

# HDS10U20AW

## Ultra Fast Recovery Diode

### General Description

The HDS10U20AW is ideally as boost diode in discontinuous or critical mode power factor corrections.

The planar structure and the platinum doper life time control guarantee the best overall performance, ruggedness reliability characteristics. The device is also intended for use as a freewheeling diode in power supplies and other power switching applications.

### Features

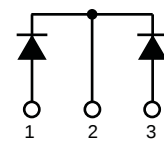
- ☐ Low forward drop voltage
- ☐ Dual common cathode rectifier construction
- ☐ Ultrafast recovery time and high speed switching

$$V_{RRM} = 200 \text{ V}$$

$$I_F = 2 \times 5 \text{ A}$$

$$t_{rr} = 19 \text{ nS}$$

TO-220F



Pin 1, 3 : Anode  
Pin 2 : Cathode

### Absolute Maximum Ratings $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol         | Parameter                                                      | Value       | Unit             |
|----------------|----------------------------------------------------------------|-------------|------------------|
| $V_{RRM}$      | Peak Repetitive Reverse Voltage                                | 200         | V                |
| $V_R$          | DC Blocking Voltage                                            |             |                  |
| $I_{F(AV)}$    | Average Rectifier Forward Current (Per Diode)<br>(Total Diode) | 5<br>10     | A                |
| $I_{FSM}$      | Non-Rectifier Peak Surge Current @8.3ms (Per Diode)            | 120         | A                |
| $T_J, T_{STG}$ | Operating and Storage Temperature Range                        | -45 to +150 | $^\circ\text{C}$ |

### Electrical Characteristics (Per Diode)

| Symbol   | Parameter             | Test Conditions                                        | Min | Typ  | Max  | Unit          |
|----------|-----------------------|--------------------------------------------------------|-----|------|------|---------------|
| $V_F$    | Forward Voltage       | $I_F = 5 \text{ A}, T_J = 25^\circ\text{C}$            | --  | 0.88 | 0.98 | V             |
| $I_R$    | Reverse Current       | $V_R = 200 \text{ V}, T_J = 25^\circ\text{C}$          | --  | --   | 5    | $\mu\text{A}$ |
|          |                       | $V_R = 200 \text{ V}, T_J = 125^\circ\text{C}$         | --  | --   | 200  |               |
| $t_{rr}$ | Reverse Recovery Time | $I_F = 1 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$ | --  | 17   | 25   | ns            |
| $C_j$    | Junction Capacitance  | $V_R = 10 \text{ V}, f = 1 \text{ MHz}$                | --  | 32   | --   | pF            |

### Thermal Resistance Characteristics

| Symbol          | Parameter                    | Typ. | Max. | Unit                      |
|-----------------|------------------------------|------|------|---------------------------|
| $R_{\theta JC}$ | Junction-to-Case (Per Diode) | --   | 4.0  | $^\circ\text{C}/\text{W}$ |

# Typical Characteristics (Per Diode)

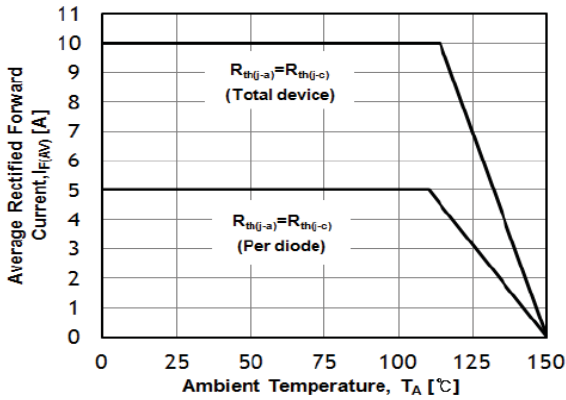


Figure 1. Forward Current Derating Curve

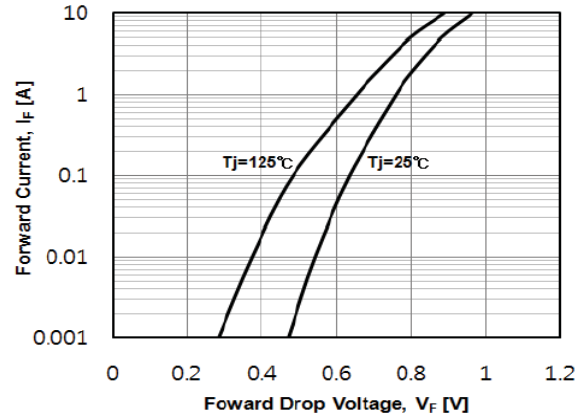


Figure 2. Typical Forward Characteristics

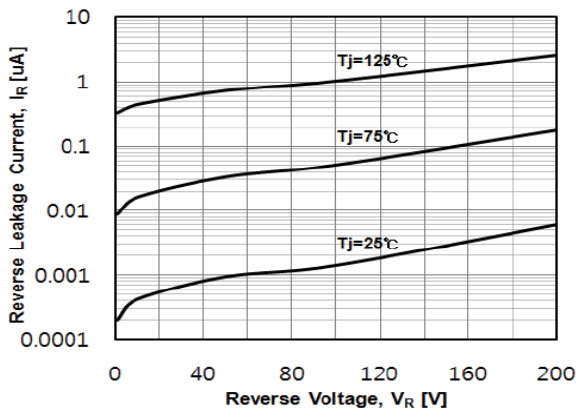


Figure 3. Typical Reverse Characteristics

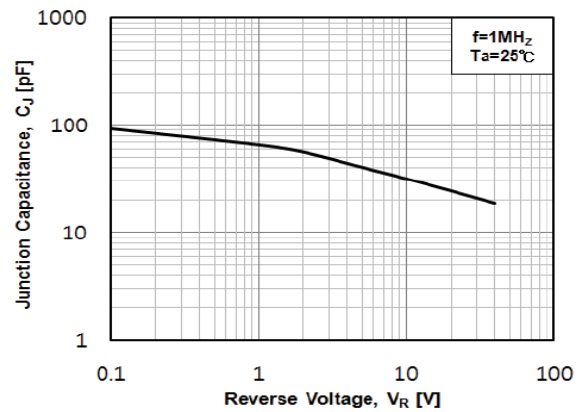


Figure 4. Typical Junction Capacitance

Package Dimension

TO-220F

