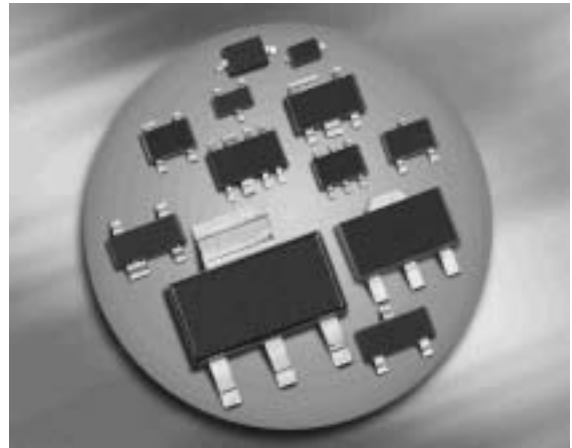
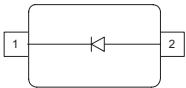


**Silicon Schottky Diode**

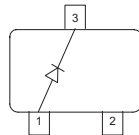
- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing



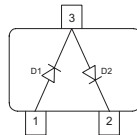
**BAS140W**  
**BAS40-02L**



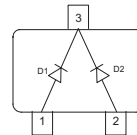
**BAS40**



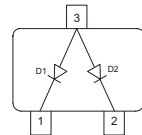
**BAS40-04**



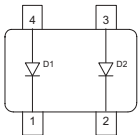
**BAS40-05**  
**BAS40-05W**



**BAS40-06**  
**BAS40-06W**



**BAS40-07**  
**BAS40-07W**



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

| Type      | Package  | Configuration    | $L_S$ (nH) | Marking |
|-----------|----------|------------------|------------|---------|
| BAS140W   | SOD323   | single           | 1.8        | white 4 |
| BAS40     | SOT23    | single           | 1.8        | 43s     |
| BAS40-02L | TSLP-2-1 | single, leadless | 0.4        | FF      |
| BAS40-04  | SOT23    | series           | 1.8        | 44s     |
| BAS40-05  | SOT23    | common cathode   | 1.8        | 45s     |
| BAS40-05W | SOT323   | common cathode   | 1.4        | 45s     |
| BAS40-06  | SOT23    | common anode     | 1.8        | 46s     |
| BAS40-06W | SOT323   | common anode     | 1.4        | 46s     |
| BAS40-07  | SOT143   | parallel pair    | 2          | 47s     |
| BAS40-07W | SOT343   | parallel pair    | 1.6        | 47s     |

**Maximum Ratings at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

| Parameter   | Symbol    | Value  | Unit |
|---|-----------|--|------|
| Diode reverse voltage   | $V_R$     | 40   | V    |
| Forward current   | $I_F$     | 120  | mA   |
| Non-repetitive peak surge forward current<br>$t \leq 10\text{ms}$   | $I_{FSM}$ | 200  |      |
| Total power dissipation<br>BAS140W, $T_S \leq 113^\circ\text{C}$<br>BAS40, BAS40-07, $T_S \leq 81^\circ\text{C}$<br>BAS40-02L, $T_S \leq 127^\circ\text{C}$<br>BAS40-04, BAS40-06, $T_S \leq 56^\circ\text{C}$<br>BAS40-06W, $T_S \leq 106^\circ\text{C}$<br>BAS40-05, $T_S \leq 31^\circ\text{C}$<br>BAS40-05W, $T_S \leq 98^\circ\text{C}$<br>BAS40-07W, $T_S \leq 118^\circ\text{C}$ | $P_{tot}$ | 250<br>250<br>250<br>250<br>250<br>250<br>250<br>250 | mW   |
| Junction temperature  | $T_j$     | 150  | °C   |
| Operating temperature range   | $T_{op}$  | -55 ... 125  |      |
| Storage temperature   | $T_{stg}$ | -55 ... 150  |      |

**Thermal Resistance**

| Parameter  | Symbol     | Value   | Unit |
|--|------------|---|------|
| Junction - soldering point <sup>1)</sup><br>BAS140W<br>BAS40, BAS40-07<br>BAS40-02L<br>BAS40-04, BAS40-06<br>BAS40-06W<br>BAS40-05<br>BAS40-05W<br>BAS40-07W | $R_{thJS}$ | $\leq 150$<br>$\leq 275$<br>$\leq 90$<br>$\leq 375$<br>$\leq 175$<br>$\leq 475$<br>$\leq 205$<br>$\leq 125$ | K/W  |

<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.               |               |
| <b>DC Characteristics</b>   |              |                   |                   |                    |               |
| Breakdown voltage<br>$I_{(BR)} = 10 \mu\text{A}$  | $V_{(BR)}$   | 40                | -                 | -                  | V             |
| Reverse current<br>$V_R = 30 \text{ V}$   | $I_R$        | -                 | -                 | 1                  | $\mu\text{A}$ |
| Forward voltage<br>$I_F = 1 \text{ mA}$<br>$I_F = 10 \text{ mA}$<br>$I_F = 40 \text{ mA}$ | $V_F$        | 250<br>350<br>600 | 310<br>450<br>720 | 380<br>500<br>1000 | mV            |
| Forward voltage matching <sup>1)</sup><br>$I_F = 10 \text{ mA}$                           | $\Delta V_F$ | -                 | -                 | 20                 |               |

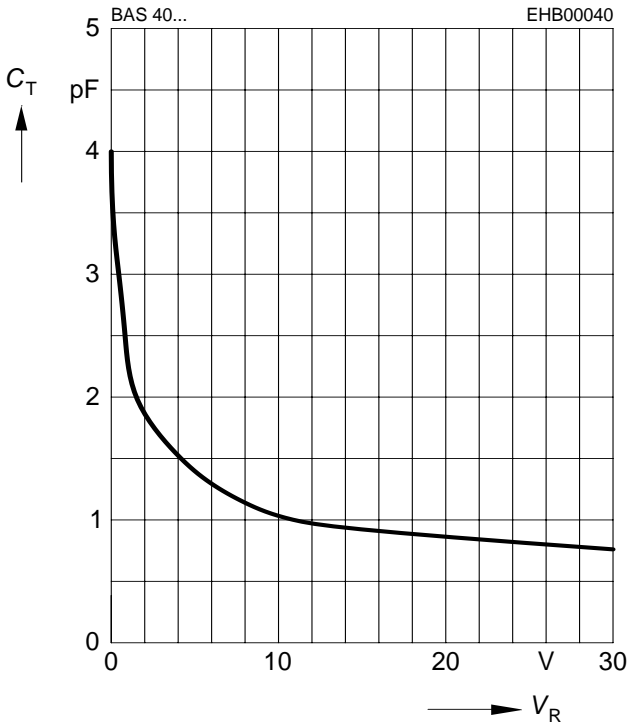
**AC Characteristics**

|  |             |   |    |     |          |
|--|-------------|---|----|-----|----------|
| Diode capacitance<br>$V_R = 0, f = 1 \text{ MHz}$                            | $C_T$       | - | 3  | 5   | pF       |
| Differential forward resistance<br>$I_F = 10 \text{ mA}, f = 10 \text{ kHz}$ | $R_F$       | - | 10 | -   | $\Omega$ |
| Charge carrier life time<br>$I_F = 25 \text{ mA}$                            | $\tau_{rr}$ | - | -  | 100 | ps       |

<sup>1)</sup> $\Delta V_F$  is the difference between lowest and highest  $V_F$  in a multiple diode component.

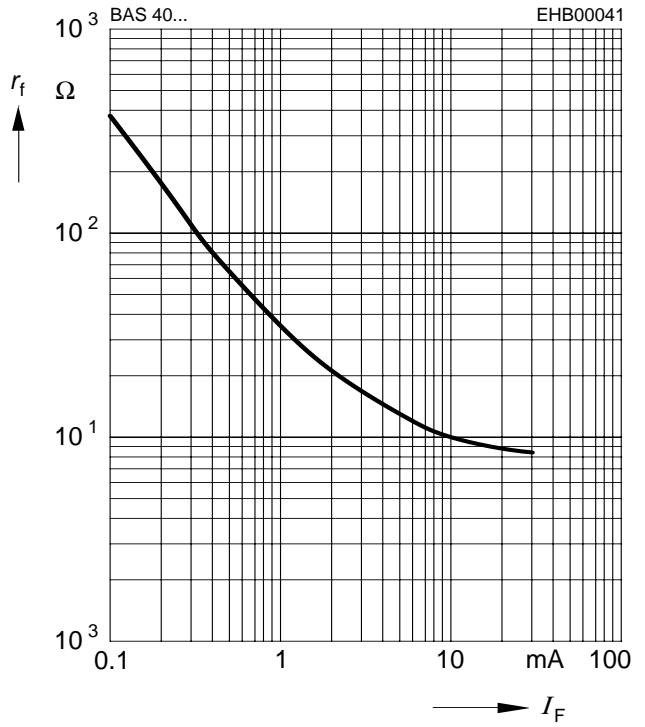
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



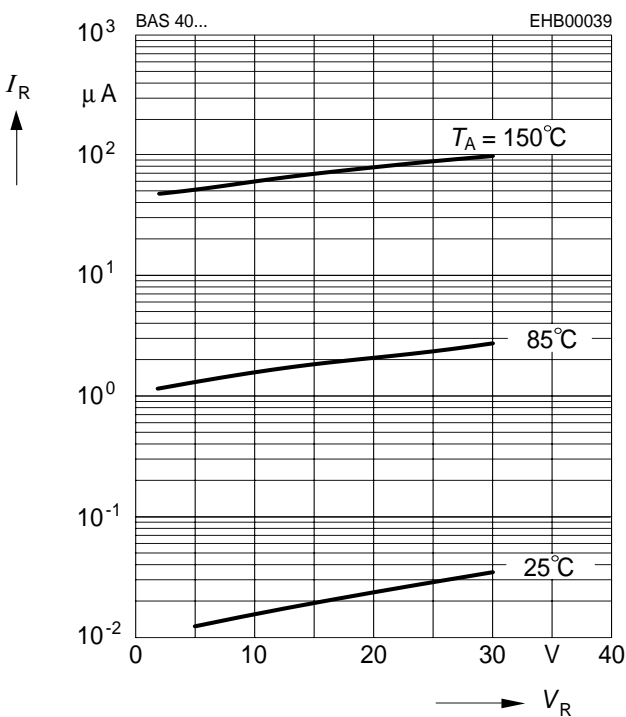
**Forward resistance  $r_f = f(I_F)$**

$f = 10\text{kHz}$



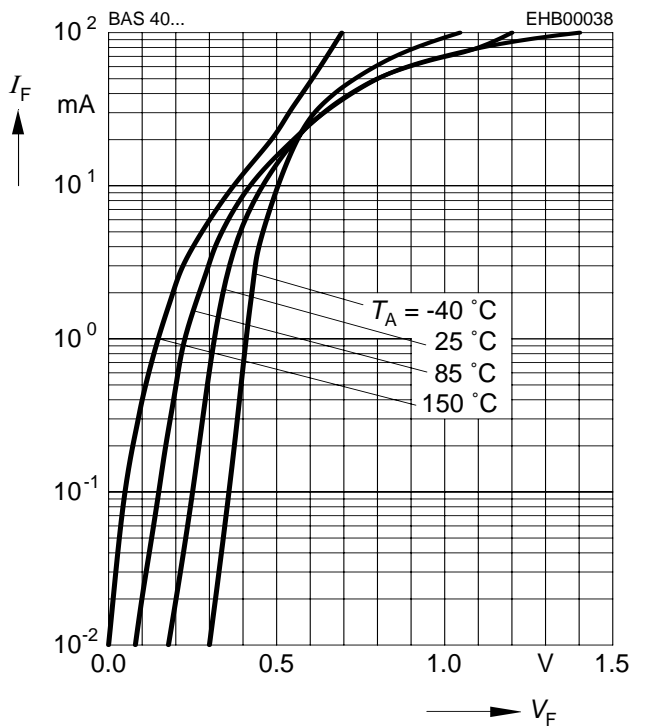
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



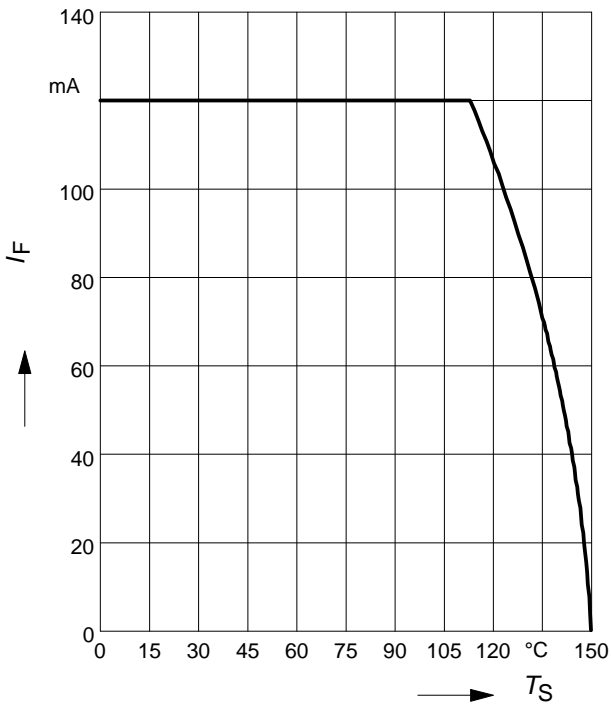
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



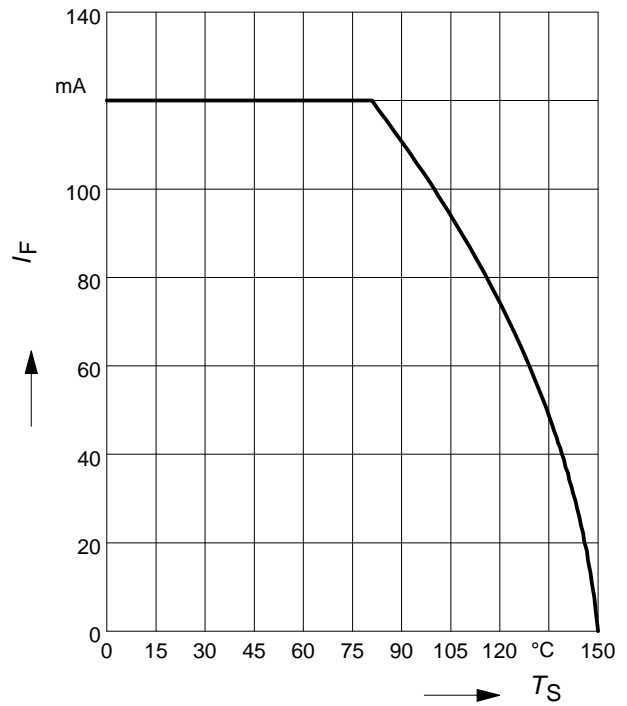
Forward current  $I_F = f(T_S)$

BAS140W



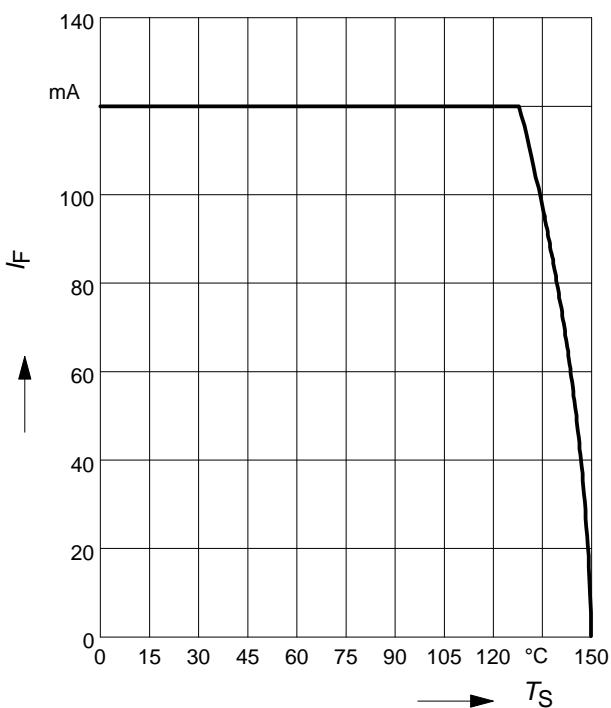
Forward current  $I_F = f(T_S)$

BAS40, BAS40-07



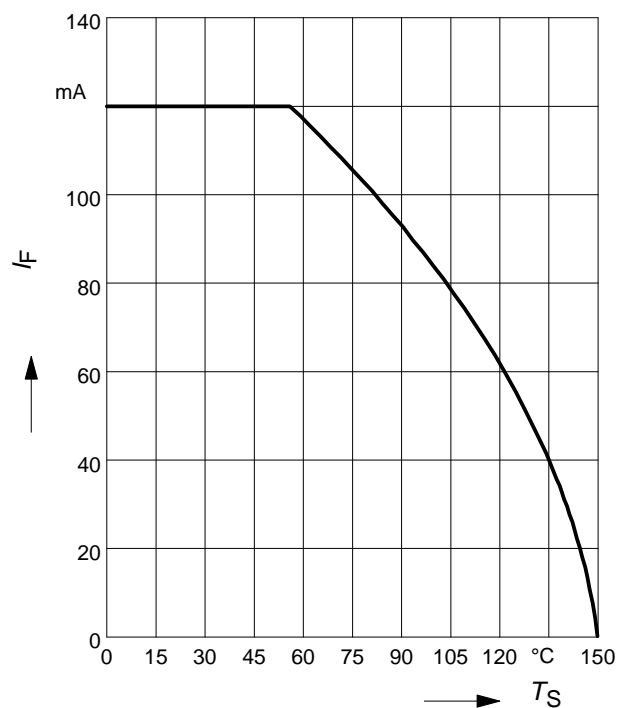
Forward current  $I_F = f(T_S)$

BAS40-02L



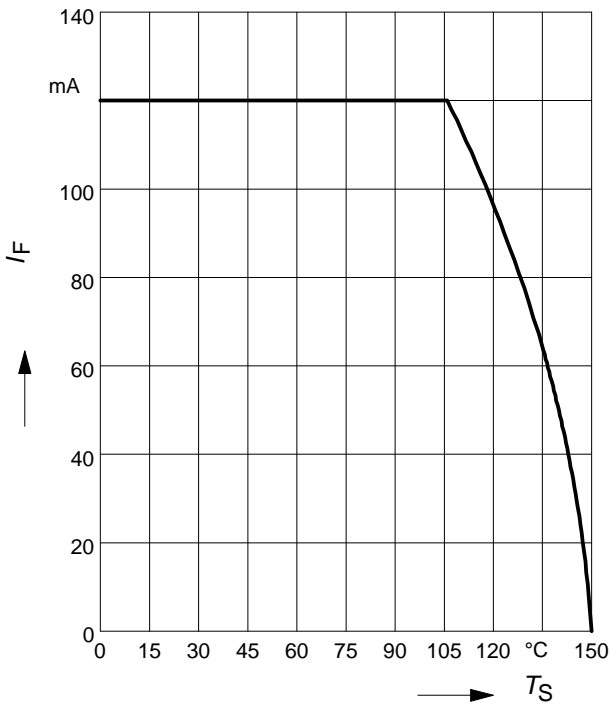
Forward current  $I_F = f(T_S)$

BAS40-04, BAS40-06



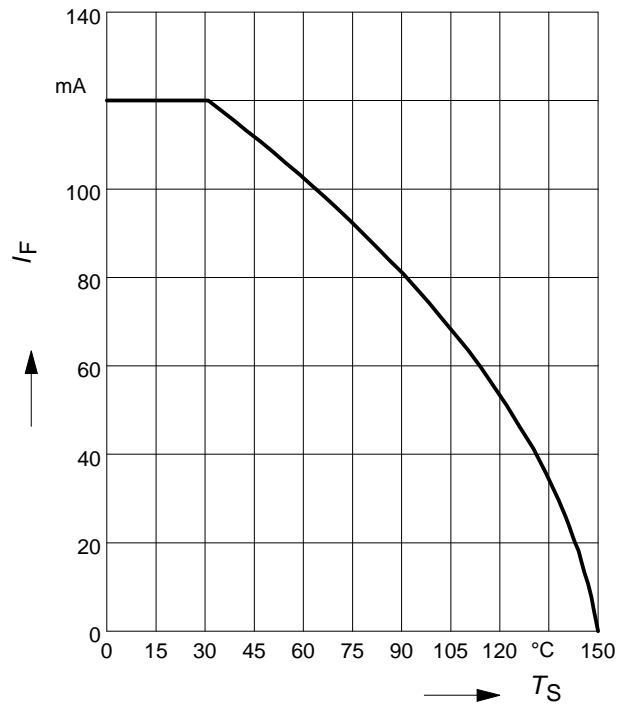
Forward current  $I_F = f(T_S)$

BAS40-06W



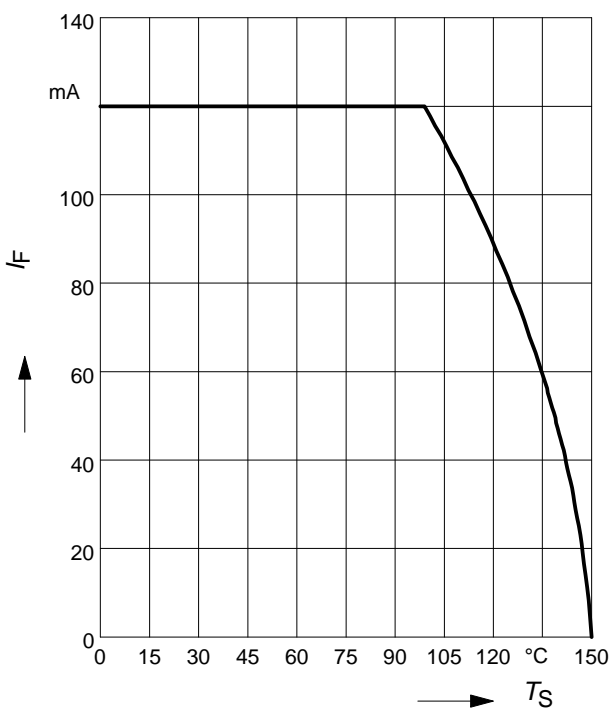
Forward current  $I_F = f(T_S)$

BAS40-05



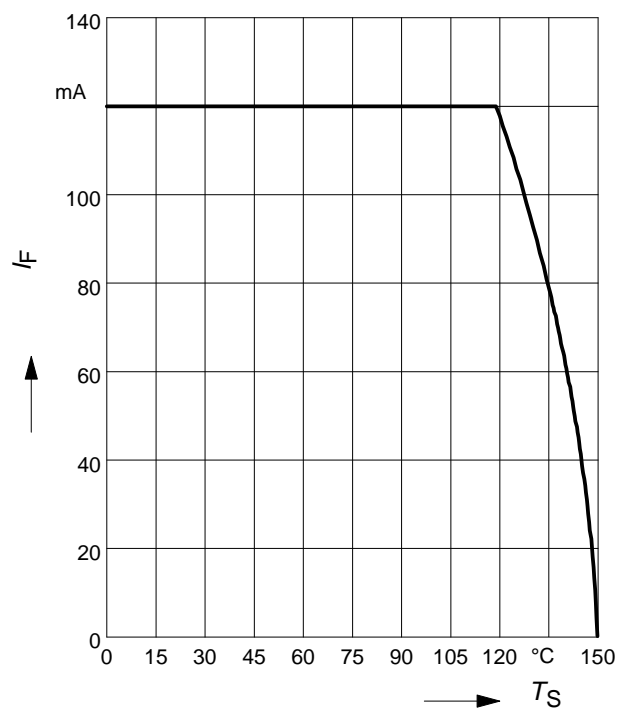
Forward current  $I_F = f(T_S)$

BAS40-05W



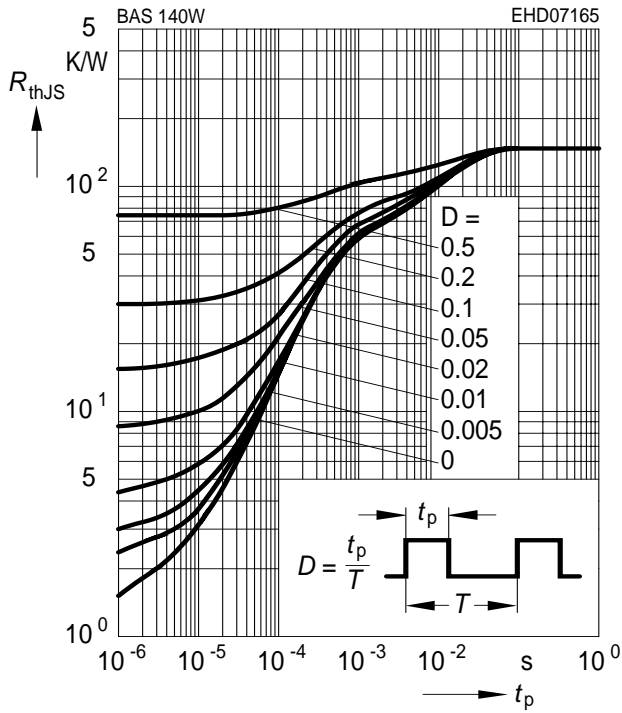
Forward current  $I_F = f(T_S)$

BAS40-07W



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

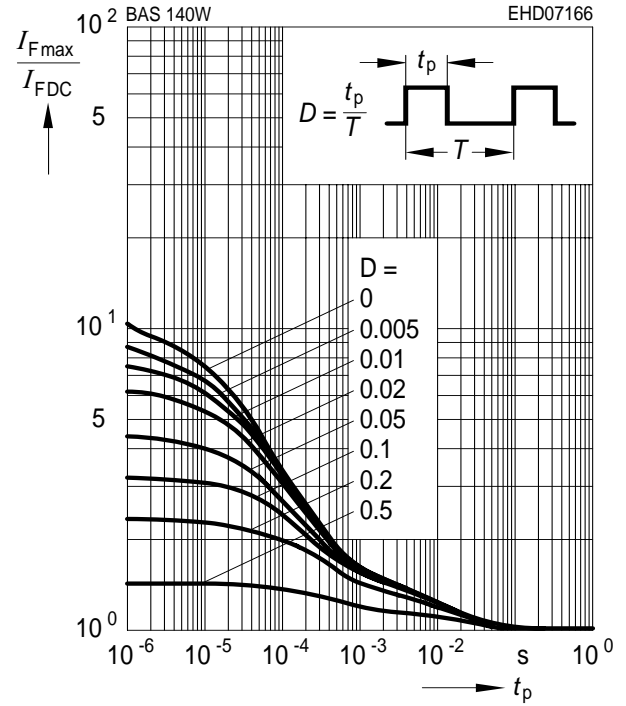
BAS140W



**Permissible Pulse Load**

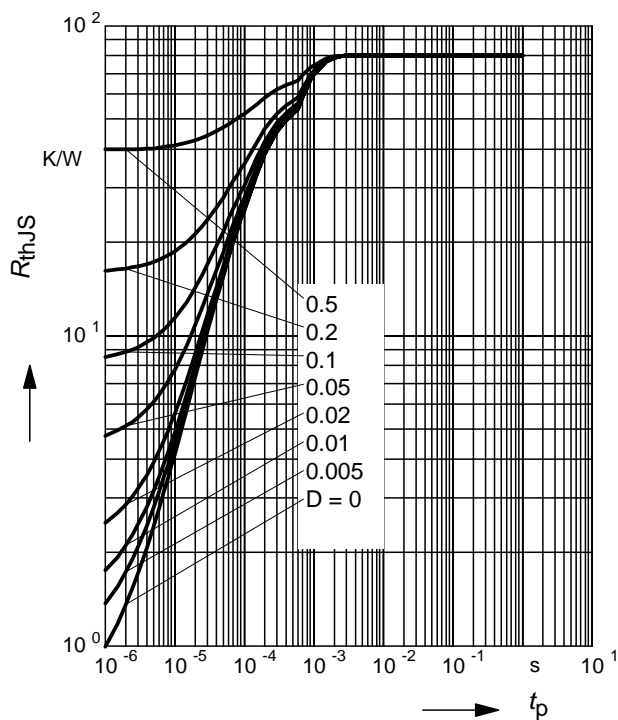
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS140W



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

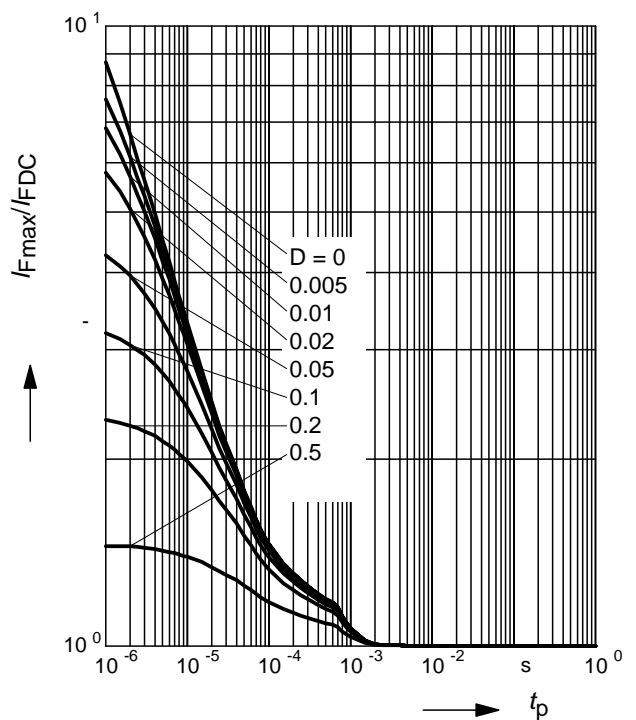
BAS40-02L



**Permissible Pulse Load**

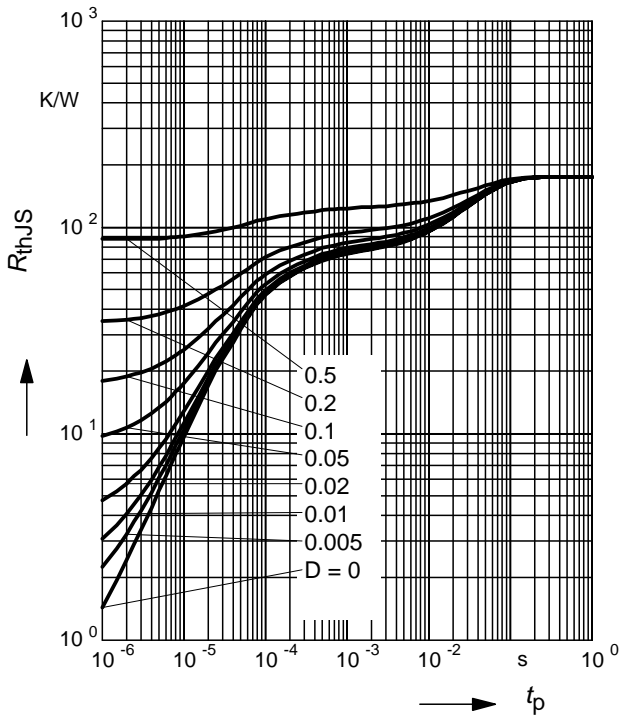
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS40-02L



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

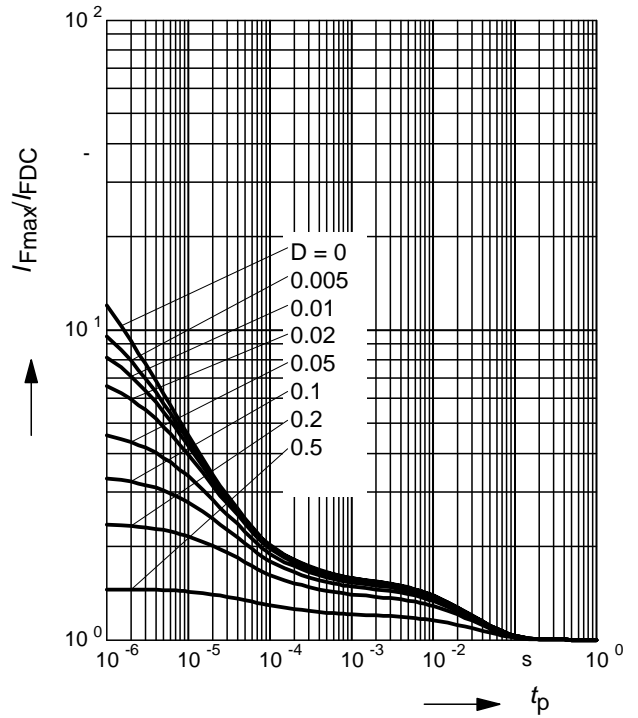
BAS40-06W



**Permissible Pulse Load**

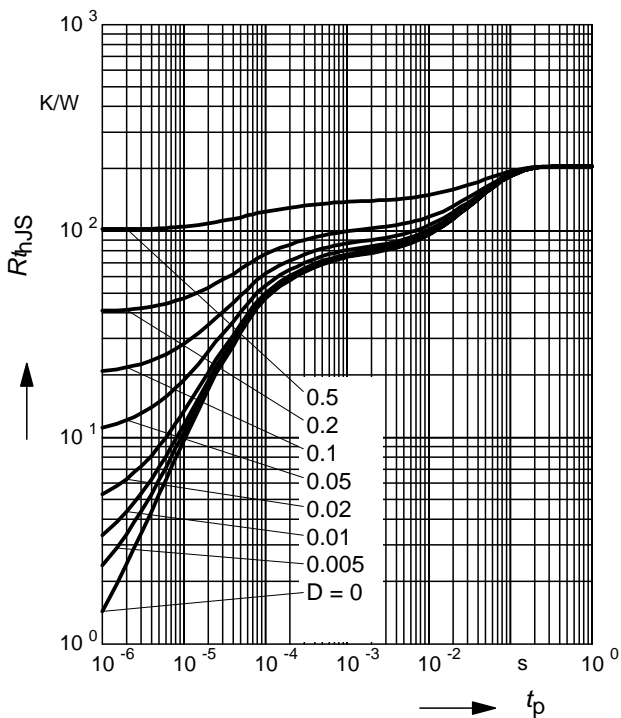
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS40-06W



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

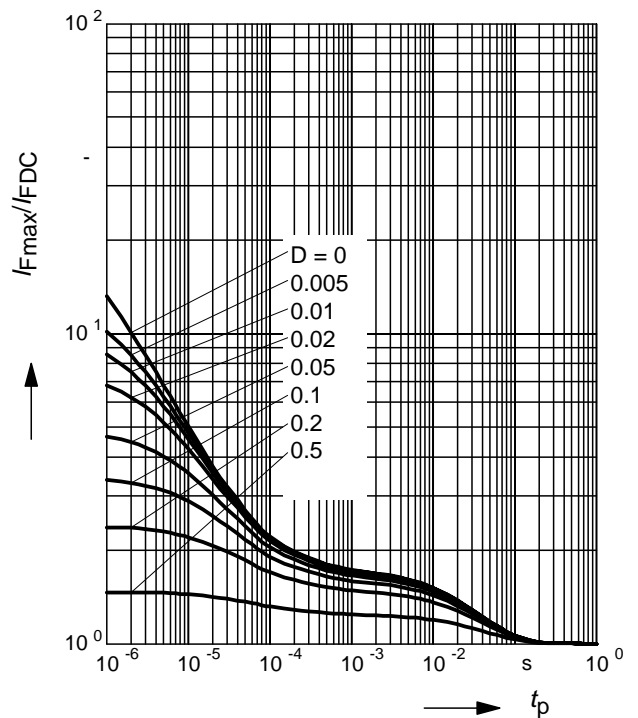
BAS40-05W



**Permissible Pulse Load**

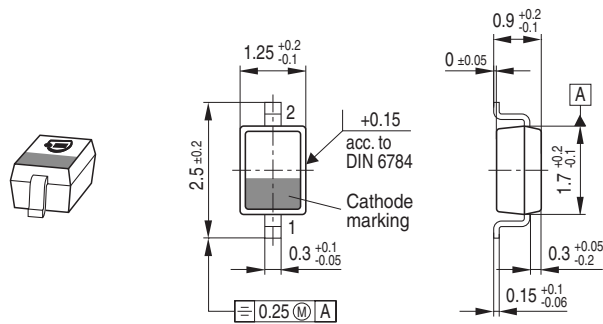
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS40-05W

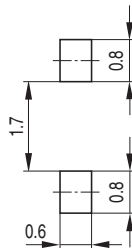




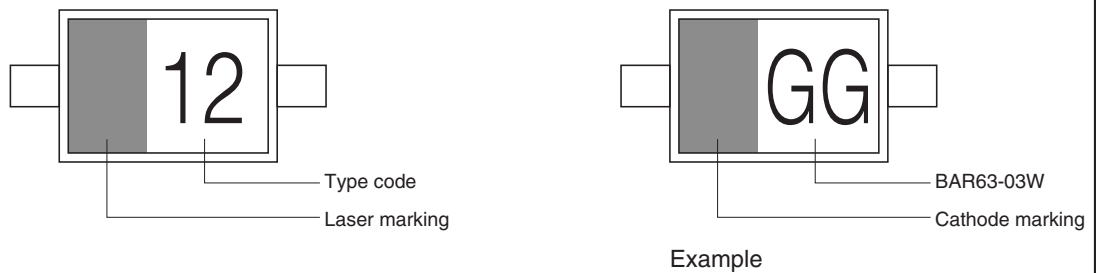
### Package Outline



### Foot Print

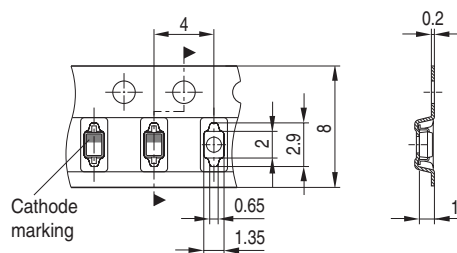


### Marking Layout

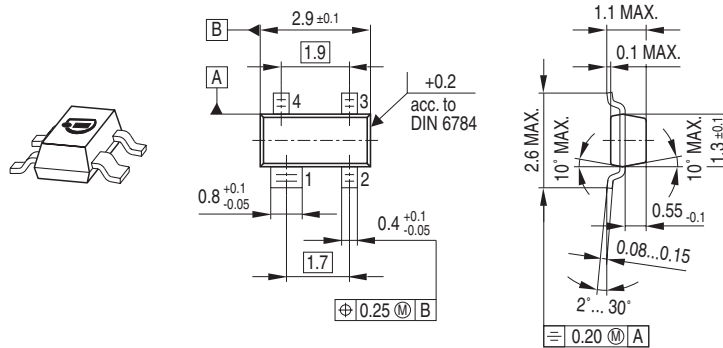


### Packing

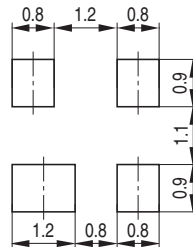
Code E6327: Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Code E6433: Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



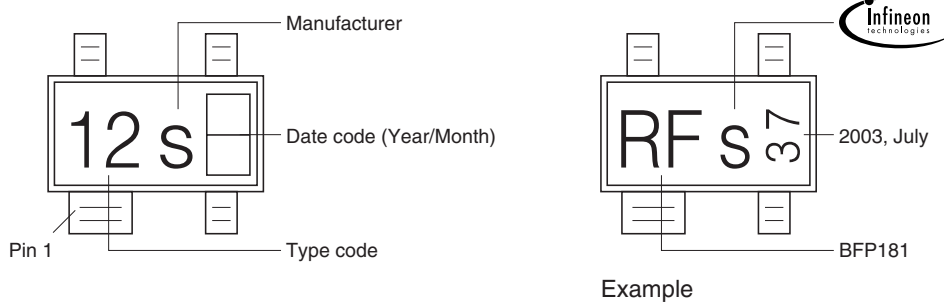
### Package Outline



### Foot Print

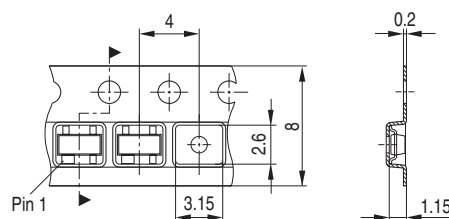


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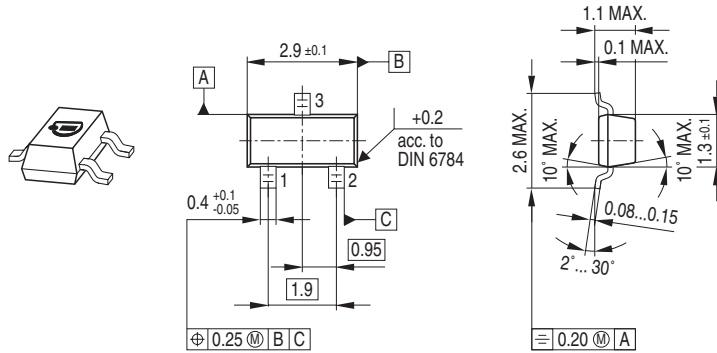


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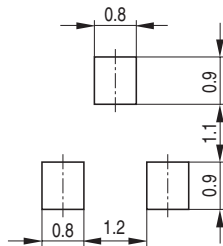
Code E6327: Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
 Code E6433: Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



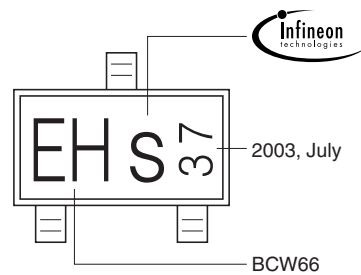
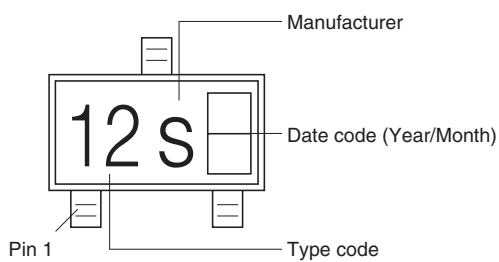
### Package Outline



### Foot Print



### Marking Layout

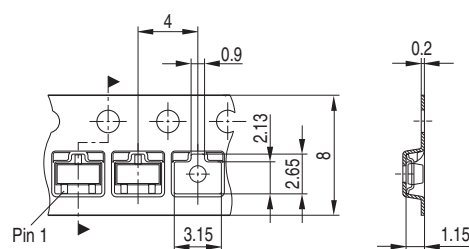


Example

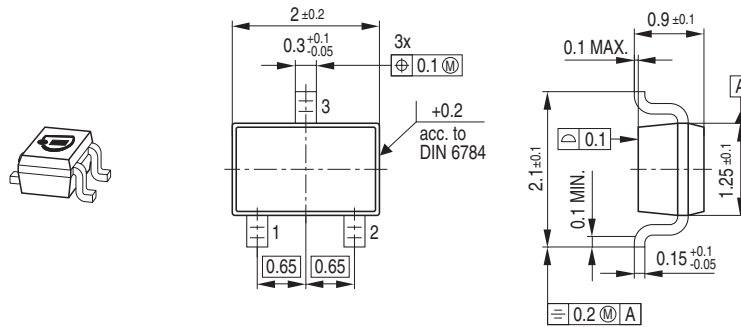
### Packing

Code E6327: Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel

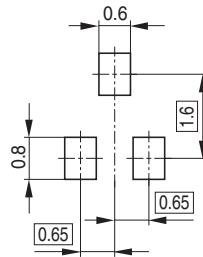
Code E6433: Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



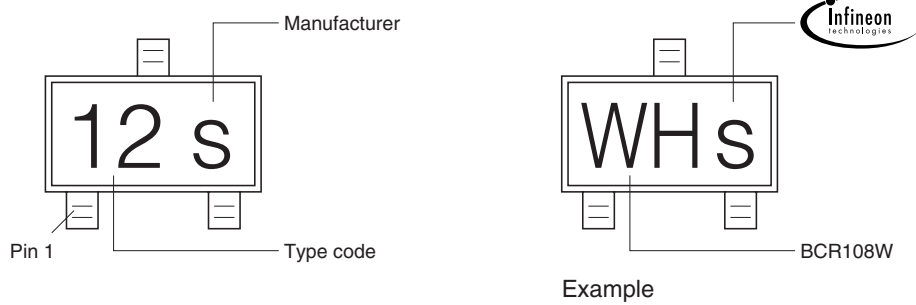
### Package Outline



### Foot Print

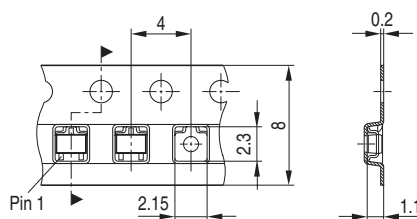


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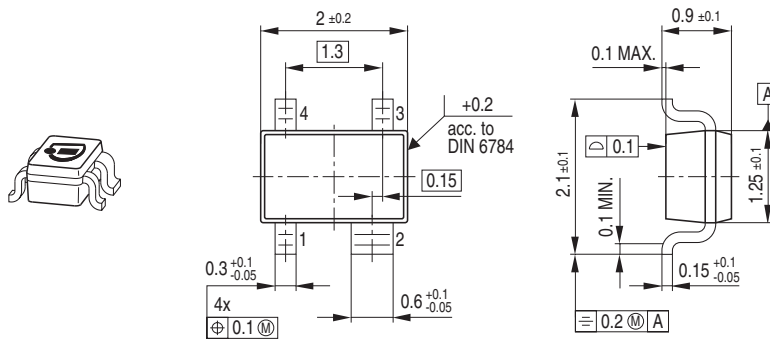


### Packing

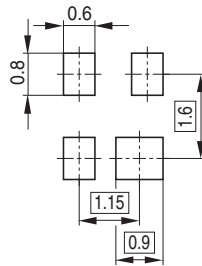
Code E6327: Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Code E6433: Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



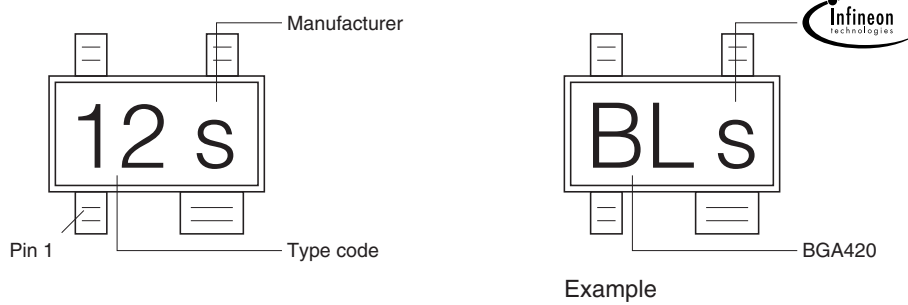
### Package Outline



### Foot Print

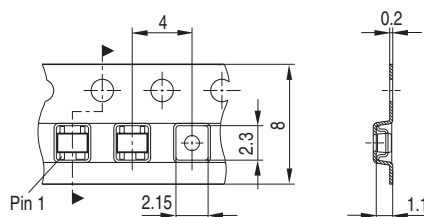


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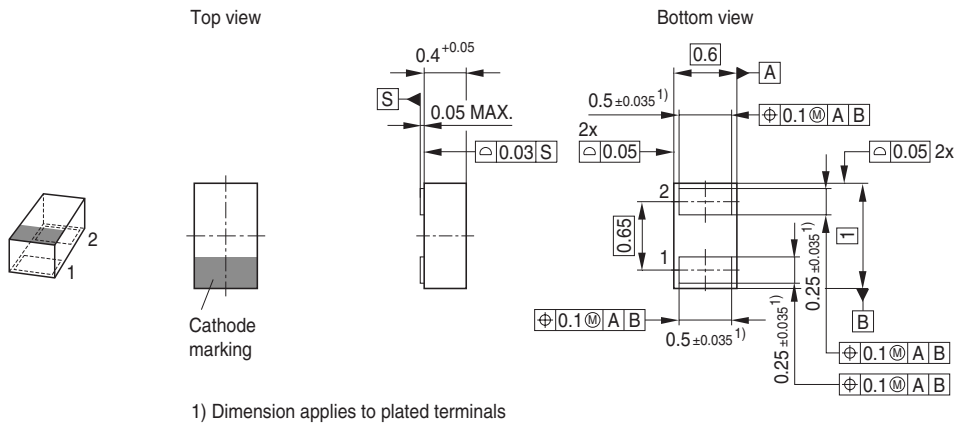


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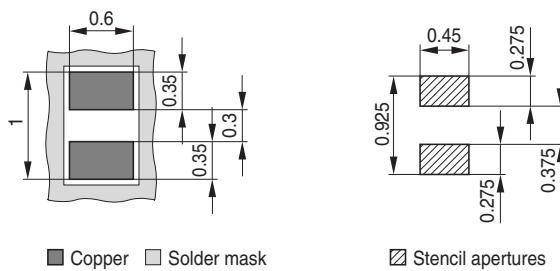
Code E6327: Reel ø180 mm = 3.000 Pieces/Reel  
 Code E6433: Reel ø330 mm = 10.000 Pieces/Reel



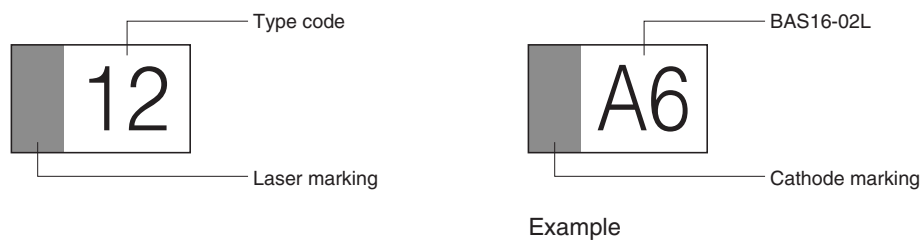
### Package Outline



### Foot Print

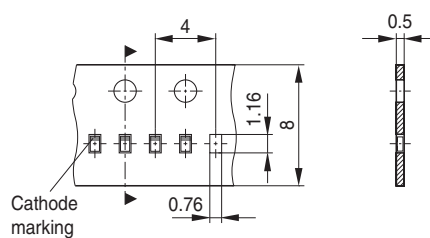


### Marking Layout



### Packing

Code E6327: Reel  $\varnothing$ 180 mm = 15.000 Pieces/Reel



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