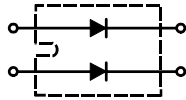
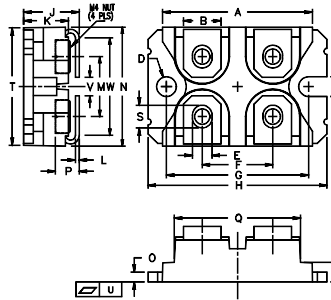


# HUR2x30-30

Soft Recovery Behaviour High-Performance Wide Temperature Range 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 |

|                   | $V_{RSM}$<br>V | $V_{RRM}$<br>V |
|-------------------|----------------|----------------|
| <b>HUR2x30-30</b> | 300            | 300            |

| Symbol                             | Test Conditions                                                   | Maximum Ratings                 | Unit        |
|------------------------------------|-------------------------------------------------------------------|---------------------------------|-------------|
| $I_{FRMS}$<br>$I_{FAVM}$           | $T_C=110^{\circ}C$ ; rectangular, $d=0.5$                         | 70<br>30                        | A           |
| $I_{FSM}$                          | $T_{VJ}=45^{\circ}C$ ; $t_p=10ms$ (50Hz), sine                    | 300                             | A           |
| $E_{AS}$                           | $T_{VJ}=25^{\circ}C$ ; non-repetitive; $I_{AS}=3A$ ; $L=180\mu H$ | 1.2                             | mJ          |
| $I_{AR}$                           | $V_A=1.5 \cdot V_R$ typ.; $f=10kHz$ ; repetitive                  | 0.3                             | A           |
| $T_{VJ}$<br>$T_{VJM}$<br>$T_{stg}$ |                                                                   | -40...+150<br>150<br>-40...+150 | $^{\circ}C$ |
| $P_{tot}$                          | $T_C=25^{\circ}C$                                                 | 100                             | W           |
| $V_{ISOL}$                         | 50/60Hz, RMS<br>$I_{ISOL} \leq 1mA$                               | 2500                            | V~          |
| $M_d$                              | mounting torque (M4)<br>terminal connection torque (M4)           | 1.1-1.5/9-13<br>1.1-1.5/9-13    | Nm/lb.in.   |
| Weight                             | typical                                                           | 30                              | g           |

**Sirectifier®**

# HUR2x30-30

Soft Recovery Behaviour High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diodes

| 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><br>T <sub>VJ</sub> =150°C; V <sub>R</sub> =V <sub>RRM</sub> |                       | 0.25<br>1    | mA   |
| <b>V<sub>F</sub></b>                               | I <sub>F</sub> =30A; T <sub>VJ</sub> =125°C<br>T <sub>VJ</sub> =25°C                                                |                       | 0.96<br>1.23 | V    |
| <b>R<sub>thJC</sub></b><br><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                     |                       | 7            | A    |

## FEATURES

- \* International standard package miniBLOC
- \* Isolation voltage 2500 V~
- \* 2 independent FRED in 1 package
- \* Glass passivated chips
- \* Very short recovery time
- \* Extremely low switching losses
- \* Low I<sub>RM</sub>-values
- \* Soft recovery behaviour
- \* UL File NO.E310749
- \* RoHS compliant

## 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®**

# HUR2x30-30

Soft Recovery Behaviour High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diodes

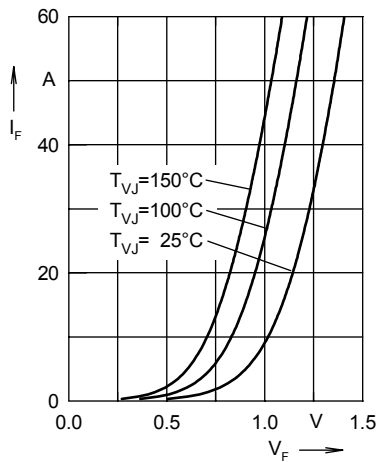


Fig. 1 Forward current  $I_F$  versus  $V_F$

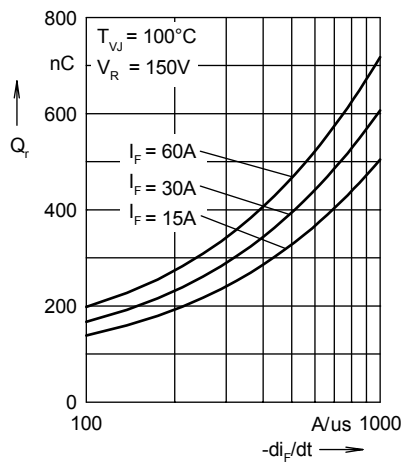


Fig. 2 Reverse recovery charge  $Q_r$  versus  $-di_F/dt$

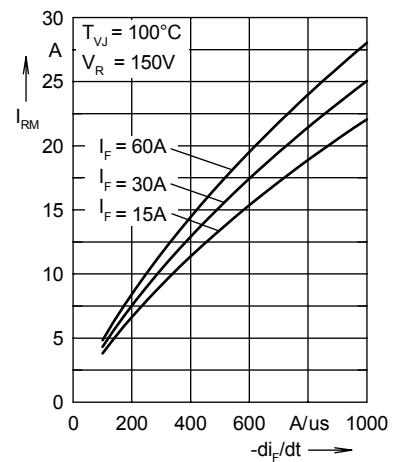


Fig. 3 Peak reverse current  $I_{RM}$  versus  $-di_F/dt$

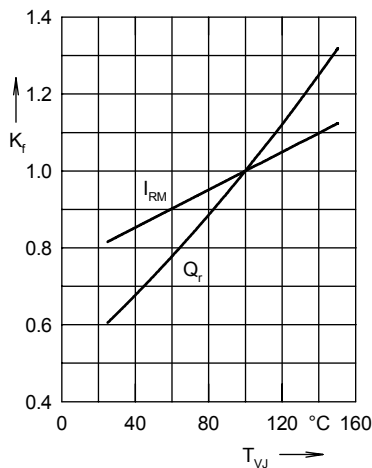


Fig. 4 Dynamic parameters  $Q_r$ ,  $I_{RM}$  versus  $T_{VJ}$

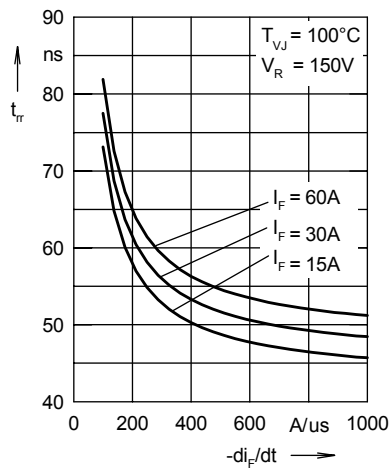


Fig. 5 Recovery time  $t_{rr}$  versus  $-di_F/dt$

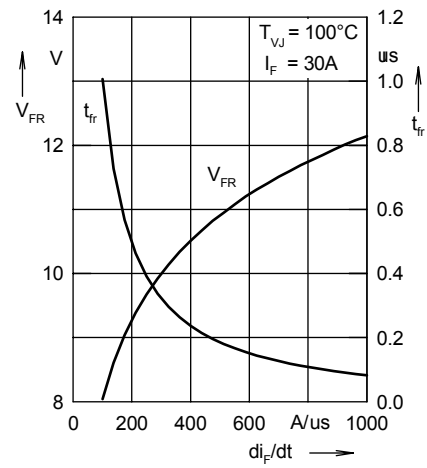


Fig. 6 Peak forward voltage  $V_{FR}$  and  $t_{fr}$  versus  $di_F/dt$

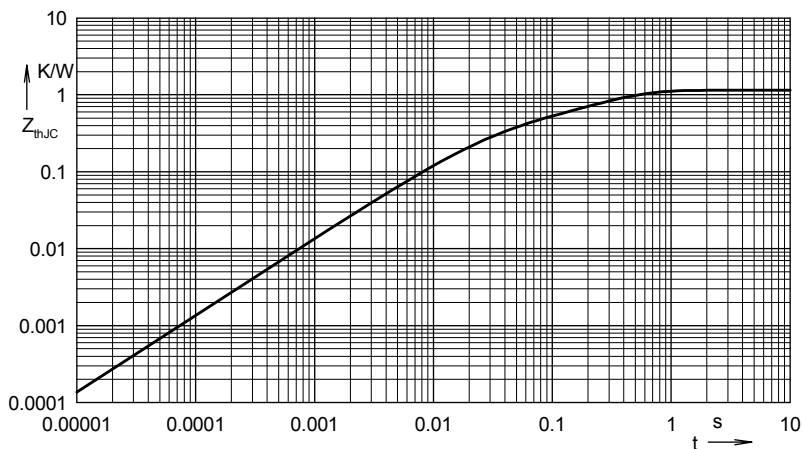


Fig. 7 Transient thermal resistance junction to case

Constants for  $Z_{thJC}$  calculation:

| i | $R_{thi}$ (K/W) | $t_i$ (s) |
|---|-----------------|-----------|
| 1 | 0.436           | 0.0055    |
| 2 | 0.482           | 0.009     |
| 3 | 0.117           | 0.0007    |
| 4 | 0.115           | 0.042     |