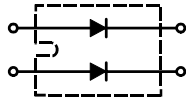
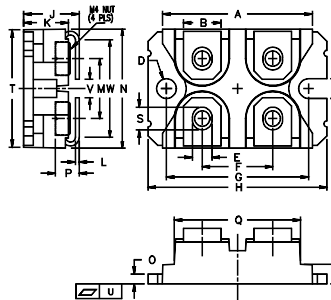


# SUR2x120-02

## Ultra Fast Recovery Epitaxial Diodes



Dimensions SOT-227(ISOTOP)



Dim.	Millimeter		Inches	
	Min.	Max.	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	0.031	0.033

	$V_{RSM}$ V	$V_{RRM}$ V
<b>SUR2x120-02</b>	200	200

Symbol	Test Conditions	Maximum Ratings	Unit
$I_{FRMS}$	$T_{VJ}=T_{VJM}$	150	A
$I_{FAVM}$	$T_C=70^{\circ}C$ ; rectangular, $d=0.5$	123	
$I_{FRM}$	$t_p<10\mu s$ ; rep. rating, pulse width limited by $T_{VJM}$	600	
$I_{FSM}$	$T_{VJ}=45^{\circ}C$	$t=10ms$ (50Hz), sine	A
		$t=8.3ms$ (60Hz), sine	
	$T_{VJ}=150^{\circ}C$	$t=10ms$ (50Hz), sine	
		$t=8.3ms$ (60Hz), sine	
$I^2t$	$T_{VJ}=45^{\circ}C$	$t=10ms$ (50Hz), sine	$A^2s$
		$t=8.3ms$ (60Hz), sine	
	$T_{VJ}=150^{\circ}C$	$t=10ms$ (50Hz), sine	
		$t=8.3ms$ (60Hz), sine	
$T_{VJ}$		-40...+150	$^{\circ}C$
$T_{VJM}$		150	
$T_{stg}$		-40...+150	
$P_{tot}$	$T_C=25^{\circ}C$	250	W
$V_{ISOL}$	50/60Hz, RMS $I_{ISOL}\leq 1mA$	2500	V~
$M_d$	Mounting torque Terminal connection torque (M4)	1.5/13 1.5/13	Nm/lb.in.
Weight		30	g

# SUR2x120-02

## Ultra Fast Recovery Epitaxial Diodes

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
<b>I<sub>R</sub></b>	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$ $T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$ $T_{VJ}=125^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$		1 0.5 20	mA
<b>V<sub>F</sub></b>	$I_F=120\text{A}; T_{VJ}=150^{\circ}\text{C}$ $T_{VJ}=25^{\circ}\text{C}$	0.89	0.95 1.10	V
<b>V<sub>TO</sub></b>	For power-loss calculations only		0.7	V
<b>r<sub>T</sub></b>	$T_{VJ}=T_{VJM}$		2.1	m $\Omega$
<b>R<sub>thJC</sub></b> <b>R<sub>thCK</sub></b>		1.0	0.5	K/W
<b>t<sub>rr</sub></b>	$I_F=1\text{A}; -di/dt=400\text{A/us}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$	35	50	ns
<b>I<sub>RM</sub></b>	$V_R=100\text{V}; I_F=100\text{A}; -di_F/dt=200\text{A/us}; L<0.05\mu\text{H}; T_{VJ}=100^{\circ}\text{C}$	12	15	A

### 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<sub>RM</sub>-values
- \* Soft recovery behaviour

### APPLICATIONS

- \* Antiparallel diode for high frequency switching devices
- \* Antisaturation 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

# SUR2x120-02

## Ultra Fast Recovery Epitaxial Diodes

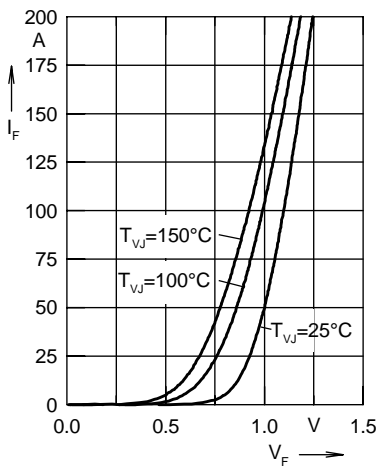


Fig. 1 Forward current  $I_F$  versus  $V_F$

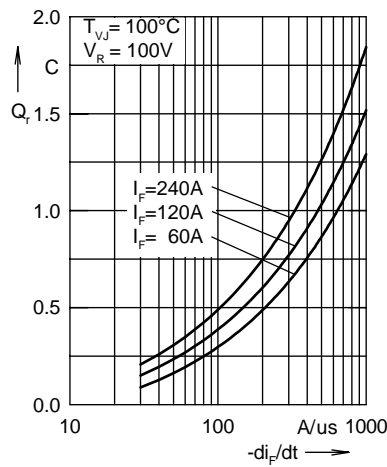


Fig. 2 Typ. reverse recovery charge  $Q_r$  versus  $-di_F/dt$

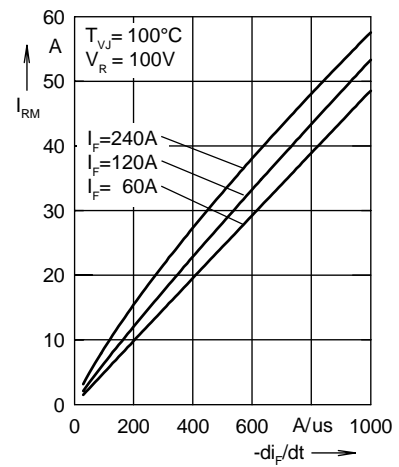


Fig. 3 Typ. peak reverse current  $I_{RM}$  versus  $-di_F/dt$

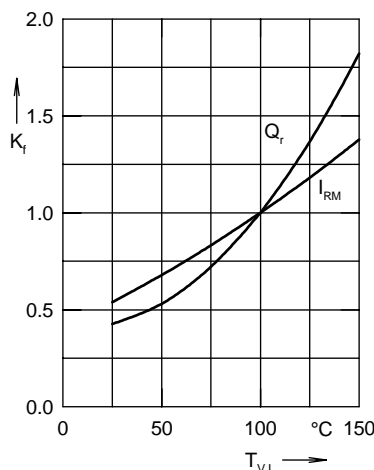


Fig. 4 Dynamic parameters  $Q_r$ ,  $I_{RM}$  versus  $T_{VJ}$

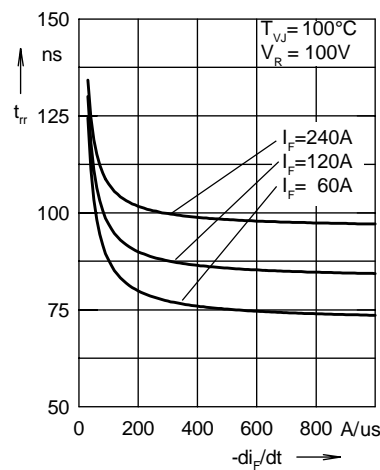


Fig. 5 Typ. recovery time  $t_{rr}$  versus  $-di_F/dt$

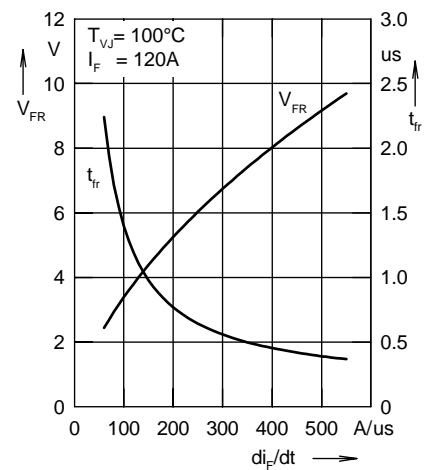


Fig. 6 Typ. peak forward voltage  $V_{FR}$  and  $t_{rr}$  versus  $di_F/dt$

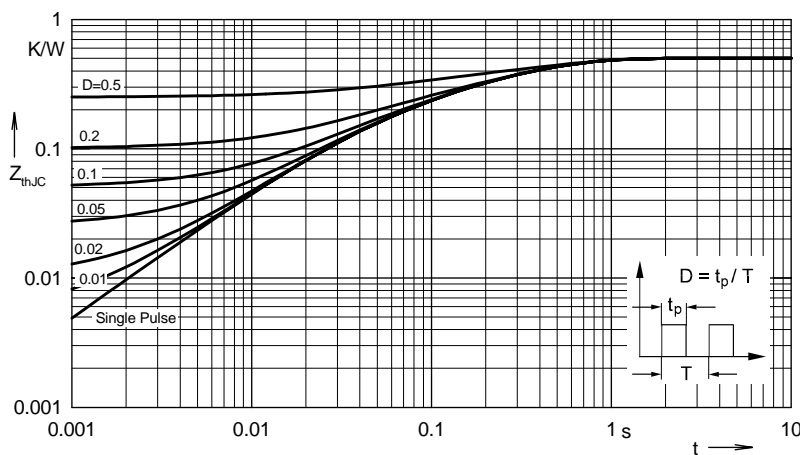


Fig. 7 Transient thermal impedance junction to case at various duty cycles

Constants for  $Z_{thJC}$  calculation:

i	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.0725	0.028
2	0.1423	0.092
3	0.2852	0.35

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Schottky Diodes & Rectifiers](#) category:*

*Click to view products by [Sirectifier](#) manufacturer:*

Other Similar products are found below :

[CUS06\(Te85L,Q,M\)](#) [MA4E2508M-1112](#) [D1FH3-5063](#) [MBR0530L-TP](#) [MBR10100CT-BP](#) [MBR30H100MFST1G](#) [MMBD301M3T5G](#)  
[PMAD1103-LF](#) [PMAD1108-LF](#) [RB160M-50TR](#) [RB520S-30](#) [RB551V-30](#) [D83C](#) [DD350N18K](#) [DZ435N40K](#) [DZ600N16K](#)  
[BAS16E6433HTMA1](#) [BAS 3010S-02LRH E6327](#) [BAT 15-099R E6327](#) [BAT 54-02LRH E6327](#) [NRVBAF360T3G](#) [NRVTS10100MFST1G](#)  
[NRVTS12100EMFST1G](#) [NSR05F40QNXT5G](#) [NSVR05F40NXT5G](#) [JANS1N6640](#) [SB07-03C-TB-H](#) [SB1003M3-TL-W](#) [SBAT54CWT1G](#)  
[SK32A-LTP](#) [SK33A-TP](#) [SK34A-TP](#) [SK34B-TP](#) [SMD1200PL-TP](#) [ACDBN160-HF](#) [SS3003CH-TL-E](#) [STPS3045CPIRG](#) [STPS30S45CW](#)  
[PDS3100Q-7](#) [GA01SHT18](#) [CRS10I30A\(Te85L,QM\)](#) [CRS10I30B\(Te85L,QM\)](#) [MBR1240MFST1G](#) [MBR20100CT-BP](#) [MBRB30H30CT-1G](#)  
[BAS28E6433HTMA1](#) [BAS 70-02L E6327](#) [BYS11-90-E3TR3](#) [JANTX1N5712-1](#) [VS-STPS40L45CW-N3](#)