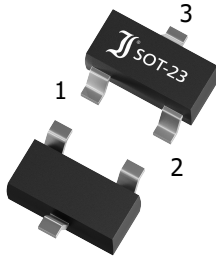


**BAS40, BAS40-04, BAS40-05, BAS40-06**
**SMD Small Signal Schottky Diodes**  
**SMD Kleinsignal-Schottky-Dioden**
 $I_{FAV} = 200 \text{ mA}$   
 $V_{F1mA} < 0.38 \text{ V}$   
 $T_{jmax} = 150^\circ\text{C}$ 
 $V_{RRM} = 40 \text{ V}$   
 $I_{FSM} = 600 \text{ mA}$   
 $t_{rr} < 5 \text{ ns}$ 

Version 2024-03-15

**SOT-23**  
TO-236
SPICE Model & STEP File <sup>1)</sup>**Marking Code**

See below 'XX' | Siehe unten 'XX'

**HS Code** 85411000**Typical Applications**

Signal processing, High-speed switching, Polarity protection  
 Suffix -C: Commercial grade <sup>1)</sup>  
 No suffix: Industrial grade <sup>1)</sup>  
 Suffix -Q: AEC-Q101 compliant <sup>1)</sup>  
 Suffix -AQ: AEC-Q101 qualified <sup>1)</sup>

**Features**

Very high switching speed  
 Low junction capacitance  
 Low leakage current  
 Compliant to RoHS (w/o exemp.), REACH, Conflict Minerals <sup>1)</sup>

**Mechanical Data <sup>1)</sup>**

Taped and reeled  
 Weight approx.  
 Solder & assembly conditions



3000 / 7"  
 0.01 g  
 260°C/10s  
 MSL = 1

**Typische Anwendungen**

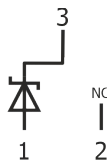
Signalverarbeitung, Schnelles Schalten, Verpolschutz  
 Suffix -C: Standardausführung <sup>1)</sup>  
 Kein Suffix: Industriequalität <sup>1)</sup>  
 Suffix -Q: AEC-Q101 konform <sup>1)</sup>  
 Suffix -AQ: AEC-Q101 qualifiziert <sup>1)</sup>

**Besonderheiten**

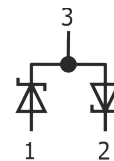
Extrem schnelles Schalten  
 Niedrige Sperrschicht-Kapazität  
 Niedriger Sperrstrom  
 Konform zu RoHS (ohne Ausn.), REACH, Konfliktmineralien <sup>1)</sup>

**Mechanische Daten <sup>1)</sup>**

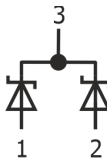
Gegurtet auf Rolle  
 Gewicht ca.  
 Löt- und Einbaubedingungen

**BAS40/-Q/-AQ**  
'43'


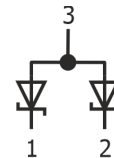
Single Diode

**BAS40-04/-Q/-AQ**  
'44'


Series Connection

**BAS40-05/-Q**  
'45'


Common Cathode

**BAS40-06/-C**  
'46'


Common Anode

**Maximum ratings <sup>1)</sup>****Grenzwerte <sup>2)</sup>**

|                                                                    |                                                        |           |                                              |
|--------------------------------------------------------------------|--------------------------------------------------------|-----------|----------------------------------------------|
| Power dissipation – Verlustleistung <sup>2)</sup>                  | Commercial (-C)<br>Industrial (-I) / AEC-Q101 (-Q/-AQ) | $P_{tot}$ | 200 mW <sup>3)</sup><br>310 mW <sup>3)</sup> |
| Max. average forward current – Dauergrenzstrom                     | DC                                                     | $I_{FAV}$ | 200 mA <sup>4)</sup>                         |
| Repetitive peak forward current – Periodischer Spitzenstrom        |                                                        | $I_{FRM}$ | 300 mA <sup>4)</sup>                         |
| Non repetitive peak forward surge current – Stoßstrom-Grenzwert    | $t_p \leq 1 \text{ s}$                                 | $I_{FSM}$ | 600 mA                                       |
| Repetitive peak reverse voltage – Periodische Spitzensperrspannung |                                                        | $V_{RRM}$ | 40 V                                         |
| Reverse voltage – Sperrspannung                                    | DC                                                     | $V_R$     | 40 V                                         |
| Junction temperature – Sperrschichttemperatur                      | Commercial (-C)<br>Industrial (-I) / AEC-Q101 (-Q/-AQ) | $T_j$     | -55...+125°C<br>-55...+150°C                 |
| Storage temperature – Lagerungstemperatur                          |                                                        | $T_s$     | -55...+150°C                                 |

1 Please note the [detailed information on our website](#) or at the beginning of the data bookBitte beachten Sie die [detaillierten Hinweise auf unserer Internetseite](#) bzw. am Anfang des Datenbuches1  $T_A = 25^\circ\text{C}$  and per diode, unless otherwise specified –  $T_A = 25^\circ\text{C}$  und pro Diode, wenn nicht anders angegeben

2 Total power dissipation per device (single or both diodes loaded)

Gesamtverlustleistung pro Bauteil (eine oder beide Dioden belastet)

3 Mounted on PCB with 3 mm<sup>2</sup> copper pad per each terminal – Montage auf Leiterplatte mit 3 mm<sup>2</sup> Lötpad je Anschluss

# Characteristics

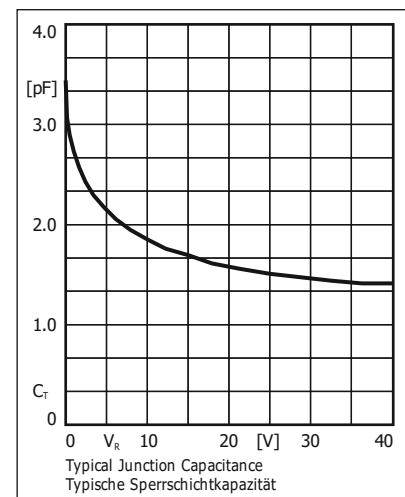
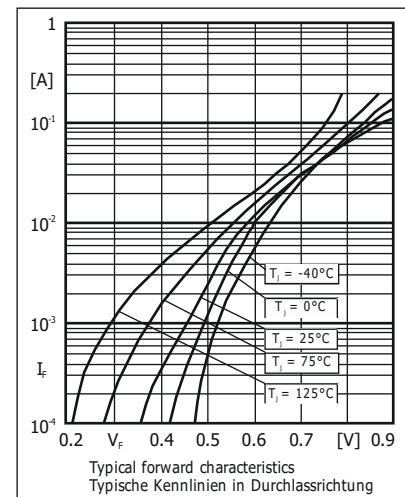
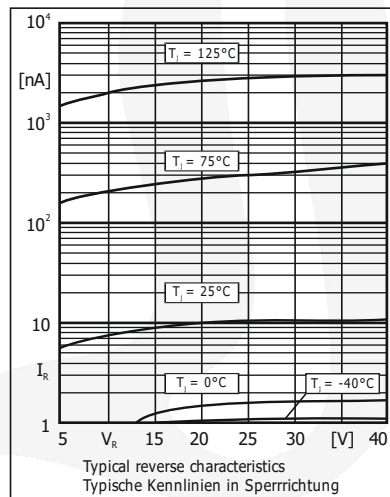
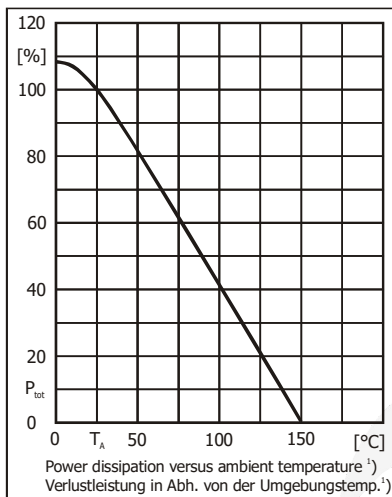
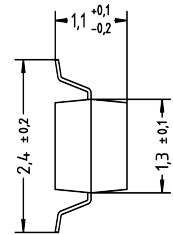
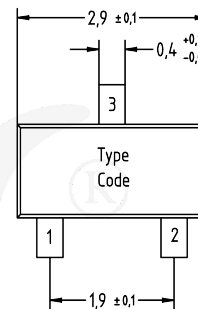
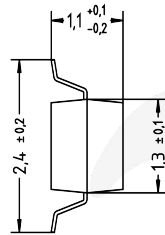
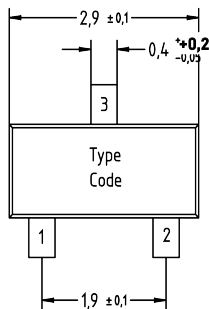
# Kennwerte

|                                                                                                     |                                                                                   |                                             |           |                                                |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|-----------|------------------------------------------------|
| Forward voltage<br>Durchlass-Spannung                                                               | $T_J = 25^\circ\text{C}$                                                          | $I_F = 1\text{ mA}$<br>$I_F = 40\text{ mA}$ | $V_F$     | $< 380\text{ mV}$<br>$< 1000\text{ mV}$        |
| Leakage current – Sperrstrom                                                                        | $T_J = 25^\circ\text{C}$                                                          | $V_R = 30\text{ V}$                         | $I_R$     | $< 200\text{ nA}^{1)}$                         |
| Breakdown voltage – Abbruch-Spannung                                                                | $T_J = 25^\circ\text{C}$                                                          | $I_R = 10\text{ }\mu\text{A}$               | $V_{BR}$  | $> 40\text{ V}^{1)}$                           |
| Junction capacitance – Sperrschichtkapazität                                                        | $V_R = 0\text{ V}, f = 1\text{ MHz}$                                              |                                             | $C_T$     | $< 5\text{ pF}$                                |
| Reverse recovery time – Sperrverzug                                                                 | $I_F = 10\text{ mA} \rightarrow I_R = 10\text{ mA} \rightarrow I_R = 1\text{ mA}$ |                                             | $t_{rr}$  | $< 5\text{ ns}$                                |
| Typical thermal resistance junction to ambient<br>Typischer Wärmewiderstand Sperrschicht – Umgebung | Commercial (-C)<br>Industrial (-I) / AEC-Q101 (-Q/-AQ)                            |                                             | $R_{thA}$ | $500\text{ K/W}^{2)}$<br>$400\text{ K/W}^{2)}$ |

## Commercial grade (-C)

## Dimensions – Maße [mm]

## Industrial (-I) / AEC-Q101 grade (-Q / -AQ)



**Disclaimer:** See data book page 2 or [website](#)

**Haftungsschluss:** Siehe Datenbuch Seite 2 oder [Internet](#)

1 Tested with pulses  $t_p = 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$  – Gemessen mit Impulsen  $t_p = 300\text{ }\mu\text{s}$ , Schaltverhältnis  $\leq 2\%$

2 Per device, mounted on PCB with  $3\text{ mm}^2$  copper pad per terminal – Pro Bauteil, Montage mit  $3\text{ mm}^2$  Lötpad je Anschluss