



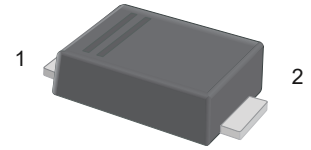
# US1AFL~US1MFL

## Surface Mount Superfast Recovery Rectifiers

### Features

- For surface mount applications
- Glass passivated chip junction
- Low power loss, high efficiency
- Superfast reverse recovery time

### SOD-123FL



1.Cathode  2.Anode

### Marking Code:

US1AFL: USL  
 US1BFL: USL  
 US1DFL: USL  
 US1GFL: USM  
 US1JFL: USH  
 US1KFL: USH  
 US1MFL: USH

### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter  | Symbols                   | US1AFL      | US1BFL | US1DFL | US1GFL | US1JFL | US1KFL | US1MFL | Units                     |               |
|--|---------------------------|-------------|--------|--------|--------|--------|--------|--------|---------------------------|---------------|
| Maximum Repetitive Peak Reverse Voltage  | $V_{RRM}$                 | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V                         |               |
| Maximum RMS Voltage  | $V_{RMS}$                 | 35          | 70     | 140    | 280    | 420    | 560    | 700    | V                         |               |
| Maximum DC Blocking Voltage  | $V_{DC}$                  | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | V                         |               |
| Maximum Average Forward Rectified Current at $T_C = 125^\circ\text{C}$             | $I_{F(AV)}$               | 1.0         |        |        |        |        |        |        | A                         |               |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load | $I_{FSM}$                 | 30          |        |        |        |        |        |        | A                         |               |
| Maximum Instantaneous Forward Voltage at 1 A                                       | $V_F$                     | 1.0         |        | 1.3    |        | 1.65   |        | V      |                           |               |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                            | $T_A = 25^\circ\text{C}$  | $I_R$       |        |        |        |        |        |        | 5                         | $\mu\text{A}$ |
|  | $T_A = 125^\circ\text{C}$ |             |        |        |        |        |        |        | 100                       |               |
| Typical Junction Capacitance <sup>Note1</sup>                                      | $C_j$                     | 15          |        |        |        |        |        |        | pF                        |               |
| Typical Thermal Resistance <sup>Note2</sup>  | $R_{\theta JA}$           | 85          |        |        |        |        |        |        | $^\circ\text{C}/\text{W}$ |               |
| Maximum Reverse Recovery Time <sup>Note3</sup>                                     | $T_{rr}$                  | 50          |        |        |        | 75     |        |        | nS                        |               |
| Junction Temperature   | $T_J$                     | 150         |        |        |        |        |        |        | $^\circ\text{C}$          |               |
| Storage Temperature Range  | $T_{STG}$                 | -55 to +150 |        |        |        |        |        |        | $^\circ\text{C}$          |               |

### Note:

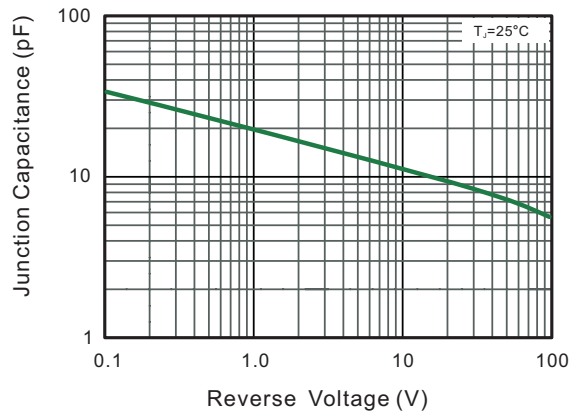
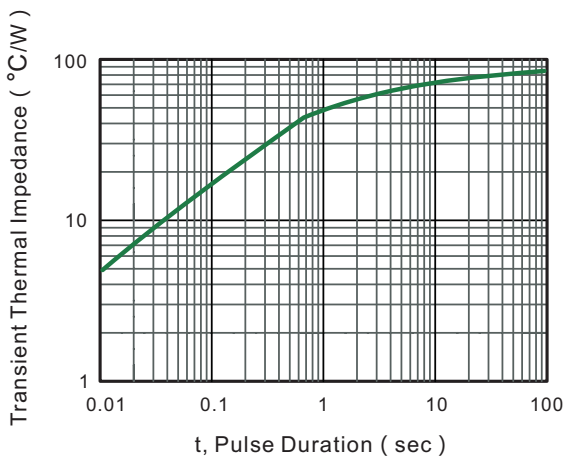
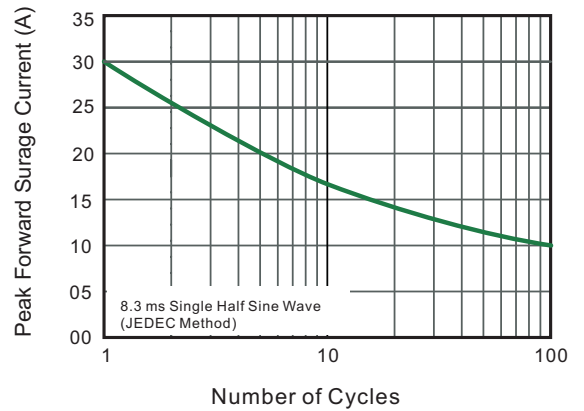
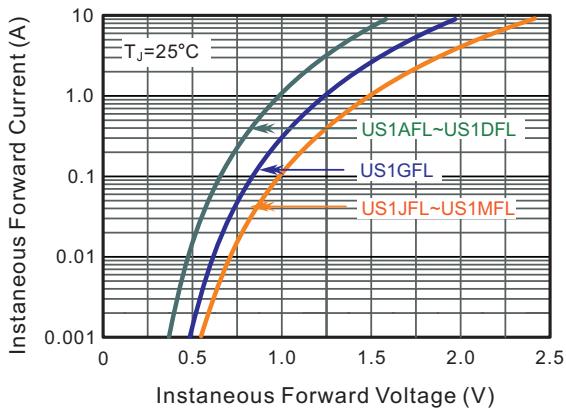
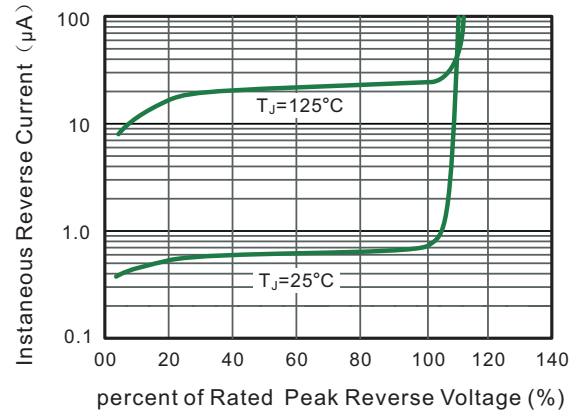
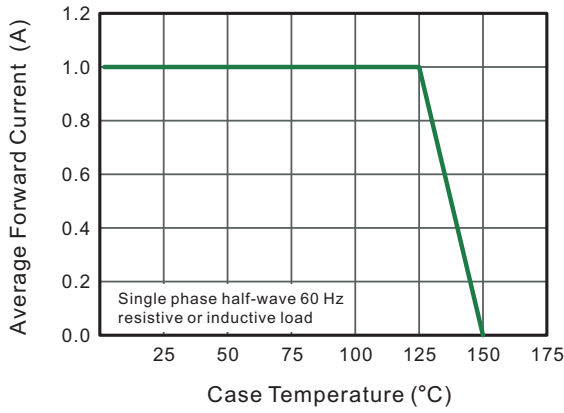
1. Measured at 1 MHz and applied reverse voltage of 4 V D.C
2. P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.
3. Measured with  $I_F = 0.5\text{ A}$ ,  $I_R = 1\text{ A}$ ,  $I_{rr} = 0.25\text{ A}$



# US1AFL~US1MFL

## Surface Mount Superfast Recovery Rectifiers

### Typical Characteristic Curves





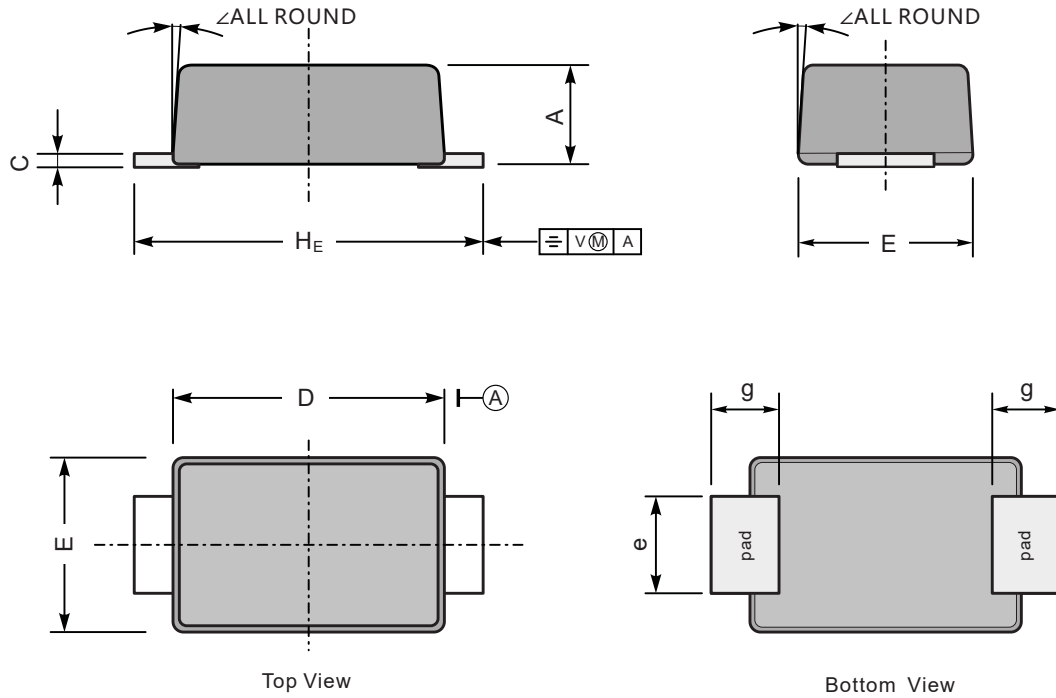
# US1AFL~US1MFL

## Surface Mount Superfast Recovery Rectifiers

### Package Outline

SOD-123FL

Dimensions in mm



| UNIT |     | A   | C    | D   | E   | e   | g   | $H_E$ | $\angle$  |
|------|-----|-----|------|-----|-----|-----|-----|-------|-----------|
| mm   | max | 1.1 | 0.20 | 2.9 | 1.9 | 1.1 | 0.9 | 3.8   | $7^\circ$ |
|      | min | 0.9 | 0.12 | 2.6 | 1.7 | 0.8 | 0.7 | 3.5   |           |
| mil  | max | 43  | 7.9  | 114 | 75  | 43  | 35  | 150   |           |
|      | min | 35  | 4.7  | 102 | 67  | 31  | 28  | 138   |           |