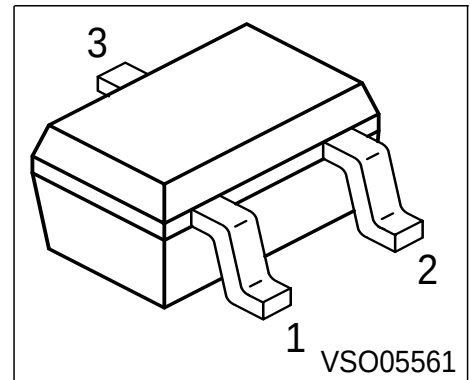


## Silicon Schottky Diodes

- For low-loss, fast-recovery, meter protection, bias isolation and clamping applications
- Integrated diffused guard ring
- Low forward voltage

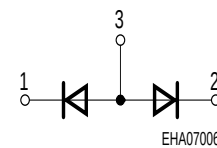
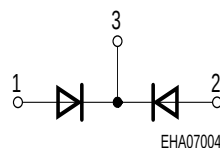
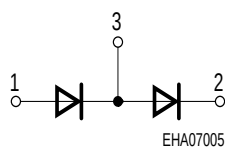
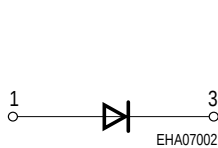


### BAS125W

### BAS125-04W

### BAS125-05W

### BAS125-06W



**ESD:** Electrostatic discharge sensitive device, observe handling precaution!

| Type       | Marking | Pin Configuration |        |           | Package |
|------------|---------|-------------------|--------|-----------|---------|
| BAS125-04W | 13s     | 1 = A             | 2 n.c. | 3 = C     | SOT323  |
| BAS125-05W | 14s     | 1 = A1            | 2 = C2 | 3 = C1/A2 | SOT323  |
| BAS125-06W | 15s     | 1 = A1            | 2 = A2 | 3 = C1/2  | SOT323  |
| BAS125W    | 16s     | 1 = C1            | 2 = C2 | 3 = A1/2  | SOT323  |

## Maximum Ratings

| Parameter                                                         | Symbol    | Value       | Unit             |
|-------------------------------------------------------------------|-----------|-------------|------------------|
| Diode reverse voltage                                             | $V_R$     | 25          | V                |
| Forward current                                                   | $I_F$     | 100         | mA               |
| Surge forward current ( $t < 100\mu s$ )                          | $I_{FSM}$ | 500         |                  |
| Total power dissipation BAS125W, $T_S = 93\text{ }^\circ\text{C}$ | $P_{tot}$ | 250         | mW               |
| BAS 125-04W...06W, $T_S = 84\text{ }^\circ\text{C}$               | $P_{tot}$ | 250         |                  |
| Junction temperature                                              | $T_j$     | 150         | $^\circ\text{C}$ |
| Operating temperature range                                       | $T_{op}$  | -55 ... 150 |                  |
| Storage temperature                                               | $T_{stg}$ | -55 ... 150 |                  |

## Thermal Resistance

|                                          |            |            |     |
|------------------------------------------|------------|------------|-----|
| Junction - soldering point <sup>1)</sup> | $R_{thJS}$ |            | K/W |
| BAS125W                                  |            | $\leq 230$ |     |
| BAS125-04W...06W                         |            | $\leq 265$ |     |

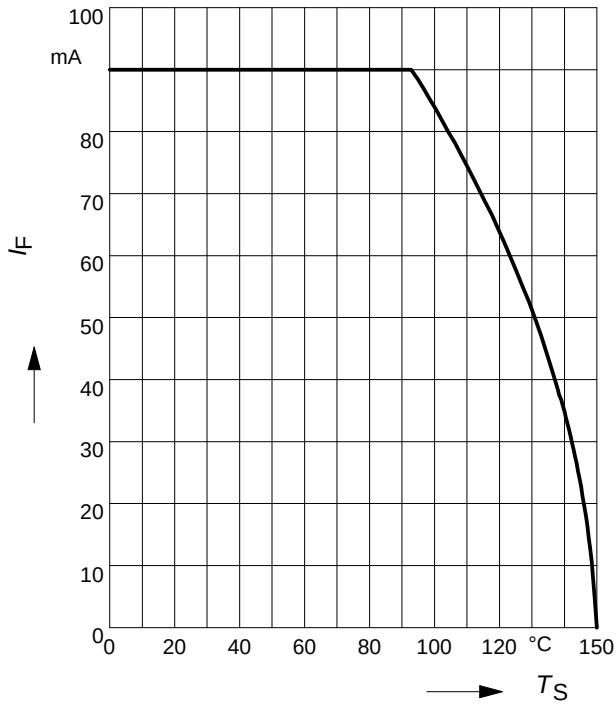
<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

| Parameter                                                                              | Symbol | Values      |                   |                   | Unit     |
|----------------------------------------------------------------------------------------|--------|-------------|-------------------|-------------------|----------|
|                                                                                        |        | min.        | typ.              | max.              |          |
| DC characteristics                                                                     |        |             |                   |                   |          |
| Reverse current<br>$V_R = 20\text{ V}$<br>$V_R = 25\text{ V}$                          | $I_R$  | -<br>-      | -<br>-            | 100<br>150        | nA       |
| Forward voltage<br>$I_F = 1\text{ mA}$<br>$I_F = 10\text{ mA}$<br>$I_F = 35\text{ mA}$ | $V_F$  | -<br>-<br>- | 385<br>530<br>800 | 400<br>650<br>950 | mV       |
| AC characteristics                                                                     |        |             |                   |                   |          |
| Diode capacitance<br>$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$                           | $C_T$  | -           | -                 | 1.1               | pF       |
| Differential forward resistance<br>$I_F = 5\text{ mA}$ , $f = 10\text{ kHz}$           | $R_f$  | -           | 16                | -                 | $\Omega$ |

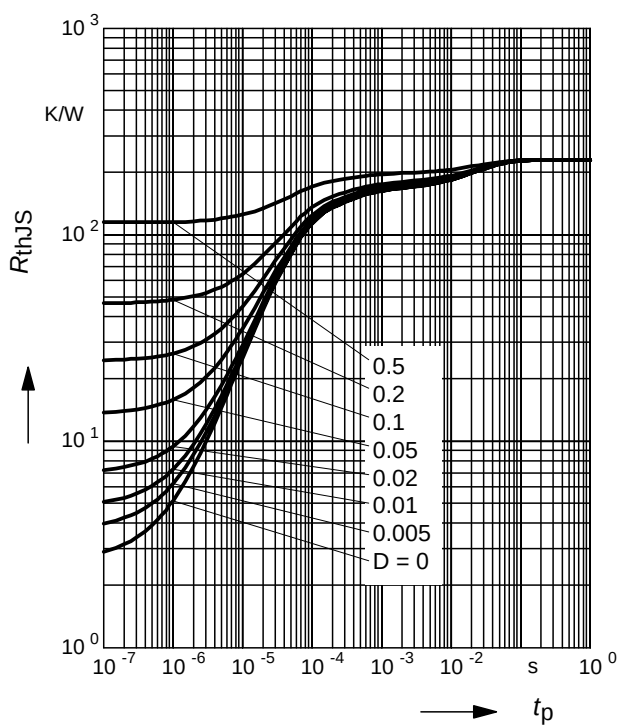
### Forward current $I_F = f(T_S)$

BAS125W



### Permissible Pulse Load $R_{thJS} = f(t_p)$

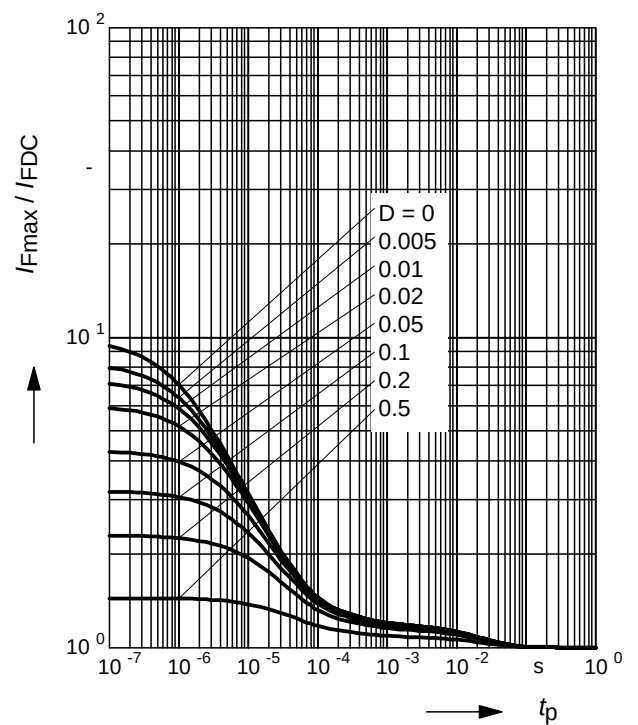
BAS125W



### Permissible Pulse Load

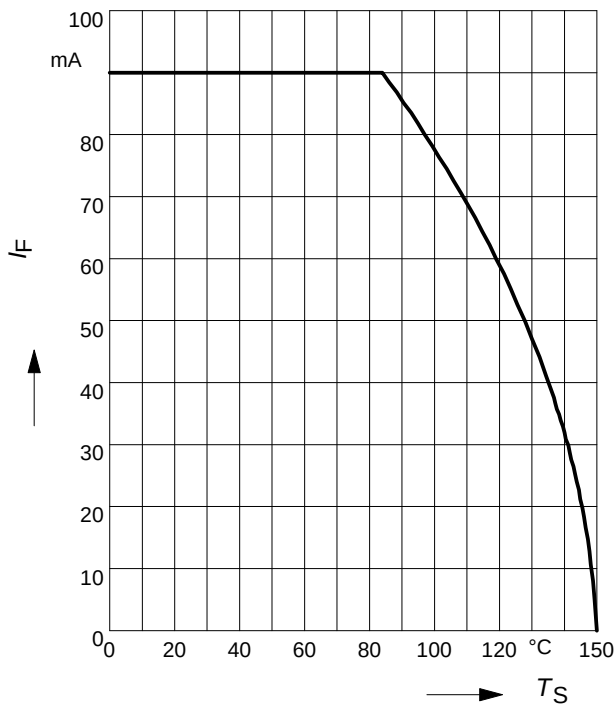
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAS125W



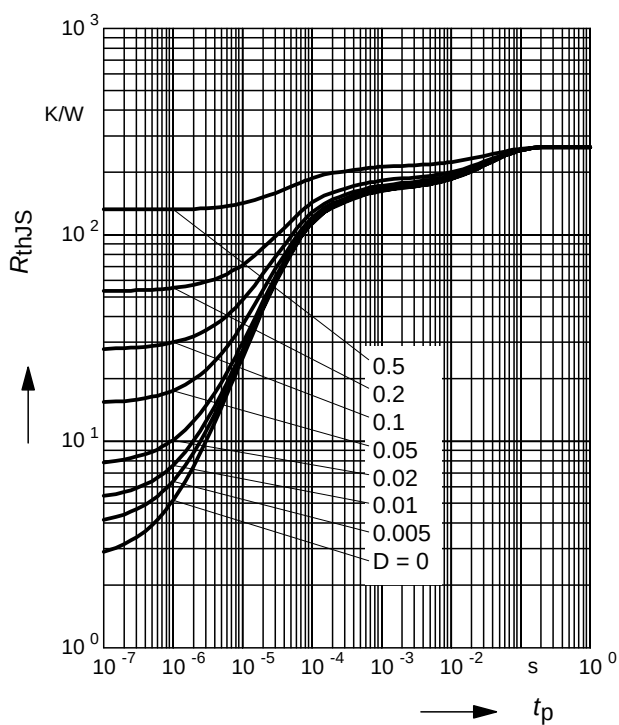
**Forward current  $I_F = f(T_S)$**

BAS125-04W...06W ( $I_F$  per diode)



**Permissible Pulse Load  $R_{thJS} = f(t_p)$**

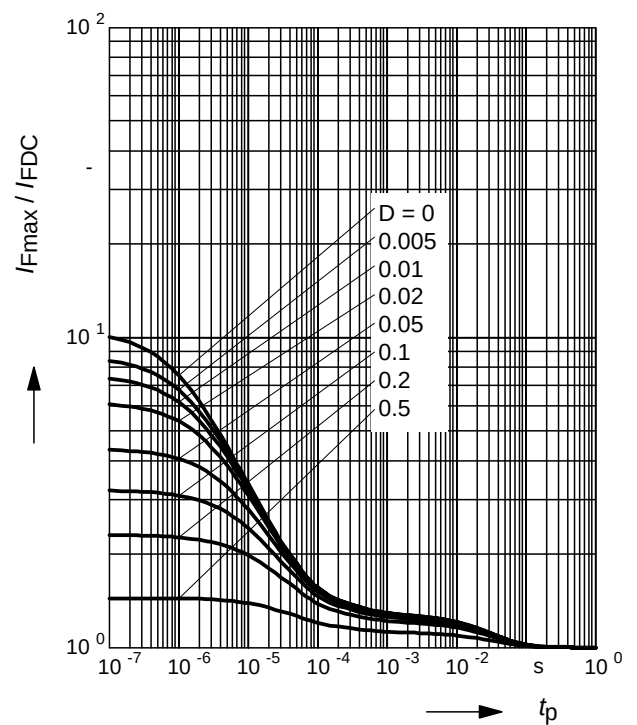
BAS125-04W...06W



**Permissible Pulse Load**

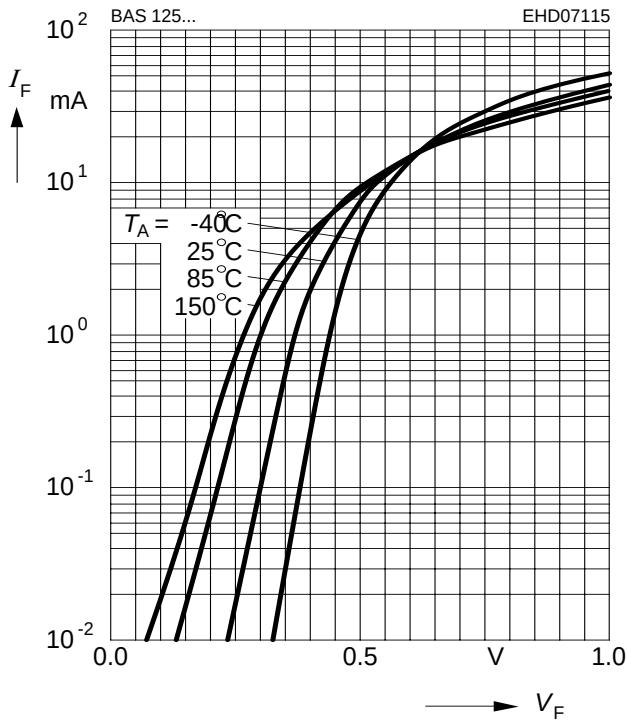
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS125-04W...06W



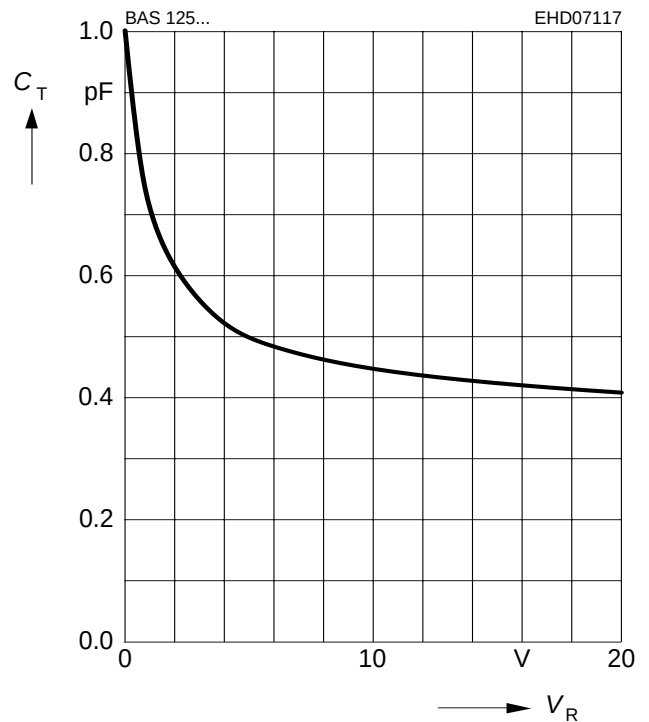
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



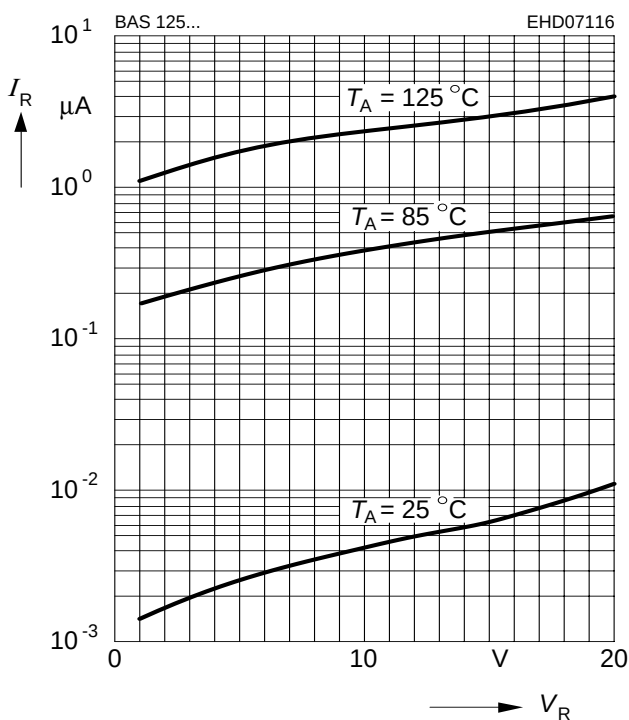
**Diode capacitance  $C_T = f(V_R)$**

$f = 1 \text{ MHz}$



**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



**Differential forward resistance  $r_f = f(I_F)$**

$f = 10 \text{ kHz}$

