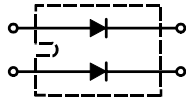
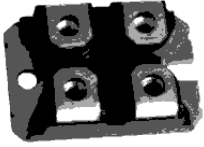
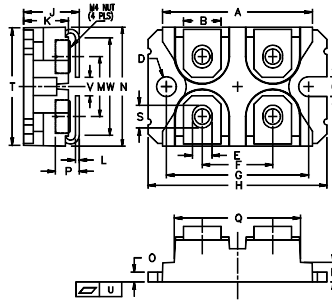


# HUR2x30-40

High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diode



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

	$V_{RSM}$	$V_{RRM}$
	V	V
<b>HUR2x30-40</b>	400	400

Symbol	Test Conditions	Maximum Ratings	Unit
$I_{FRMS}$	$T_C=105^\circ\text{C}$ ; rectangular, $d=0.5$	100	A
$I_{FAVM}$		30	
$I_{FSM}$	$T_{VJ}=45^\circ\text{C}$ ; $t_p=10\text{ms}$ (50Hz), sine	tbd	A
$E_{AS}$	$T_{VJ}=25^\circ\text{C}$ ; non-repetitive; $I_{AS}=tbd\text{A}$ ; $L=tbd\mu\text{H}$	tbd	mJ
$I_{AR}$	$V_A=1.5 \cdot V_R$ typ.; $f=10\text{kHz}$ ; repetitive	tbd	A
$T_{VJ}$		-40...+150	$^\circ\text{C}$
$T_{VJM}$		150	
$T_{stg}$		-40...+150	
$P_{tot}$	$T_C=25^\circ\text{C}$	100	W
$V_{ISOL}$	50/60Hz, RMS $I_{ISOL} \leq 1\text{mA}$	2500	V~
$M_d$	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in.
<b>Weight</b>	typical	30	g

**Sirectifier**®

# HUR2x30-40

High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diode

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
<b>I<sub>R</sub></b>	T <sub>VJ</sub> =25°C; V <sub>R</sub> =V <sub>RRM</sub> T <sub>VJ</sub> =150°C; V <sub>R</sub> =V <sub>RRM</sub>		0.25 1	mA
<b>V<sub>F</sub></b>	I <sub>F</sub> =30A; T <sub>VJ</sub> =125°C T <sub>VJ</sub> =25°C		1.15 1.45	V
<b>R<sub>thJC</sub></b> <b>R<sub>thCH</sub></b>		0.1	1.15	K/W
<b>t<sub>rr</sub></b>	I <sub>F</sub> =1A; -di/dt=200A/us; V <sub>R</sub> =30V; T <sub>VJ</sub> =25°C	30		ns
<b>I<sub>RM</sub></b>	V <sub>R</sub> =100V; I <sub>F</sub> =50A; -di <sub>F</sub> /dt=100A/us; T <sub>VJ</sub> =100°C		6.8	A

## FEATURES

- \* International standard package miniBLOC
- \* 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
- \* Uninterruptible power supplies (UPS)
- \* Ultrasonic cleaners and welders

## ADVANTAGES

- \* Avalanche voltage rated for reliable operation
- \* Soft reverse recovery for low EMI/RFI
- \* Low I<sub>RM</sub> reduces:
  - Power dissipation within the diode
  - Turn-on loss in the commutating switch

**Sirectifier**<sup>®</sup>

# HUR2x30-40

## High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diode

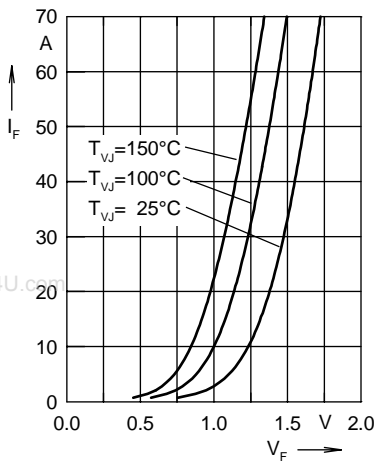


Fig. 1 Forward current  $I_F$  versus  $V_F$

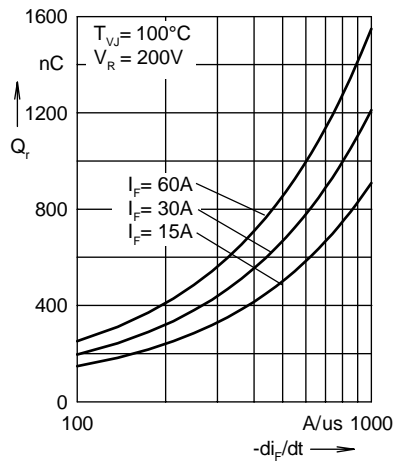


Fig. 2 Reverse recovery charge  $Q_r$  versus  $-di_F/dt$

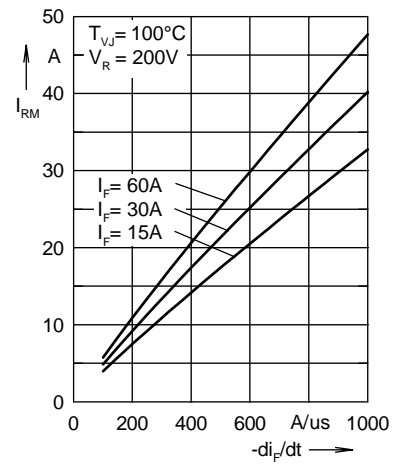


Fig. 3 Peak reverse current  $I_{RM}$  versus  $-di_F/dt$

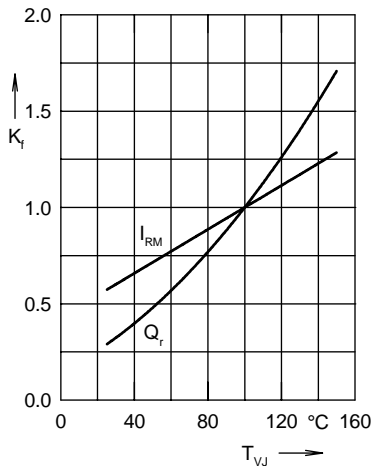


Fig. 4 Dynamic parameters  $Q_r$ ,  $I_{RM}$  versus  $T_{VJ}$

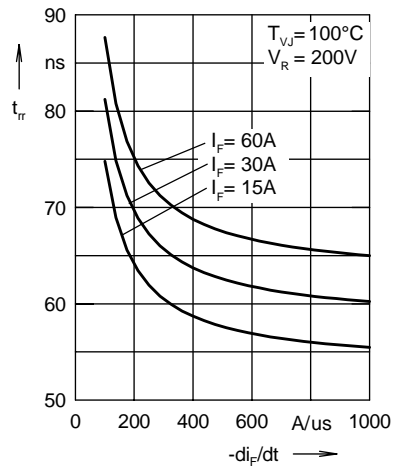


Fig. 5 Recovery time  $t_{tr}$  versus  $-di_F/dt$

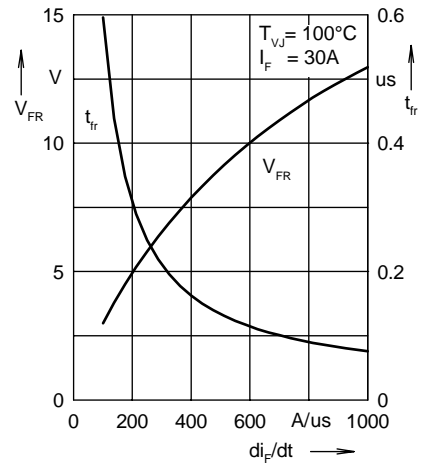


Fig. 6 Peak forward voltage  $V_{FR}$  and  $t_{tr}$  versus  $di_F/dt$

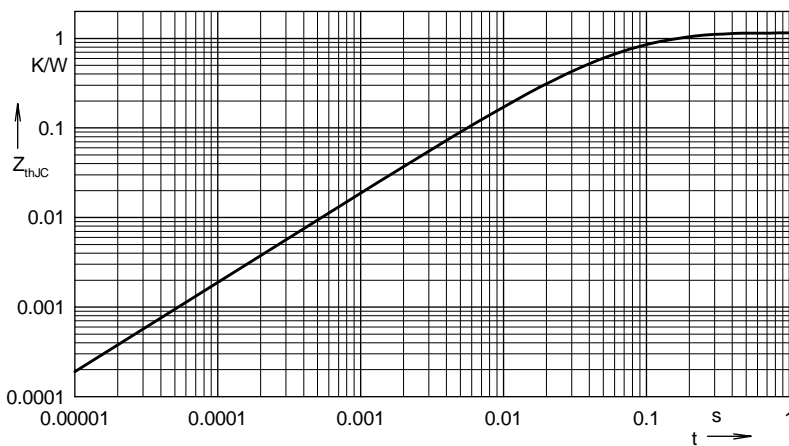


Fig. 7 Transient thermal resistance junction to case

Constants for  $Z_{thJC}$  calculation:

i	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.436	0.0055
2	0.482	0.0092
3	0.117	0.0007
4	0.115	0.0418