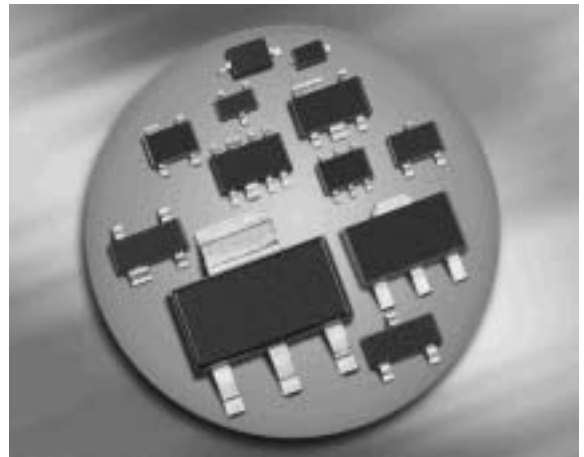
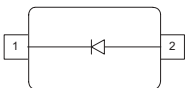


## Silicon Schottky Diode

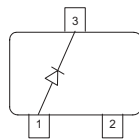
- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing
- BAS70-04S: For orientation in reel see package information below
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



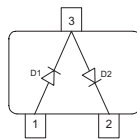
**BAS170W**  
**BAS70-02L**  
**BAS70-02W**



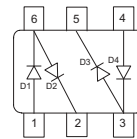
**BAS70**



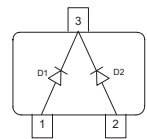
**BAS70-04**  
**BAS70-04W**



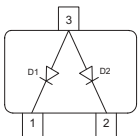
**BAS70-04S**



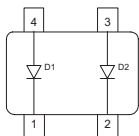
**BAS70-05**  
**BAS70-05W**



**BAS70-06**  
**BAS70-06W**



**BAS70-07**  
**BAS70-07W**



<sup>1</sup>Pb-containing package may be available upon special request

| Type      | Package  | Configuration    | $L_S$ (nH) | Marking |
|-----------|----------|------------------|------------|---------|
| BAS170W   | SOD323   | single           | 1.8        | white 7 |
| BAS70     | SOT23    | single           | 1.8        | 73s     |
| BAS70-02L | TSLP-2-1 | single, leadless | 0.4        | F       |
| BAS70-02W | SCD80    | single           | 0.6        | 73      |
| BAS70-04  | SOT23    | series           | 1.8        | 74s     |
| BAS70-04S | SOT363   | dual series      | 1.6        | 74s     |
| BAS70-04W | SOT323   | series           | 1.4        | 74s     |
| BAS70-05  | SOT23    | common cathode   | 1.8        | 75s     |
| BAS70-05W | SOT323   | common cathode   | 1.4        | 75s     |
| BAS70-06  | SOT23    | common anode     | 1.8        | 76s     |
| BAS70-06W | SOT323   | common anode     | 1.4        | 76s     |
| BAS70-07  | SOT143   | parallel pair    | 2          | 77s     |
| BAS70-07W | SOT343   | parallel pair    | 1.8        | 77s     |

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

| Parameter                                                                                                                                                                                                                                                                                                                                                                                                | Symbol    | Value                                                | Unit             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------|------------------|
| Diode reverse voltage                                                                                                                                                                                                                                                                                                                                                                                    | $V_R$     | 70                                                   | V                |
| Forward current                                                                                                                                                                                                                                                                                                                                                                                          | $I_F$     | 70                                                   | mA               |
| Non-repetitive peak surge forward current<br>$t \leq 10\text{ms}$                                                                                                                                                                                                                                                                                                                                        | $I_{FSM}$ | 100                                                  |                  |
| Total power dissipation<br>BAS70, BAS70-07, $T_S \leq 72^\circ\text{C}$<br>BAS70-02L, $T_S \leq 117^\circ\text{C}$<br>BAS70-02W, $T_S \leq 107^\circ\text{C}$<br>BAS70-04, BAS70-06, $T_S \leq 48^\circ\text{C}$<br>BAS70-04S/W/-06W, BAS170W, $T_S \leq 97^\circ\text{C}$<br>BAS70-05, $T_S \leq 22^\circ\text{C}$<br>BAS70-05W, $T_S \leq 90^\circ\text{C}$<br>BAS70-07W, $T_S \leq 114^\circ\text{C}$ | $P_{tot}$ | 250<br>250<br>250<br>250<br>250<br>250<br>250<br>250 | mW               |
| Junction temperature                                                                                                                                                                                                                                                                                                                                                                                     | $T_j$     | 150                                                  | $^\circ\text{C}$ |
| 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> | $R_{thJS}$ |            | K/W  |
| BAS70, BAS70-07                          |            | $\leq 310$ |      |
| BAS70-02L,                               |            | $\leq 130$ |      |
| BAS70-02W                                |            | $\leq 170$ |      |
| BAS70-04, BAS70-06                       |            | $\leq 410$ |      |
| BAS70-04S/W, BAS70-06W                   |            | $\leq 210$ |      |
| BAS70-05                                 |            | $\leq 510$ |      |
| BAS70-05W                                |            | $\leq 240$ |      |
| BAS70-07W                                |            | $\leq 145$ |      |
| BAS170W                                  |            | $\leq 190$ |      |

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

| Parameter                                                         | Symbol       | Values            |                   |                    | Unit    |
|-------------------------------------------------------------------|--------------|-------------------|-------------------|--------------------|---------|
|                                                                   |              | min.              | typ.              | max.               |         |
| DC Characteristics                                                |              |                   |                   |                    |         |
| Breakdown voltage<br>$I_{(BR)} = 10 \mu A$                        | $V_{(BR)}$   | 70                | -                 | -                  | V       |
| Reverse current<br>$V_R = 50 V$                                   | $I_R$        | -                 | -                 | 0.1                | $\mu A$ |
| Forward voltage<br>$I_F = 1 mA$<br>$I_F = 10 mA$<br>$I_F = 15 mA$ | $V_F$        | 300<br>600<br>720 | 375<br>705<br>880 | 410<br>750<br>1000 | mV      |
| Forward voltage matching <sup>2)</sup><br>$I_F = 10 mA$           | $\Delta V_F$ | -                 | -                 | 20                 |         |

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

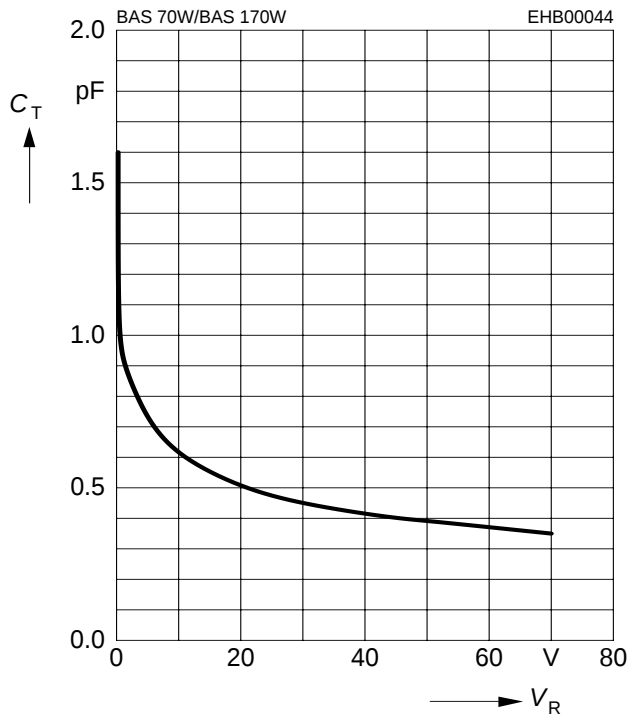
<sup>2)</sup> $\Delta V_F$  is the difference between lowest and highest  $V_F$  in a multiple diode component.

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

| Parameter                                         | Symbol      | Values |      |      | Unit     |
|---------------------------------------------------|-------------|--------|------|------|----------|
|                                                   |             | min.   | typ. | max. |          |
| AC Characteristics                                |             |        |      |      |          |
| Diode capacitance<br>$V_R = 0$ , $f = 1$ MHz      | $C_T$       | -      | 1.5  | 2    | pF       |
| Forward resistance<br>$I_F = 10$ mA, $f = 10$ kHz | $r_f$       | -      | 34   | -    | $\Omega$ |
| Charge carrier life time<br>$I_F = 25$ mA         | $\tau_{rr}$ | -      | -    | 100  | ps       |

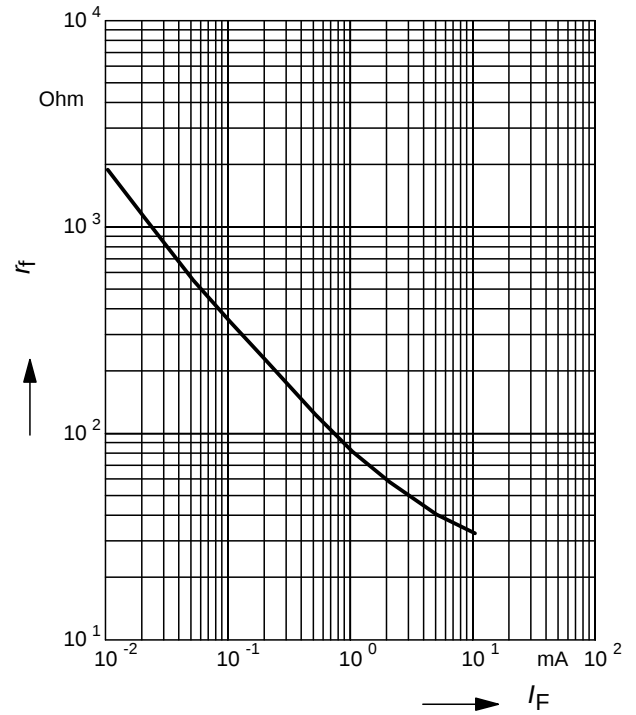
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{ MHz}$



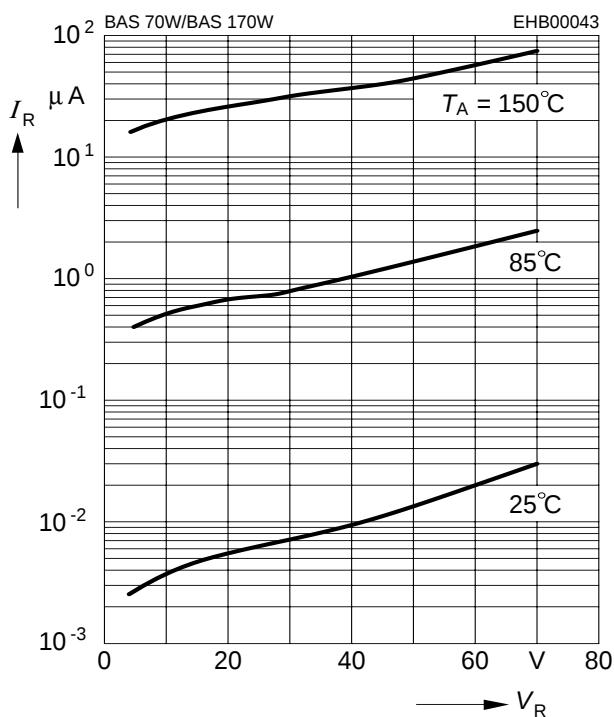
**Forward resistance  $r_f = f(I_F)$**

$f = 10\text{ kHz}$



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

$T_A = \text{Parameter}$



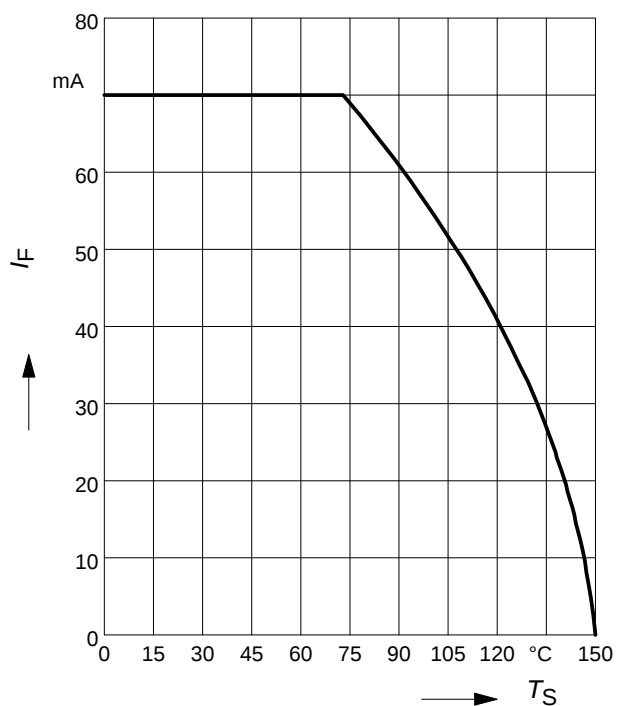
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



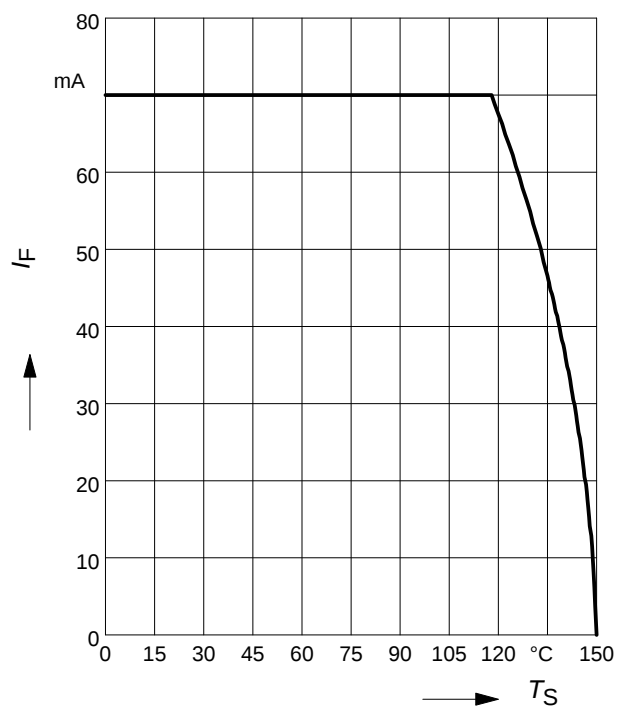
**Forward current  $I_F = f(T_S)$**

BAS70, BAS70-07



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

BAS70-02L



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

BAS70-02W



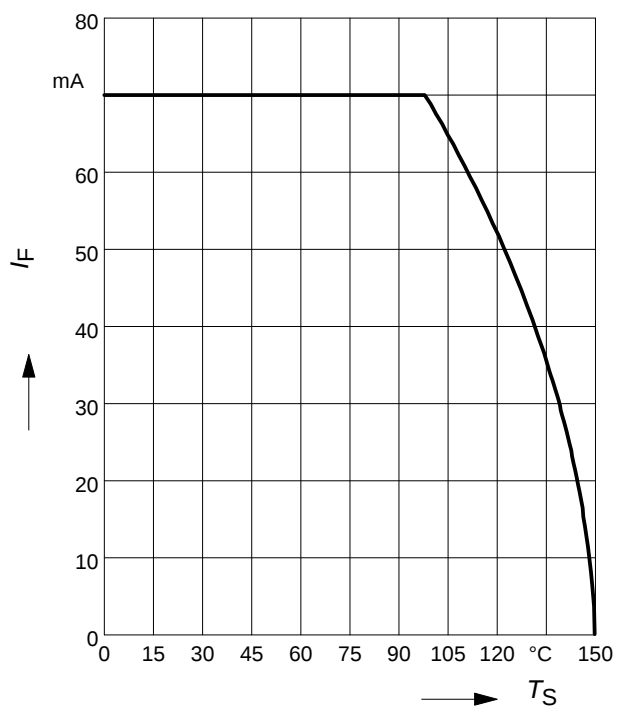
**Forward current  $I_F = f(T_S)$**

BAS70-04, BAS70-06



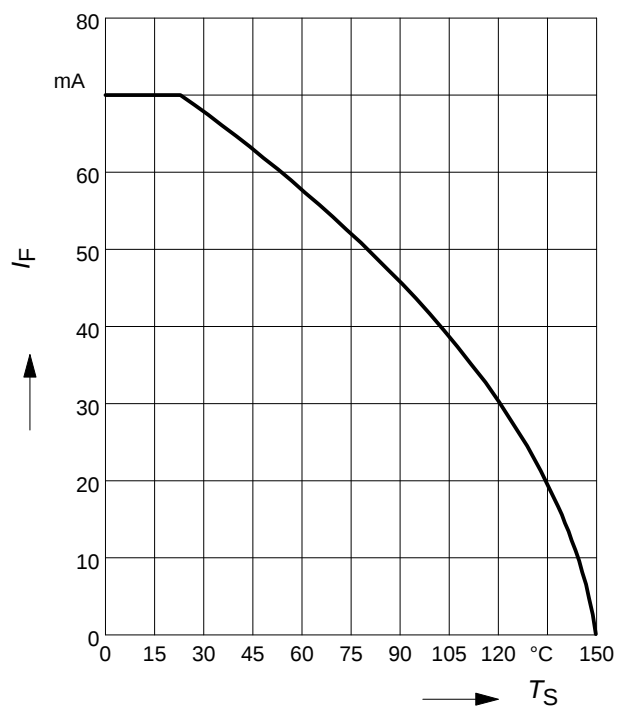
**Forward current  $I_F = f(T_S)$**

BAS70-04S/W, BAS70-06W, BAS170W



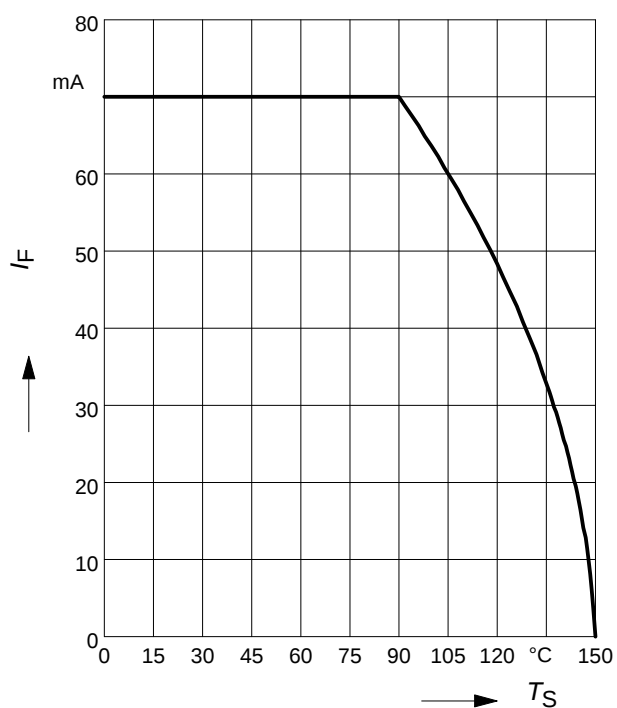
**Forward current  $I_F = f(T_S)$**

BAS70-05



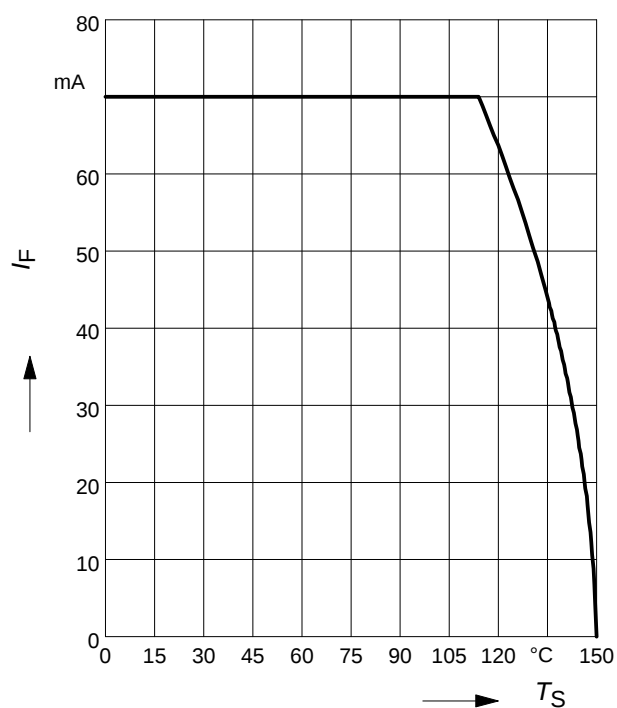
**Forward current  $I_F = f(T_S)$**

BAS70-05W



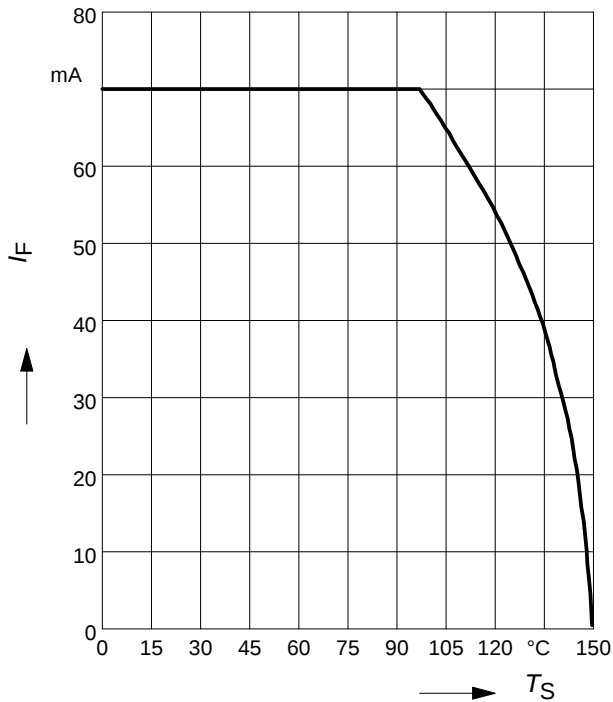
**Forward current  $I_F = f(T_S)$**

BAS70-07W



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

BAS170W



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

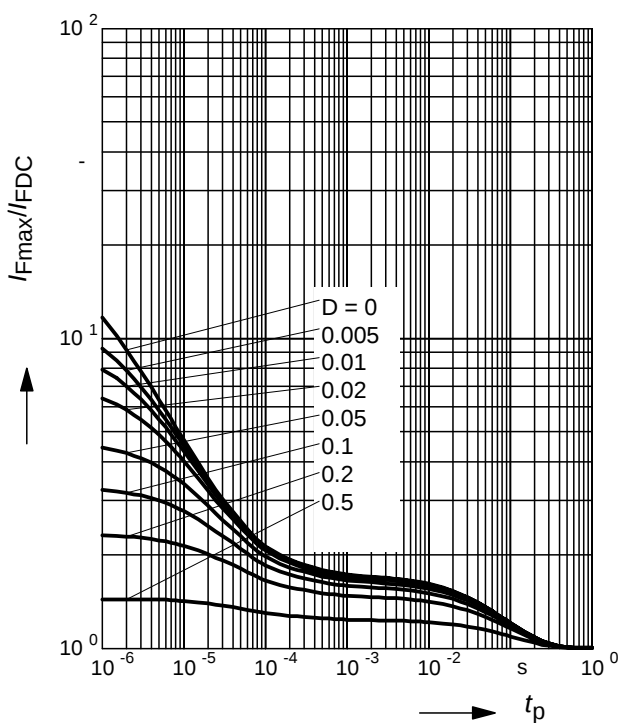
BAS70



**Permissible Pulse Load**

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

BAS70



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

BAS70-02L



### Permissible Pulse Load

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

BAS70-02L



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

BAS70-02W



### Permissible Pulse Load

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

BAS70-02W



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

BAS70-04, BAS70-06



### Permissible Pulse Load

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

BAS70-04, BAS70-06



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

BAS70-04S



### Permissible Pulse Load

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

BAS70-04S



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

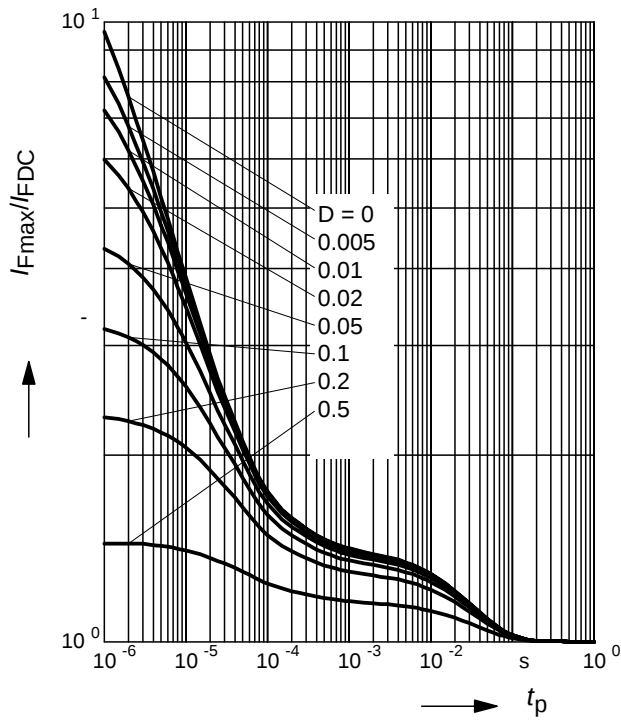
BAS70-04W, BAS70-06W



### Permissible Pulse Load

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

BAS70-04W, BAS70-06W



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

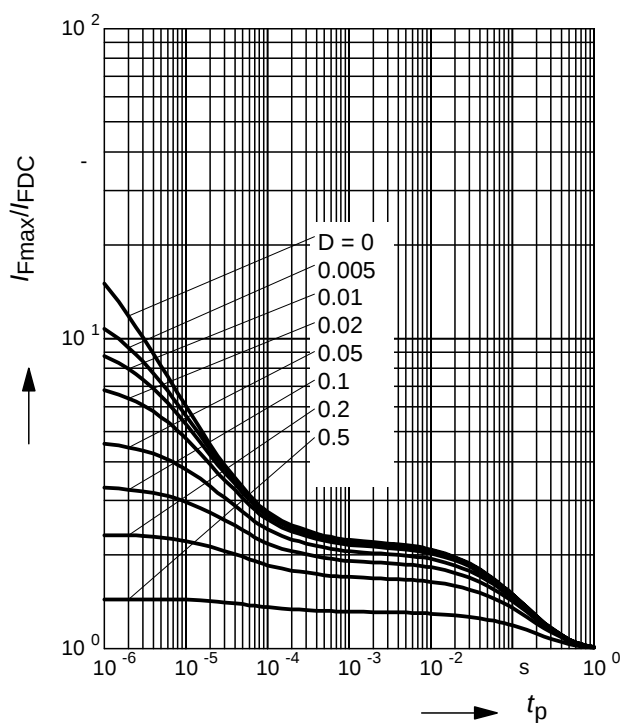
BAS70-05



### Permissible Pulse Load

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

BAS70-05



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

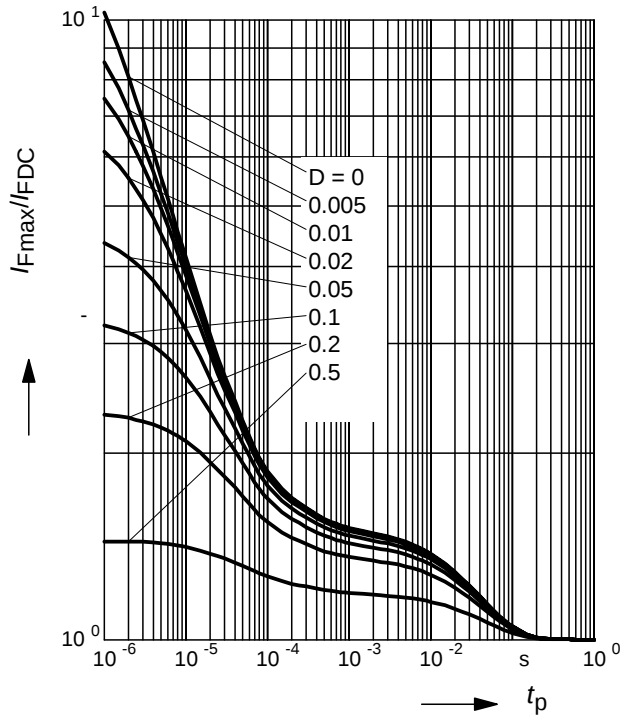
BAS70-05W



### Permissible Pulse Load

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

BAS70-05W



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

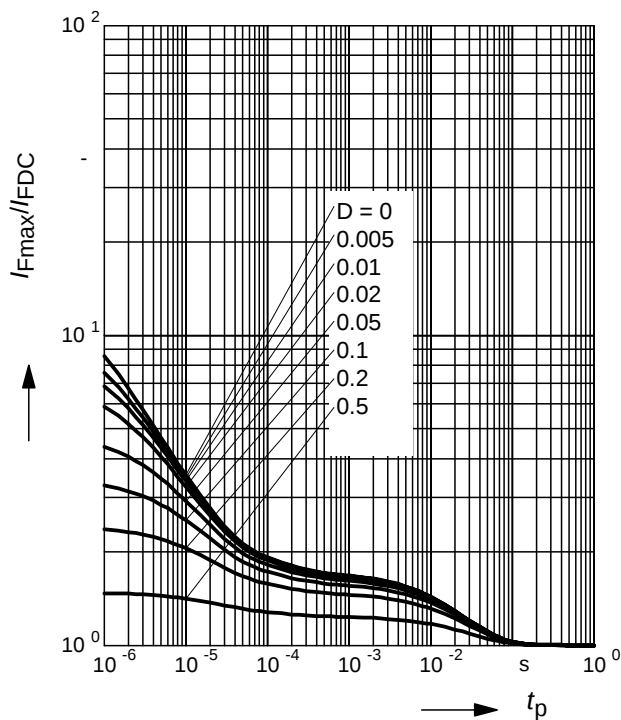
BAS70-07W



### Permissible Pulse Load

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

BAS70-07W



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

BAS170W



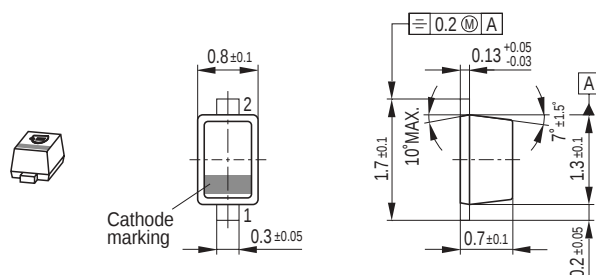
## Permissible Pulse Load

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

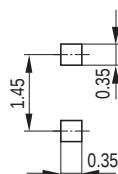
BAS170W



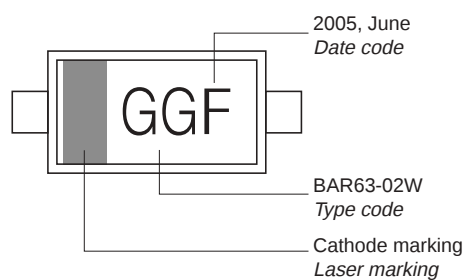
## Package Outline



## Foot Print

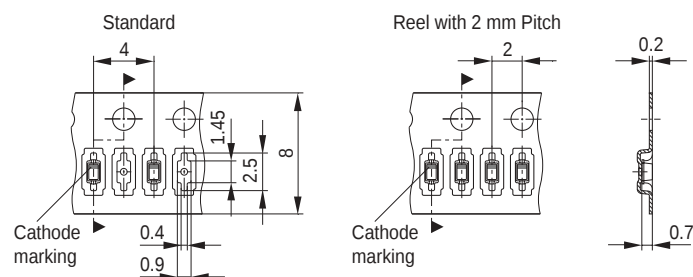


## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel ø330 mm = 10.000 Pieces/Reel



Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q    | B    | Q    | b    | q    | B    | Q    | b    | q    | B    | Q    |
| 03    | c    | r    | C    | R    | c    | r    | C    | R    | c    | r    | C    | R    |
| 04    | d    | s    | D    | S    | d    | s    | D    | S    | d    | s    | D    | S    |
| 05    | e    | t    | E    | T    | e    | t    | E    | T    | e    | t    | E    | T    |
| 06    | f    | u    | F    | U    | f    | u    | F    | U    | f    | u    | F    | U    |
| 07    | g    | v    | G    | V    | g    | v    | G    | V    | g    | v    | G    | V    |
| 08    | h    | x    | H    | X    | h    | x    | H    | X    | h    | x    | H    | X    |
| 09    | j    | y    | J    | Y    | j    | y    | J    | Y    | j    | y    | J    | Y    |
| 10    | k    | z    | K    | Z    | k    | z    | K    | Z    | k    | z    | K    | Z    |
| 11    | l    | 2    | L    | 4    | l    | 2    | L    | 4    | l    | 2    | L    | 4    |
| 12    | n    | 3    | N    | 5    | n    | 3    | N    | 5    | n    | 3    | N    | 5    |

1) New Marking Layout for SC75, implemented at October 2005.

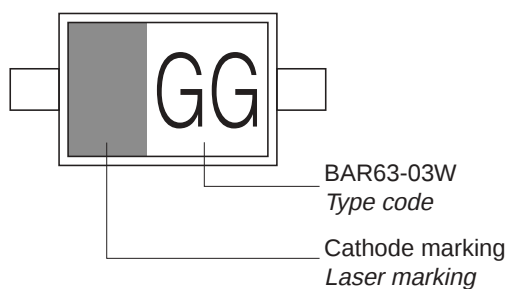
## Package Outline



## Foot Print

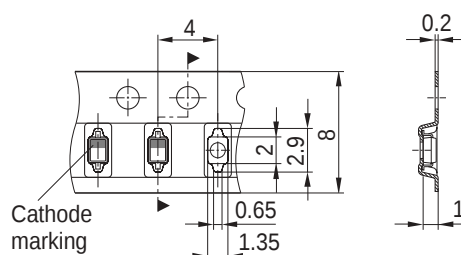


## Marking Layout (Example)



## Standard Packing

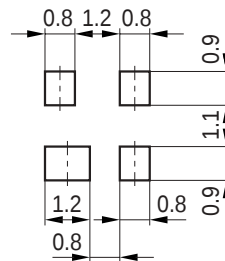
Reel  $\varnothing 180$  mm = 3.000 Pieces/Reel  
 Reel  $\varnothing 330$  mm = 10.000 Pieces/Reel



## Package Outline



## Foot Print

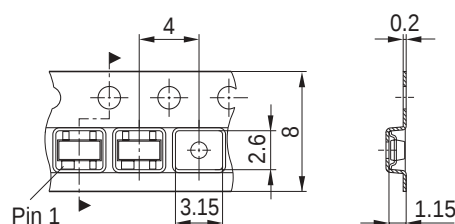


## Marking Layout (Example)

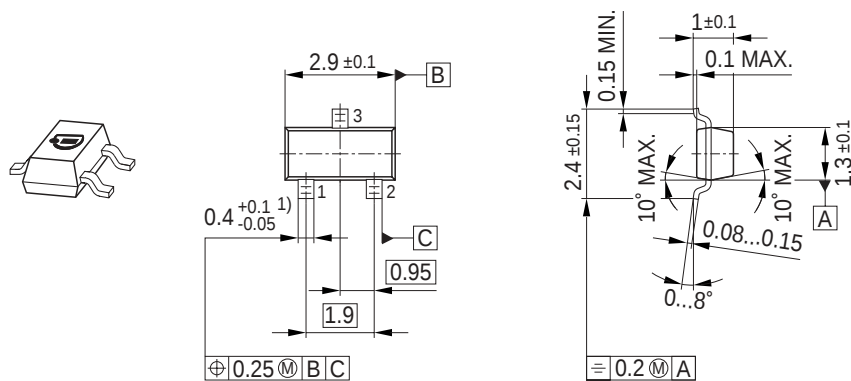


## Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
Reel ø330 mm = 10.000 Pieces/Reel

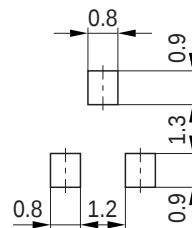


## Package Outline

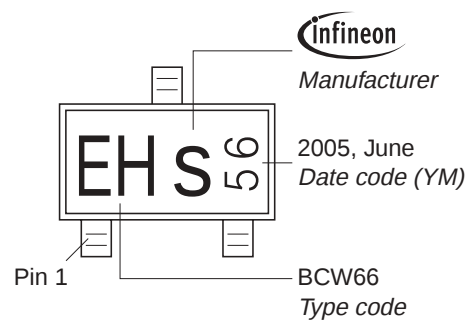


1) Lead width can be 0.6 max. in dambar area

## Foot Print

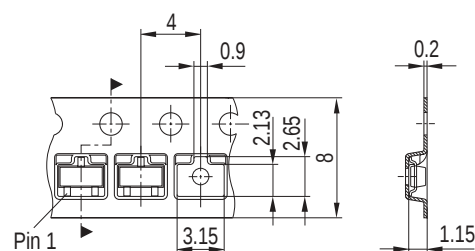


## Marking Layout (Example)

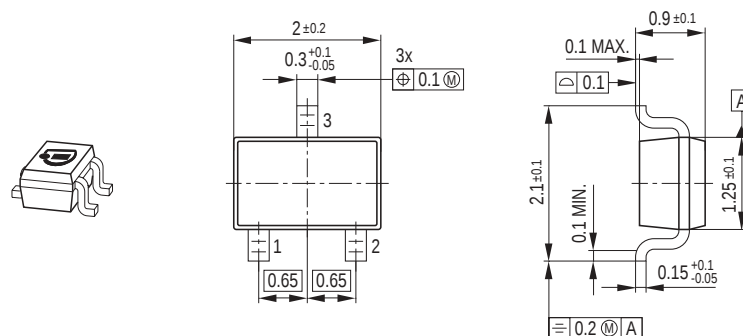


## Standard Packing

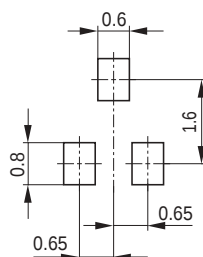
Reel ø180 mm = 3.000 Pieces/Reel  
Reel ø330 mm = 10.000 Pieces/Reel



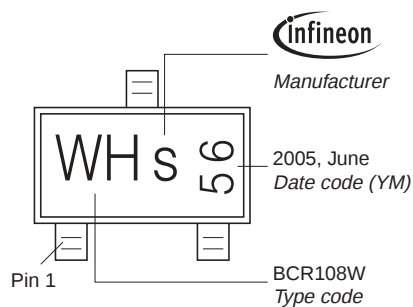
## Package Outline



## Foot Print

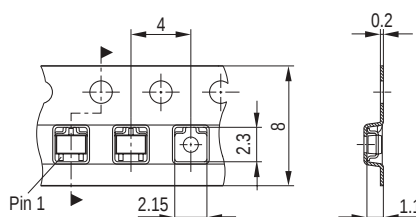


## Marking Layout (Example)

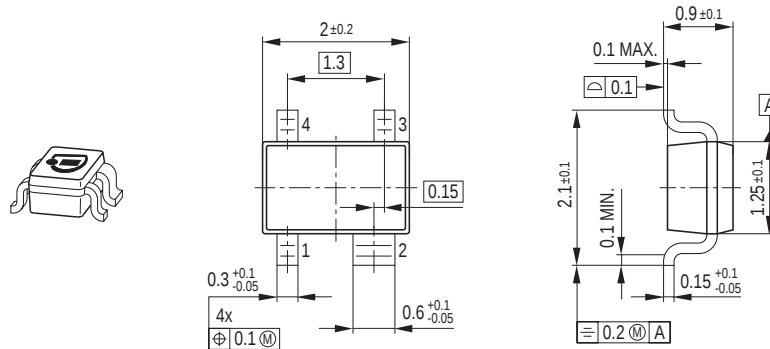


## Standard Packing

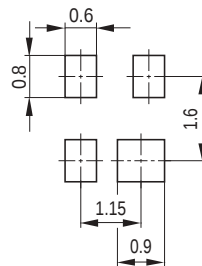
Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
 Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



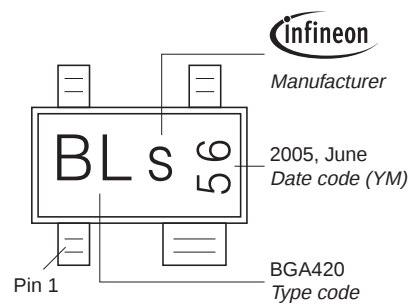
## Package Outline



## Foot Print

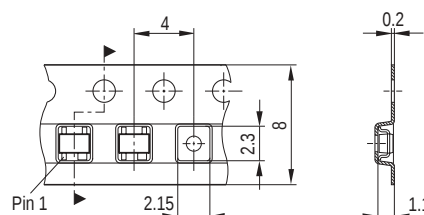


## Marking Layout (Example)

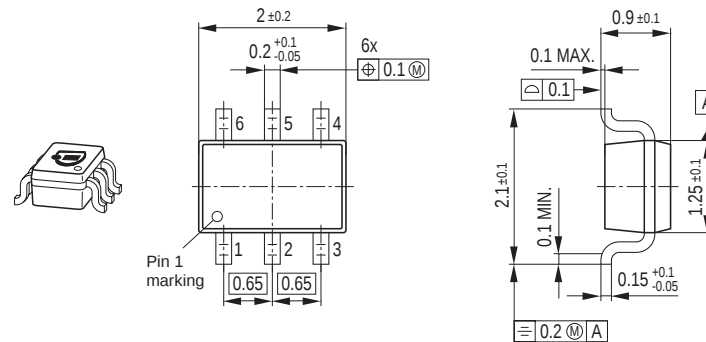


## Standard Packing

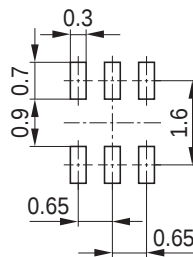
Reel ø180 mm = 3.000 Pieces/Reel  
Reel ø330 mm = 10.000 Pieces/Reel



## Package Outline

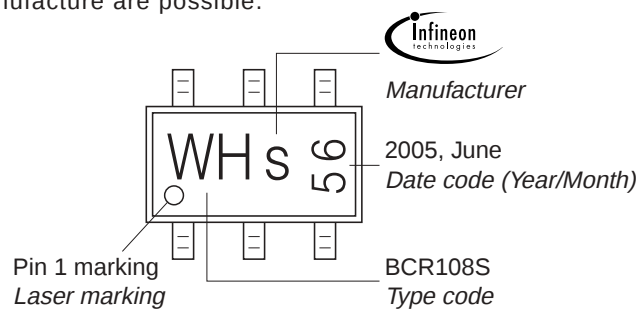


## Foot Print



## Marking Layout (Example)

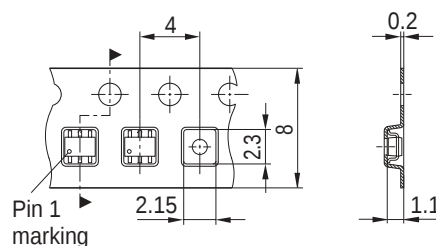
Small variations in positioning of Date code, Type code and Manufacture are possible.



## Standard Packing

Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel

For symmetric types no defined Pin 1 orientation in reel.

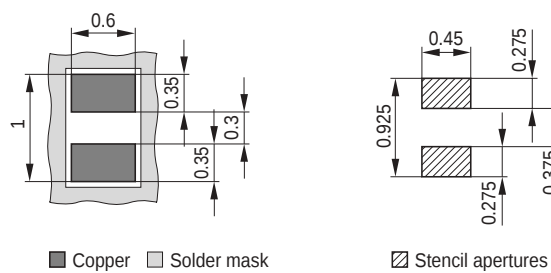


## Package Outline



## Foot Print

For board assembly information please refer to Infineon website "Packages"



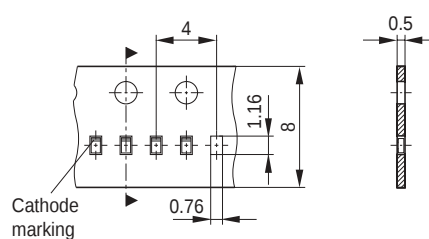
## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

Reel ø330 mm = 50.000 Pieces/Reel (optional)



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

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- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
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(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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