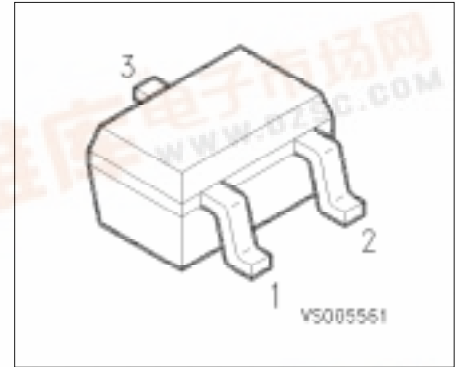


# SIEMENS

## Silicon Schottky Diode

## BAS 40W

- General-purpose diodes for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing



| Type       | Ordering Code<br>(tape and reel) | Pin Configuration |    |       | Marking | Package <sup>1)</sup> |
|------------|----------------------------------|-------------------|----|-------|---------|-----------------------|
|            |                                  | 1                 | 2  | 3     |         |                       |
| BAS 40-04W | Q62702-A1065                     | A1                | C1 | C1/A2 | 44s     | SOT-323               |
| BAS 40-05W | Q62702-A1066                     | A1                | A2 | C1/C2 | 45s     |                       |
| BAS 40-06W | Q62702-A1067                     | C1                | C2 | A1/A2 | 46s     |                       |

## Maximum Ratings

| Parameter                                 | Symbol    | Values         | Unit |
|-------------------------------------------|-----------|----------------|------|
| Reverse voltage                           | $V_R$     | 40             | V    |
| Forward current                           | $I_F$     | 120            | mA   |
| Surge forward current, $t \leq 10$ ms     | $I_{FSM}$ | 200            | mA   |
| Total power dissipation $T_S \leq 106$ °C | $P_{tot}$ | 250            | mW   |
| Junction temperature                      | $T_j$     | 150            | °C   |
| Operating temperature range               | $T_{op}$  | - 55 ... + 150 | °C   |
| Storage temperature range                 | $T_{stg}$ | - 55 ... + 150 | °C   |

## Thermal Resistance

|                                |             |            |     |
|--------------------------------|-------------|------------|-----|
| Junction-ambient <sup>2)</sup> | $R_{th JA}$ | $\leq 395$ | K/W |
| Junction-soldering point       | $R_{th JS}$ | $\leq 175$ | K/W |

<sup>1)</sup> For detailed information see chapter Package Outlines.

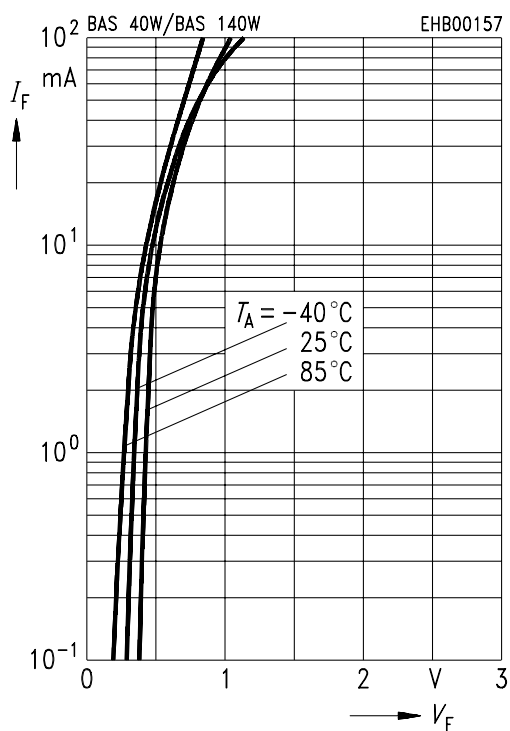
<sup>2)</sup> Package mounted on an epoxy pcb 40 mm x 40 mm x 1.5 mm/1 cm<sup>2</sup> Cu.

## Electrical Characteristics

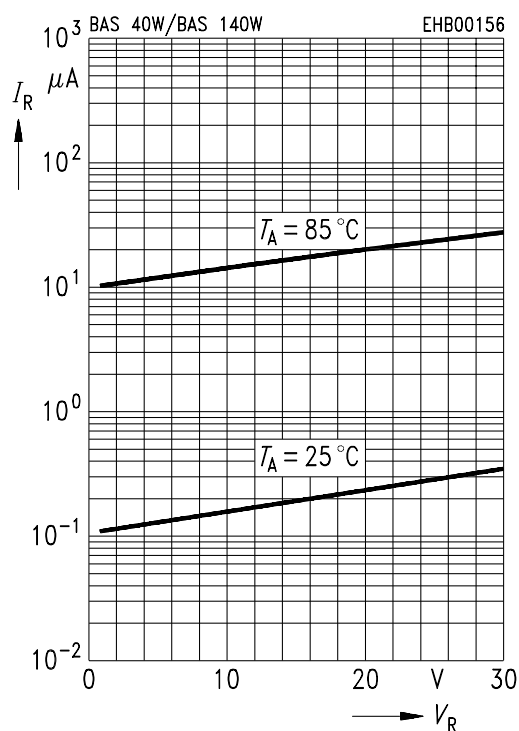
at  $T_A = 25\text{ °C}$ , unless otherwise specified.

| Parameter                                                                              | Symbol     | Value             |                   |                    | Unit          |
|----------------------------------------------------------------------------------------|------------|-------------------|-------------------|--------------------|---------------|
|                                                                                        |            | min.              | typ.              | max.               |               |
| DC Characteristics                                                                     |            |                   |                   |                    |               |
| Breakdown voltage<br>$I_{(BR)} = 10\text{ }\mu\text{A}$                                | $V_{(BR)}$ | 40                | –                 | –                  | V             |
| Forward voltage<br>$I_F = 1\text{ mA}$<br>$I_F = 10\text{ mA}$<br>$I_F = 15\text{ mA}$ | $V_F$      | 250<br>350<br>600 | 310<br>450<br>720 | 380<br>500<br>1000 | mV            |
| Reverse current<br>$V_R = 30\text{ V}$<br>$V_R = 40\text{ V}$                          | $I_R$      | –<br>–            | –<br>–            | 1<br>10            | $\mu\text{A}$ |
| Diode capacitance<br>$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$                           | $C_T$      | –                 | 3                 | 5                  | pF            |
| Charge carrier life time $I_F = 25\text{ mA}$                                          | $\tau$     | –                 | 10                | –                  | ps            |
| Differential forward resistance<br>$I_F = 10\text{ mA}$ , $f = 10\text{ kHz}$          | $R_F$      | –                 | 10                | –                  | $\Omega$      |
| Series inductance                                                                      | $L_S$      | –                 | 2                 | –                  | nH            |

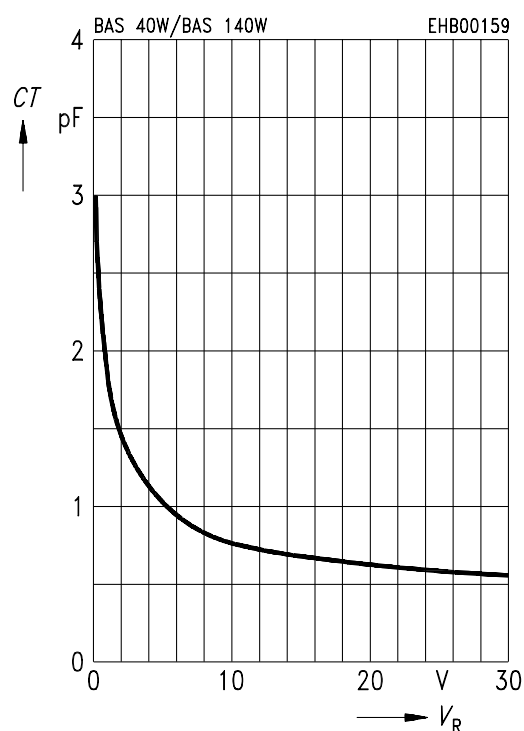
**Forward current  $I_F = f(V_F)$**



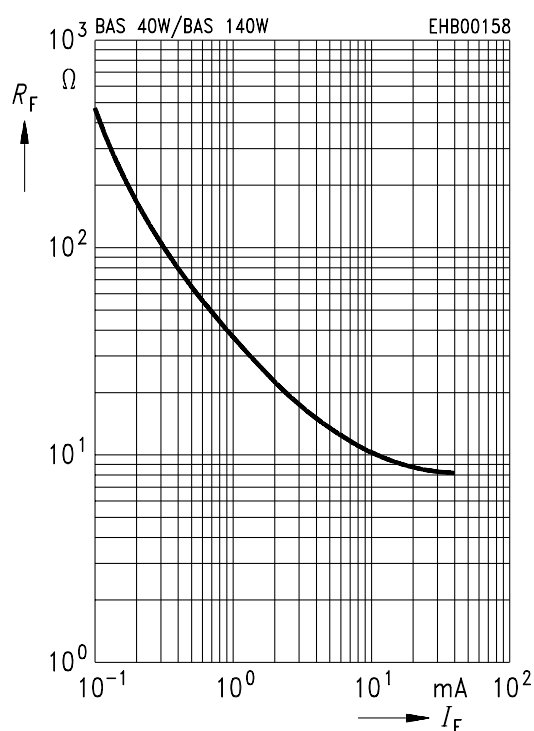
**Reverse current  $I_R = f(V_R)$**



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

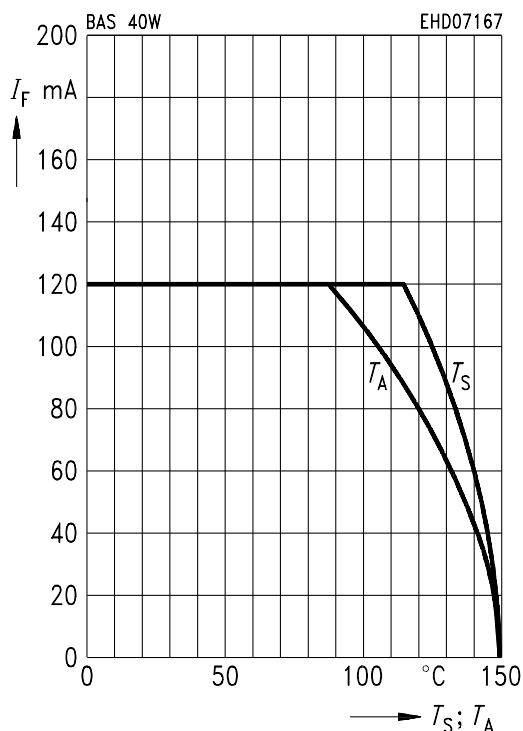


**Differential forward resistance  $R_F = f(I_F)$**

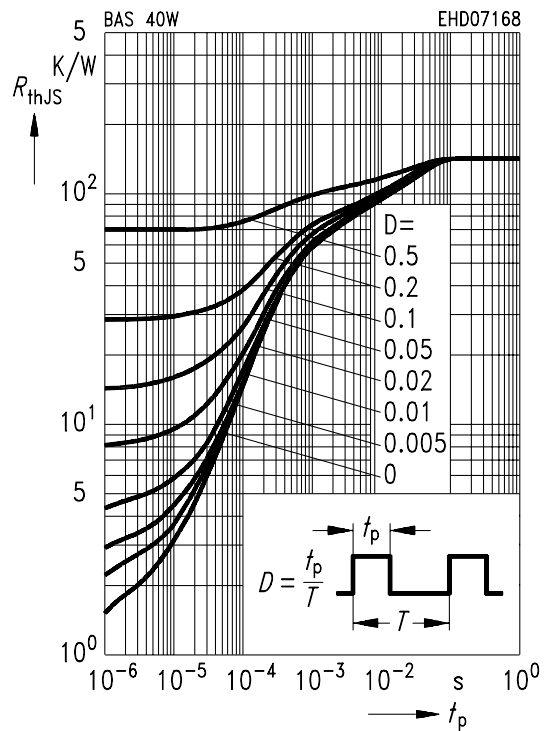


**Forward current**  $I_F = f(T_A; T_S^*)$

\*Package mounted on epoxy



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



**Permissible Pulse load**  $I_{Fmax}/I_{FDC} = f(t_p)$

