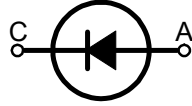
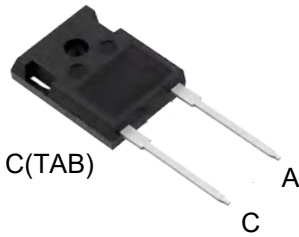


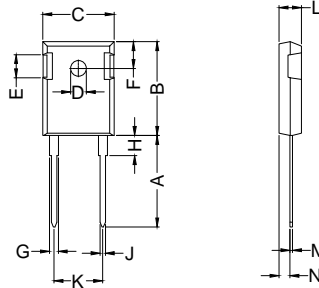
HUR3040

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



A=Anode, C=Cathode, TAB=Cathode

Dimensions TO-247AC



| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 19.81 | 20.32 | 0.780 | 0.800 |
| B | 20.80 | 21.46 | 0.819 | 0.845 |
| C | 15.75 | 16.26 | 0.620 | 0.640 |
| ØD | 3.15 | 3.65 | 0.124 | 0.144 |
| E | 4.32 | 5.49 | 0.170 | 0.216 |
| F | 5.40 | 6.30 | 0.213 | 0.248 |
| G | 1.65 | 2.13 | 0.065 | 0.084 |
| H | 3.80 | 4.50 | 0.150 | 0.177 |
| J | 1.00 | 1.40 | 0.039 | 0.055 |
| K | 10.80 | 11.10 | 0.425 | 0.437 |
| L | 4.70 | 5.30 | 0.185 | 0.209 |
| M | 0.40 | 0.80 | 0.016 | 0.031 |
| N | 1.50 | 2.49 | 0.059 | 0.098 |



| | V_{RSM} V | V_{RRM} V |
|----------------|----------------|----------------|
| HUR3040 | 400 | 400 |

| Symbol | Test Conditions | Maximum Ratings | Unit |
|------------|---------------------------------------------------------------------|-----------------|-------------|
| I_{FRMS} | $T_C=140^{\circ}C$; rectangular, $d=0.5$ | 70 | A |
| I_{FAVM} | | 30 | |
| I_{FSM} | $T_{VJ}=45^{\circ}C$; $t_p=10ms$ (50Hz), sine | tbd | A |
| E_{AS} | $T_{VJ}=25^{\circ}C$; non-repetitive; $I_{AS}=tbdA$; $L=tbd\mu H$ | tbd | mJ |
| I_{AR} | $V_A=1.5 \cdot V_R$ typ.; $f=10kHz$; repetitive | tbd | A |
| T_{VJ} | | -55...+175 | $^{\circ}C$ |
| T_{VJM} | | 175 | |
| T_{stg} | | -55...+150 | |
| P_{tot} | $T_C=25^{\circ}C$ | 165 | W |
| M_d | mounting torque | 0.8...1.2 | Nm |
| Weight | typical | 6 | g |

HUR3040

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

| Symbol | Test Conditions | Characteristic Values | | Unit |
|----------------------------------------|------------------------------------------------------------------------------------|-----------------------|------|------|
| | | typ. | max. | |
| I _R | T _{VJ} =25°C; V _R =V _{RRM} | | 250 | uA |
| | T _{VJ} =150°C; V _R =V _{RRM} | | 1 | mA |
| V _F | I _F =30A; T _{VJ} =150°C | | 1.11 | V |
| | T _{VJ} =25°C | | 1.46 | |
| R _{thJC} R _{thCH} | | 0.25 | 0.9 | K/W |
| t _{tr} | I _F =1A; -di/dt=300A/us; V _R =30V; T _{VJ} =25°C | 30 | | ns |
| I _{RM} | V _R =100V; I _F =50A; -diF/dt=100A/us; T _{VJ} =100°C | 5.5 | 6.8 | A |

FEATURES

- * International standard package
- * Planar passivated chips
- * Very short recovery time
- * Extremely low switching losses
- * Low I_{RM}-values
- * Soft recovery behaviour
- * RoHS compliant

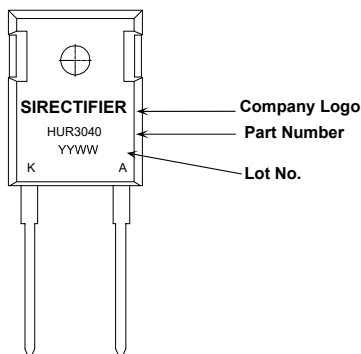
APPLICATIONS

- * 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_{RM} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

MARKING



ORDERING INFORMATION

| Part Number | Package | Shipping | Marking Code |
|-------------|----------|--------------|--------------|
| HUR3040 | TO-247AC | 30pcs / Tube | HUR3040 |

Sirectifier[®]

HUR3040

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

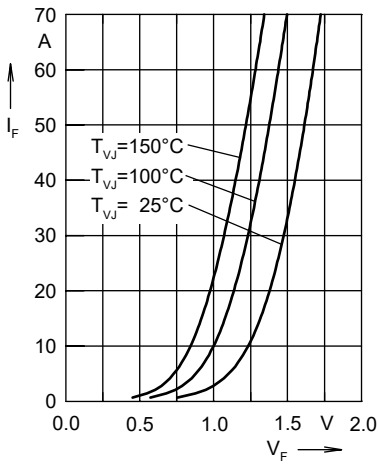


Fig. 1 Forward current I_F versus V_F

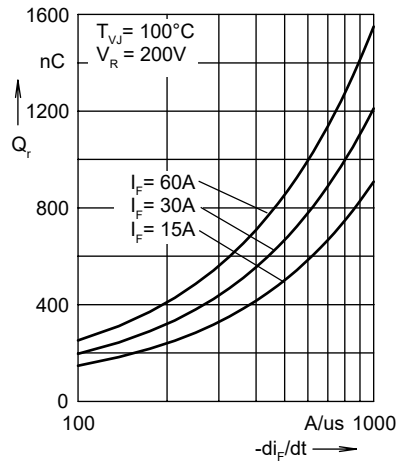


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

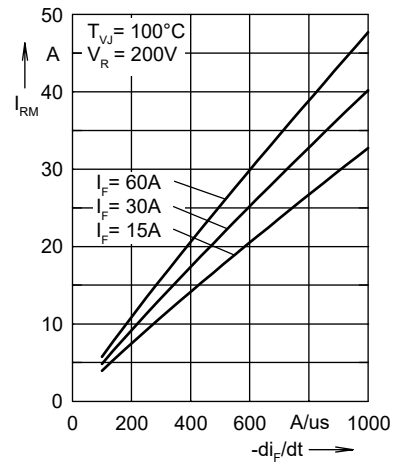


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

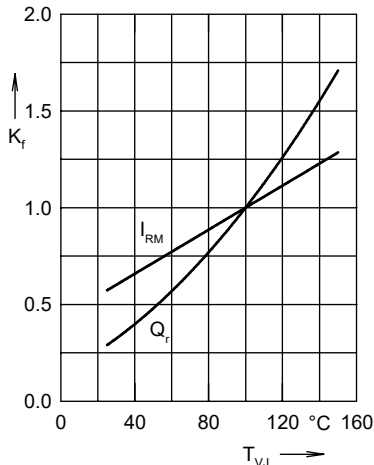


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

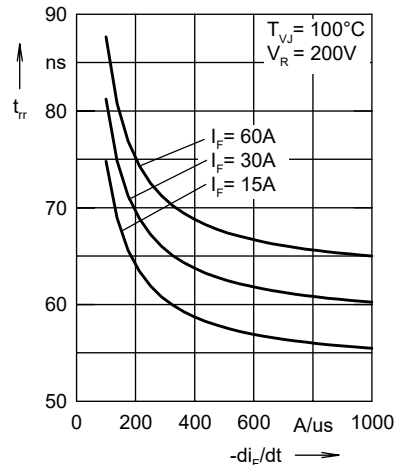


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

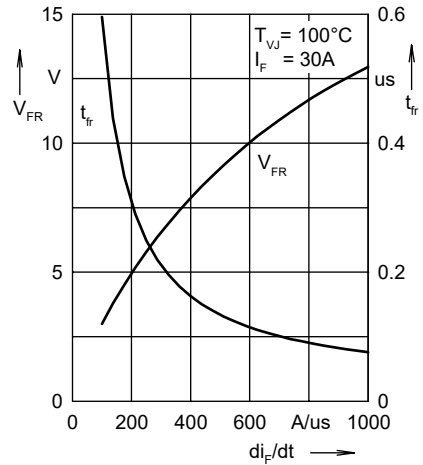


Fig. 6 Peak forward voltage V_{FR} and t_{tr} versus di_F/dt

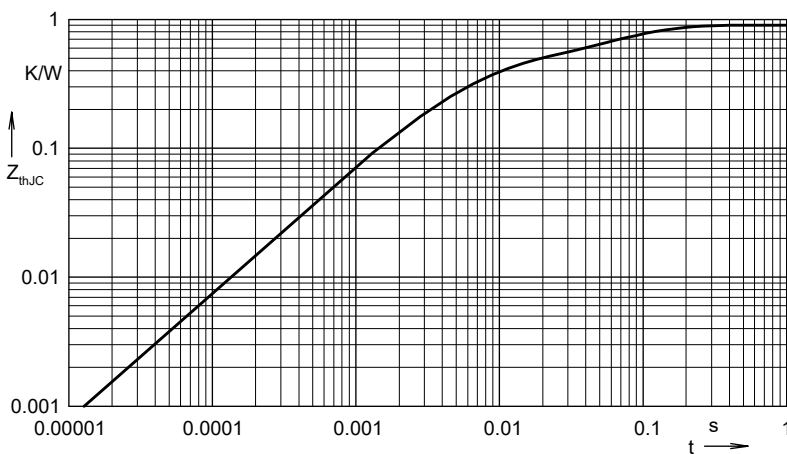


Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

| i | $R_{thi}(K/W)$ | t_i (s) |
|---|----------------|-----------|
| 1 | 0.465 | 0.0052 |
| 2 | 0.179 | 0.0003 |
| 3 | 0.256 | 0.0396 |