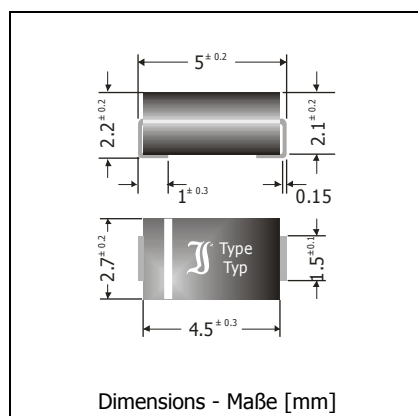


## US1A ... US1M

### Ultrafast Switching Surface Mount Silicon Rectifier Diodes Ultraschnelle Silizium-Gleichrichterdioden für die Oberflächenmontage

Version 2012-10-09



|                                                                                       |                     |
|---------------------------------------------------------------------------------------|---------------------|
| Nominal current – Nennstrom                                                           | 1 A                 |
| Repetitive peak reverse voltage<br>Periodische Spitzensperrspannung                   | 50...1000 V         |
| Plastic case<br>Kunststoffgehäuse                                                     | ~ SMA<br>~ DO-214AC |
| Weight approx. – Gewicht ca.                                                          | 0.07 g              |
| Plastic material has UL classification 94V-0<br>Gehäusematerial UL94V-0 klassifiziert |                     |
| Standard packaging taped and reeled<br>Standard Lieferform gegurtet auf Rolle         |                     |



#### Maximum ratings

#### Grenzwerte

| Type<br>Typ | Repetitive peak reverse voltage<br>Periodische Spitzensperrspannung<br>$V_{RRM}$ [V] | Surge peak reverse voltage<br>Stoßspitzensperrspannung<br>$V_{RSM}$ [V] |
|-------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| US1A        | 50                                                                                   | 50                                                                      |
| US1B        | 100                                                                                  | 100                                                                     |
| US1D        | 200                                                                                  | 200                                                                     |
| US1G        | 400                                                                                  | 400                                                                     |
| US1J        | 600                                                                                  | 600                                                                     |
| US1K        | 800                                                                                  | 800                                                                     |
| US1M        | 1000                                                                                 | 1000                                                                    |

|                                                                                                 |                           |                |                              |
|-------------------------------------------------------------------------------------------------|---------------------------|----------------|------------------------------|
| Max. average forward rectified current, R-load<br>Dauergrenzstrom in Einwegschaltung mit R-Last | $T_T = 100^\circ\text{C}$ | $I_{FAV}$      | 1 A                          |
| Repetitive peak forward current<br>Periodischer Spitzenstrom                                    | $f > 15 \text{ Hz}$       | $I_{FRM}$      | 6 A <sup>1)</sup>            |
| Peak forward surge current, 50 Hz half sine-wave<br>Stoßstrom für eine 50 Hz Sinus-Halbwelle    | $T_A = 25^\circ\text{C}$  | $I_{FSM}$      | 30 A                         |
| Rating for fusing, $t < 10 \text{ ms}$<br>Grenzlastintegral, $t < 10 \text{ ms}$                | $T_A = 25^\circ\text{C}$  | $i^2t$         | 4.5 A <sup>2</sup> s         |
| Junction temperature – Sperrschichttemperatur<br>Storage temperature – Lagerungstemperatur      |                           | $T_j$<br>$T_s$ | -50...+150°C<br>-50...+150°C |

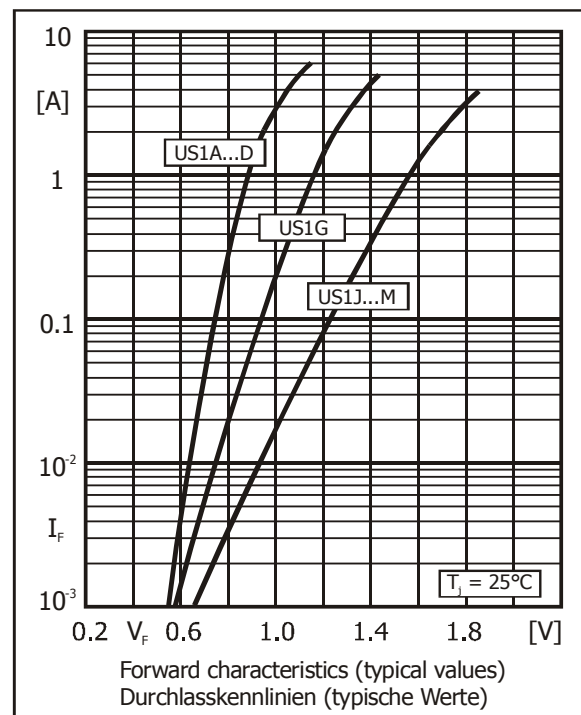
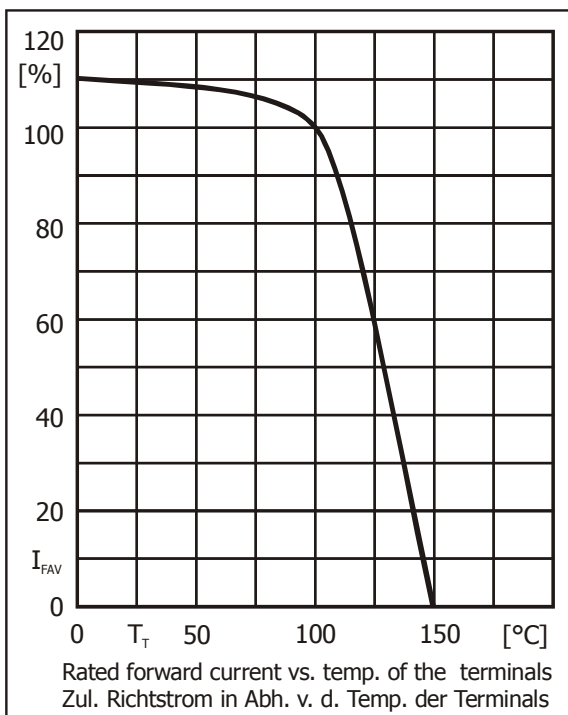
1 Max. temperature of the terminals  $T_T = 100^\circ\text{C}$  – Max. Temperatur der Anschlüsse  $T_T = 100^\circ\text{C}$

# Characteristics

# Kennwerte

| Type<br>Typ | Reverse recovery time<br>Sperrverzugszeit<br>$t_{rr}$ [ns] <sup>1)</sup> | Forward voltage<br>Durchlass-Spannung<br>$V_F$ [V] at / bei $I_F$ [A] |
|-------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------|
| US1A...US1D | < 50                                                                     | < 1.0 1                                                               |
| US1G        | < 50                                                                     | < 1.25 1                                                              |
| US1J...US1M | < 75                                                                     | < 1.7 1                                                               |

|                                                                                             |                                                                                       |                |                                          |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|------------------------------------------|
| Leakage current<br>Sperrstrom                                                               | $T_j = 25^\circ\text{C}$ $V_R = V_{RRM}$<br>$T_j = 100^\circ\text{C}$ $V_R = V_{RRM}$ | $I_R$<br>$I_R$ | < 5 $\mu\text{A}$<br>< 100 $\mu\text{A}$ |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft |                                                                                       | $R_{thA}$      | < 70 K/W <sup>2)</sup>                   |
| Thermal resistance junction to terminal<br>Wärmewiderstand Sperrschicht – Anschluss         |                                                                                       | $R_{thT}$      | < 30 K/W                                 |



- $I_F = 0.5$  A through/über  $I_R = 1$  A to/auf  $I_R = 0.25$  A
- Mounted on P.C. board with 25 mm<sup>2</sup> copper pads at each terminal  
Montage auf Leiterplatte mit 25 mm<sup>2</sup> Kupferbelag (Lötpad) an jedem Anschluss