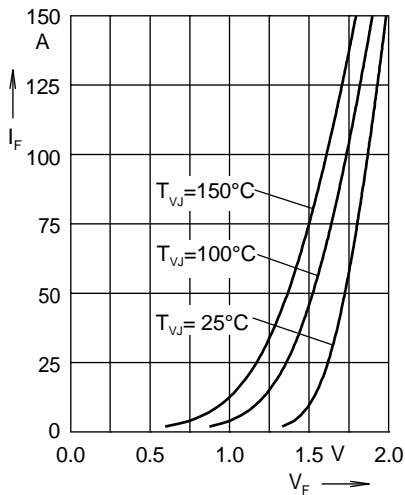


Fig. 1 Forward current I_F versus V_F

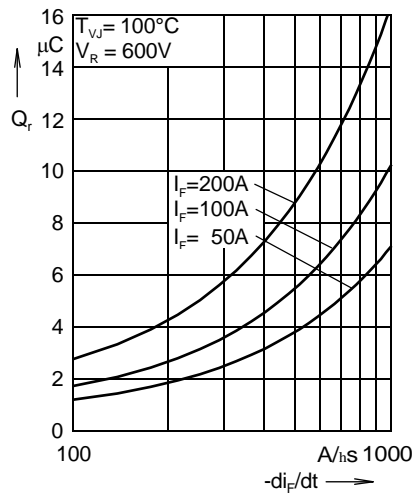


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

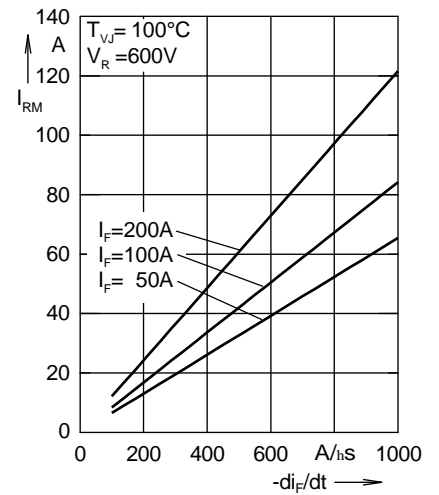


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

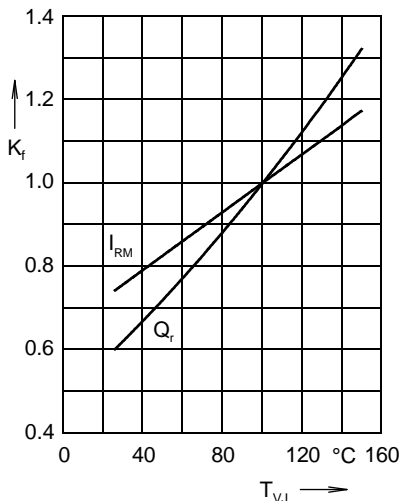


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

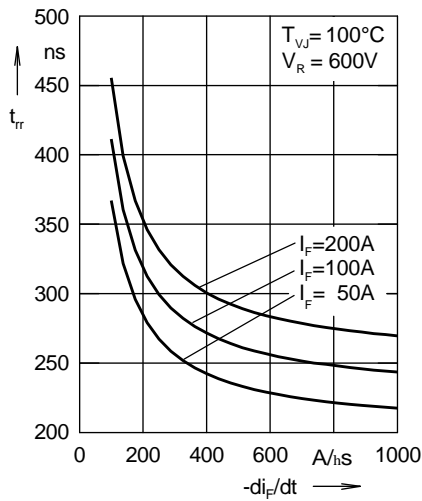


Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

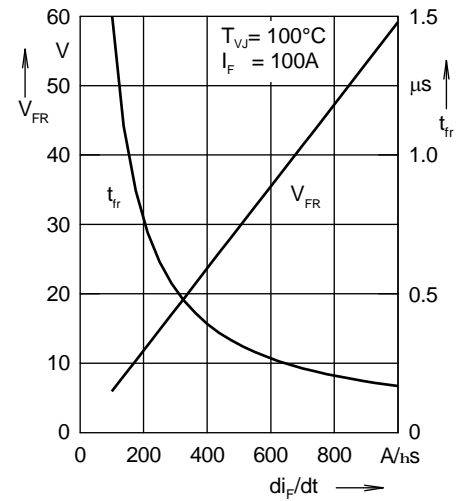


Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

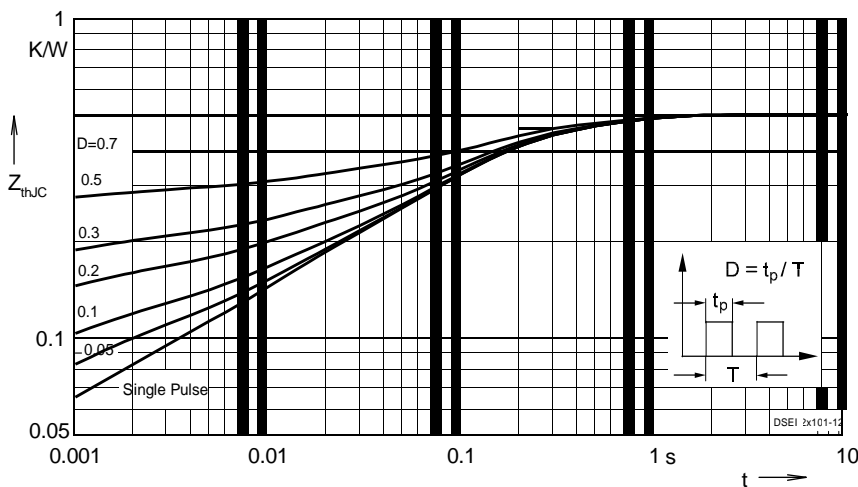


Fig. 7 Transient thermal impedance junction to case at various duty cycles

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.02	0.00002
2	0.05	0.00081
3	0.076	0.01
4	0.24	0.94
5	0.114	0.45