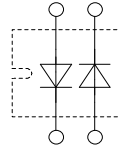


Sonic Fast Recovery Diode

High Performance Fast Recovery Diode
Low Loss and Soft Recovery
Anti-parallel legs

Part number

DH2x60-18A



Backside: Isolated

E72873

Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low I_{RM} -values
- Very soft recovery behaviour
- 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

Applications:

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode
- Rectifiers in switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)

Package:

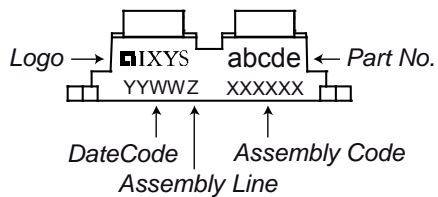
- Housing: SOT-227B (minibloc)
- Industry standard outline
- Cu base plate internal DCB isolated
- Isolation Voltage 3000 V
- Epoxy meets UL 94V-0
- RoHS compliant

Ratings

| Symbol | Definition | Conditions | Ratings | | | Unit |
|------------|-------------------------------------|---|---------|------|------|--------------------|
| | | | min. | typ. | max. | |
| V_{RRM} | max. repetitive reverse voltage | | | | 1800 | V |
| I_R | reverse current | $V_R = 1800\text{ V}$ | | | 200 | μA |
| | | $V_R = 1800\text{ V}$ | | | 2 | mA |
| V_F | forward voltage | $I_F = 60\text{ A}$ | | | 2.01 | V |
| | | $I_F = 120\text{ A}$ | | | 2.51 | V |
| | | $I_F = 60\text{ A}$ | | | 2.02 | V |
| | | $I_F = 120\text{ A}$ | | | 2.71 | V |
| I_{FAV} | average forward current | rectangular d = 0.5 | | | 60 | A |
| V_{FO} | threshold voltage | } for power loss calculation only | | | 1.28 | V |
| r_F | slope resistance | | | | 11.1 | m Ω |
| R_{thJC} | thermal resistance junction to case | | | | 0.60 | K/W |
| T_{VJ} | virtual junction temperature | | -40 | | 150 | $^{\circ}\text{C}$ |
| P_{tot} | total power dissipation | | | | 200 | W |
| I_{FSM} | max. forward surge current | t = 10 ms (50 Hz), sine | | | 700 | A |
| I_{RM} | max. reverse recovery current | | | | 60 | A |
| | | $I_F = 60\text{ A}; V_R = 1200\text{ V}$ | | | 70 | A |
| t_{rr} | reverse recovery time | -di _F /dt = 800 A/ μs | | | 230 | ns |
| | | | | | 350 | ns |
| C_J | junction capacitance | $V_R = 1200\text{ V}; f = 1\text{ MHz}$ | | | 32 | pF |

| Symbol | Definition | Conditions | Ratings | | | Unit |
|---------------|---|----------------------|---------|------|------|------|
| | | | min. | typ. | max. | |
| I_{RMS} | RMS current | per terminal | | | 100 | A |
| R_{thCH} | thermal resistance case to heatsink | | | 0.10 | | K/W |
| T_{stg} | storage temperature | | -40 | | 150 | °C |
| Weight | | | | 30 | | g |
| M_D | mounting torque | | 1.1 | | 1.5 | Nm |
| M_T | terminal torque | | 1.1 | | 1.5 | Nm |
| V_{ISOL} | isolation voltage | t = 1 second | 3000 | | | V |
| | | t = 1 minute | 2500 | | | V |
| $d_{Spp/App}$ | creepage striking distance on surface through air | terminal to terminal | 10.5 | 3.2 | | mm |
| $d_{Spb/Apb}$ | creepage striking distance on surface through air | terminal to backside | 8.6 | 6.8 | | mm |

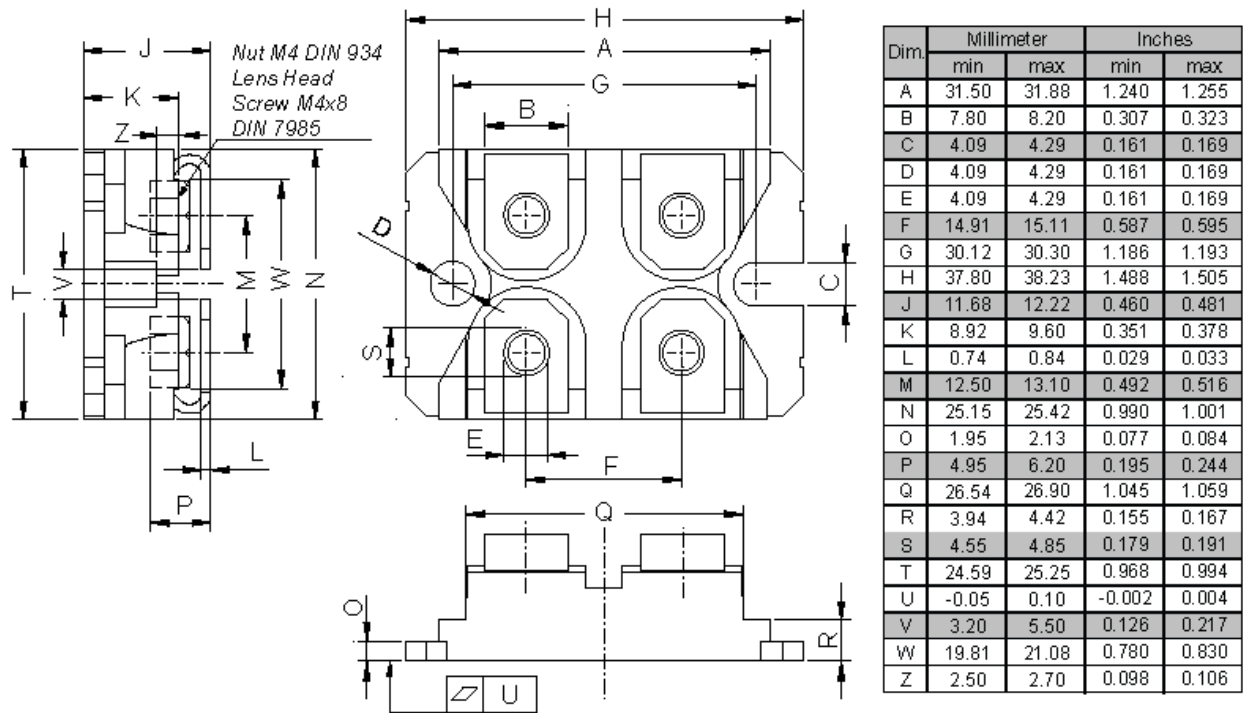
Product Marking



| Ordering | Part Name | Marking on Product | Delivering Mode | Base Qty | Code Key |
|----------|------------|--------------------|-----------------|----------|----------|
| Standard | DH2x60-18A | DH2x60-18A | Tube | 10 | 507191 |

| Similar Part | Package | Voltage Class |
|--------------|---------------------|---------------|
| DH2x61-18A | SOT-227B (minibloc) | 1800 |

Outlines SOT-227B (minibloc)



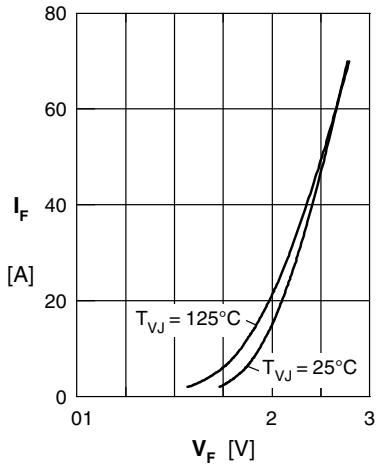


Fig. 1 Typ. rward current I_F versus V_F

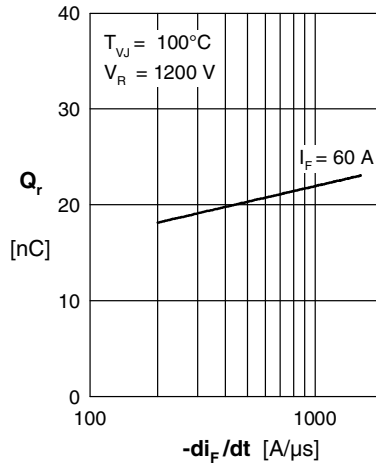


Fig. 2 Typ. reverse recovery charge Q_r versus $-di_F/dt$

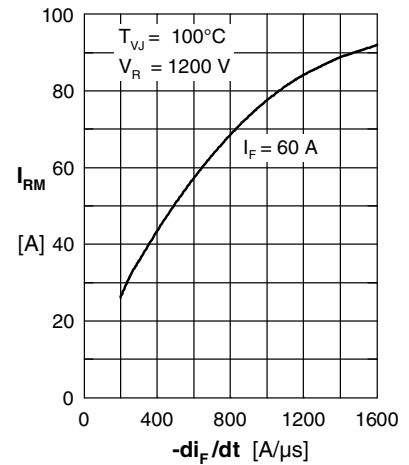


Fig. 3 Typ. peak reverse current I_{RM} versus $-di_F/dt$

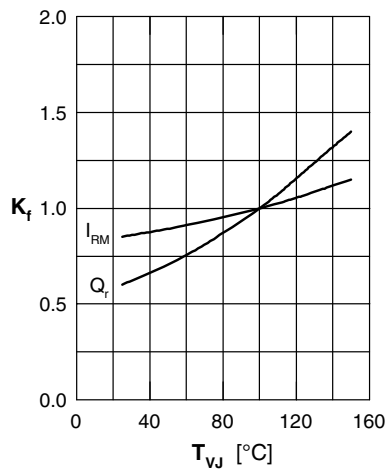


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

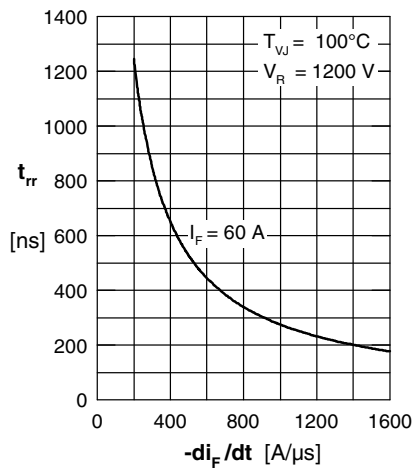


Fig. 5 Typ. recovery time t_{tr} versus $-di_F/dt$

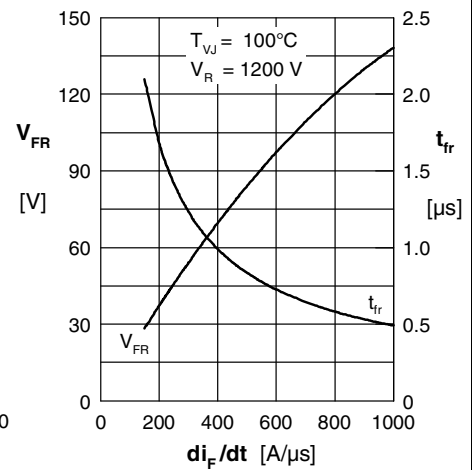


Fig. 6 Typ. peak forward voltage V_{FR} & typ. forward recovery time t_{fr} versus di_F/dt

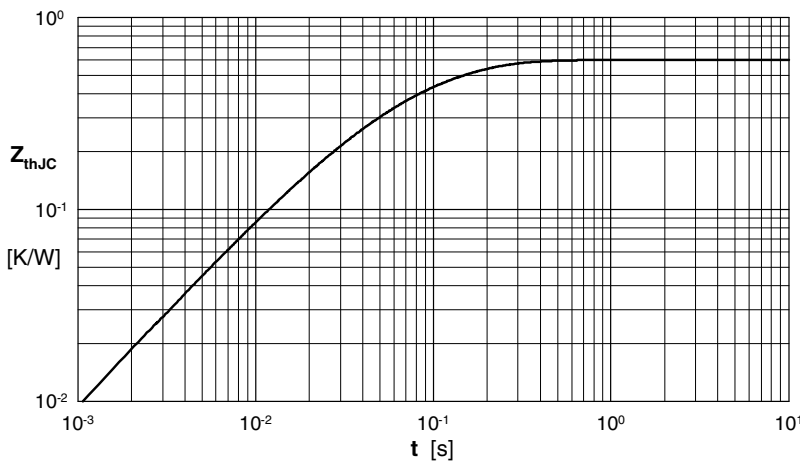


Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

| i | R_{thi} (K/W) | t_i (s) |
|---|-----------------|-----------|
| 1 | 0.212 | 0.0055 |
| 2 | 0.248 | 0.0092 |
| 3 | 0.063 | 0.0007 |
| 4 | 0.077 | 0.0391 |