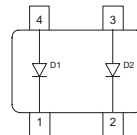
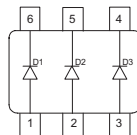


Silicon Switching Diode

- For high-speed switching applications
- Pb-free (RoHS compliant) package ¹⁾
- Qualified according AEC Q101


BAS16
BAS16W
BAS16-02L
BAS16-02V
BAS16-02W
BAS16-03W
BAS16S
BAS16U
BAS16-07L4


| Type | Package | Configuration | Marking |
|-------------|----------|-------------------------|---------|
| BAS16 | SOT23 | single | A6s |
| BAS16-02L* | TSLP-2-1 | single, leadless | A6 |
| BAS16-02V | SC79 | single | 6 |
| BAS16-02W | SCD80 | single | A6 |
| BAS16-03W | SOD323 | single | white B |
| BAS16-07L4* | TSLP-4-4 | parallel pair, leadless | 6A |
| BAS16S | SOT363 | parallel triple | A6s |
| BAS16U | SC74 | parallel triple | A6s |
| BAS16W | SOT323 | single | A6s |

* Preliminary Data

¹Pb-containing package may be available upon special request

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

| Parameter | Symbol | Value | Unit |
|---|-----------|-------------|------|
| Diode reverse voltage | V_R | 80 | V |
| Peak reverse voltage | V_{RM} | 85 | |
| Forward current | I_F | | mA |
| BAS16 | | 250 | |
| BAS16-02L, -07L4 | | 200 | |
| BAS16-02V, -02W | | 200 | |
| BAS16-03W | | 250 | |
| BAS16S | | 200 | |
| BAS16U | | 200 | |
| BAS16W | | 250 | |
| Non-repetitive peak surge forward current | I_{FSM} | | A |
| $t = 1\ \mu\text{s}$, BAS16/ S/ U/ W/ -03W | | 4.5 | |
| $t = 1\ \mu\text{s}$, BAS16-02L/ -02V/ -02W/ -07L4 | | 2.5 | |
| $t = 1\ \text{s}$ | | 0.5 | |
| Total power dissipation | P_{tot} | | mW |
| BAS16, $T_S \leq 54\text{ °C}$ | | 370 | |
| BAS16-02L, -07L4, $T_S \leq 130\text{ °C}$ | | 250 | |
| BAS16-02V, -02W, $T_S \leq 120\text{ °C}$ | | 250 | |
| BAS16-03W, $T_S \leq 116\text{ °C}$ | | 250 | |
| BAS16S, $T_S \leq 85\text{ °C}$ | | 250 | |
| BAS16U, $T_S \leq 113\text{ °C}$ | | 250 | |
| BAS16W, $T_S \leq 119\text{ °C}$ | | 250 | |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -65 ... 150 | |

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|------------|-------|------|
| Junction - soldering point ¹⁾ | R_{thJS} | | K/W |
| BAS16, BAS16S | | ≤ 260 | |
| BAS16-02L, -07L4 | | ≤ 80 | |
| BAS16-02V, -02W | | ≤ 120 | |
| BAS16-03W | | ≤ 135 | |
| BAS16U | | ≤ 150 | |
| BAS16W | | ≤ 125 | |

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

| Parameter | Symbol | Values | | | Unit |
|---|------------|--------|------|------------------------------------|---------------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$ | $V_{(BR)}$ | 85 | - | - | V |
| Reverse current $V_R = 75 \text{ V}$ $V_R = 25 \text{ V}, T_A = 150^\circ\text{C}$ $V_R = 75 \text{ V}, T_A = 150^\circ\text{C}$ | I_R | - | - | 1 30 50 | μA |
| Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 150 \text{ mA}$ | V_F | - | - | 715 855 1000 1200 1250 | mV |
| Forward recovery voltage $I_F = 10 \text{ mA}, t_P = 20 \text{ ns}$ | V_{fr} | - | - | 1.75 | V |

¹⁾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. | |
| AC Characteristics | | | | | |
| Diode capacitance $V_R = 0\text{ V}, f = 1\text{ MHz}$ | C_T | - | - | 2 | pF |
| Reverse recovery time $I_F = 10\text{ mA}, I_R = 10\text{ mA}$, measured at $I_R = 1\text{ mA}$, $R_L = 100\ \Omega$ | t_{rr} | - | - | 4 | ns |

Test circuit for reverse recovery time


Pulse generator: $t_p = 100\text{ ns}$, $D = 0.05$, $t_r = 0.6\text{ ns}$,
 $R_i = 50\ \Omega$

Oscilloscope: $R = 50\ \Omega$, $t_r = 0.35\text{ ns}$, $C = 0.05\text{ pF}$

Reverse current $I_R = f(T_A)$

$V_R =$ Parameter



Forward Voltage $V_F = f(T_A)$

$I_F =$ Parameter



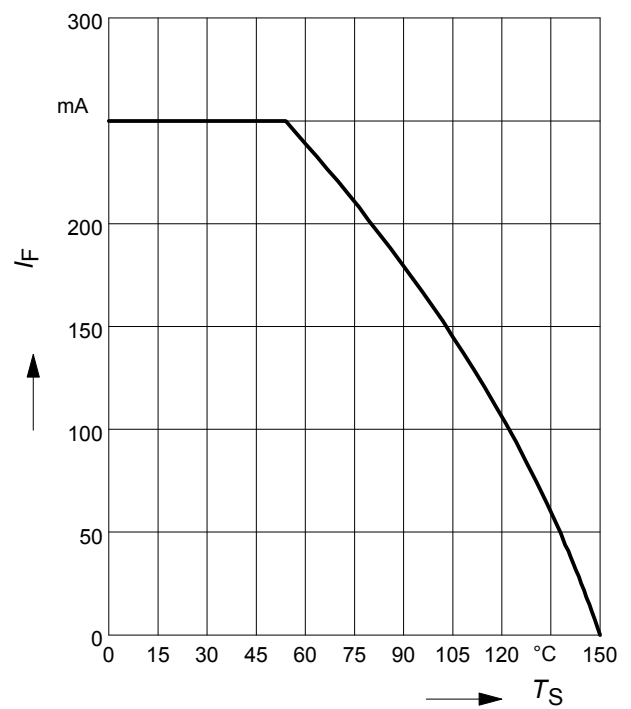
Forward current $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$



Forward current $I_F = f(T_S)$

BAS16



Forward current $I_F = f(T_S)$

BAS16-02L, -07L4



Forward current $I_F = f(T_S)$

BAS16-02V, -02W



Forward current $I_F = f(T_S)$

BAS16-03W



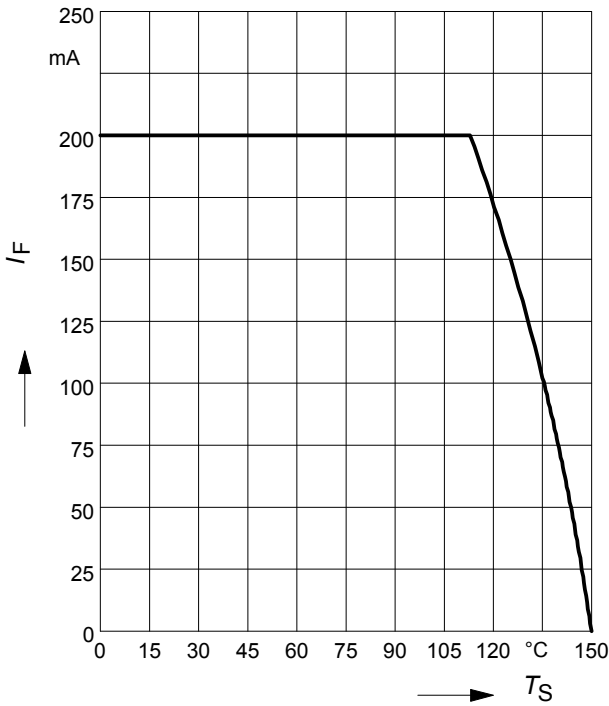
Forward current $I_F = f(T_S)$

BAS16S



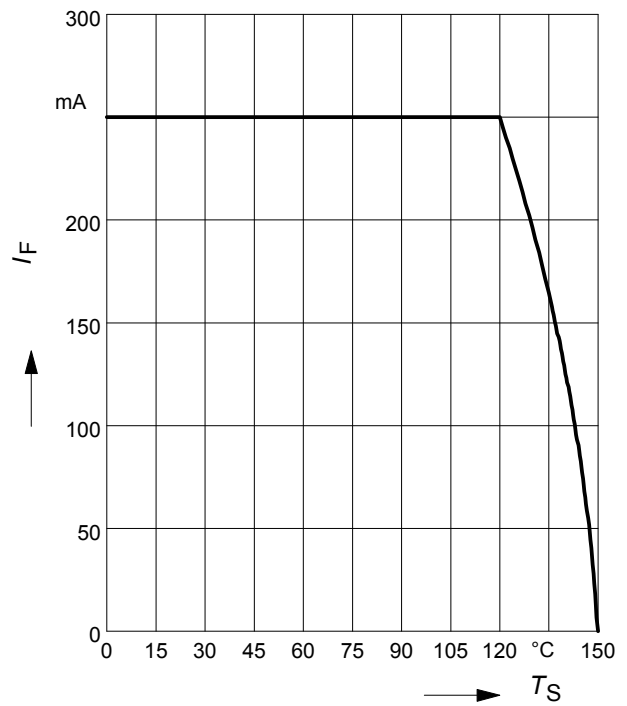
Forward current $I_F = f(T_S)$

BAS16U



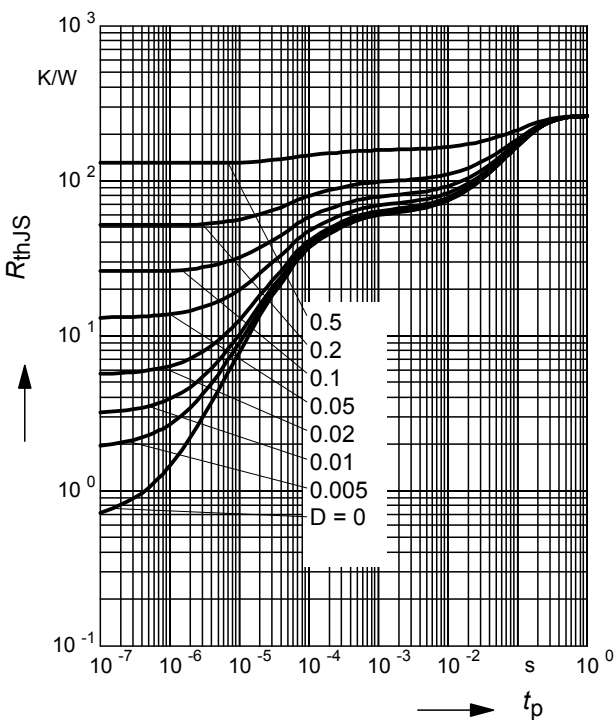
Forward current $I_F = f(T_S)$

BAS16W



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

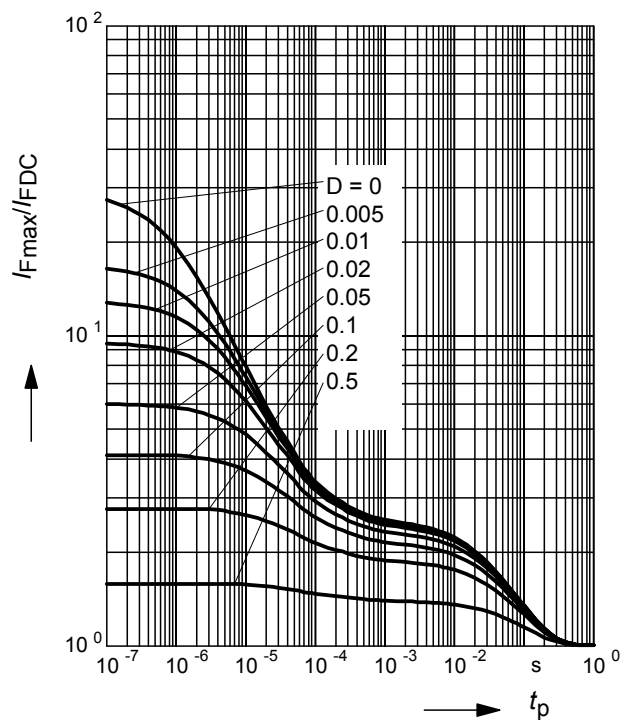
BAS16



Permissible Pulse Load

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

BAS16



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

BAS16-02L, -07L4



Permissible Pulse Load

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

BAS16-02L, -07L4



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

BAS16-02V, -02W



Permissible Pulse Load

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

BAS16-02V, -02W



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

BAS16-03W



Permissible Pulse Load

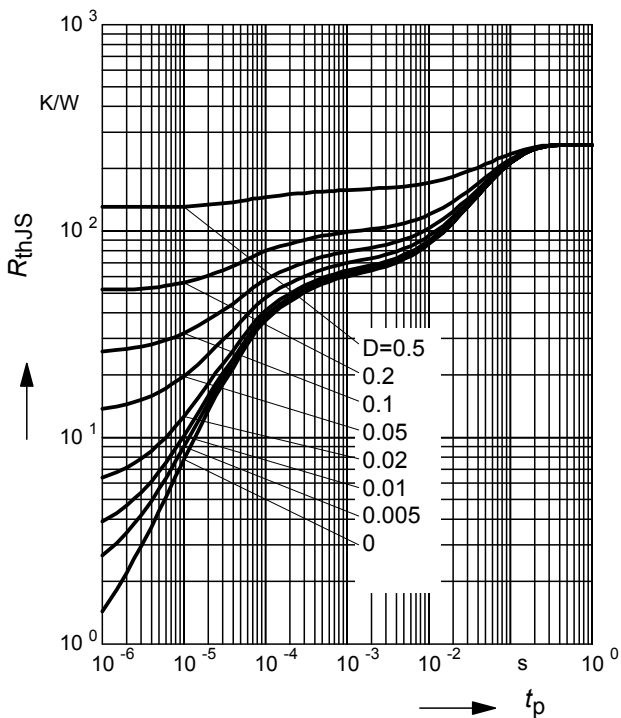
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16-03W



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

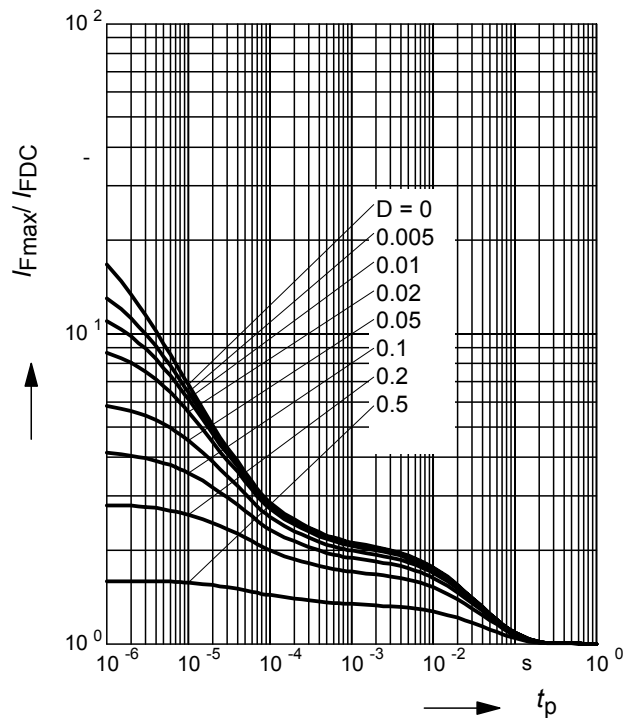
BAS16S



Permissible Pulse Load

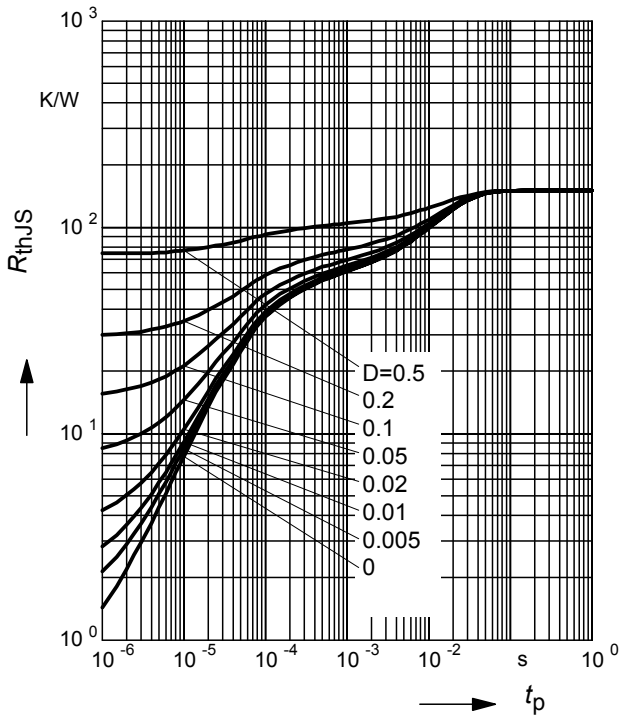
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16S



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

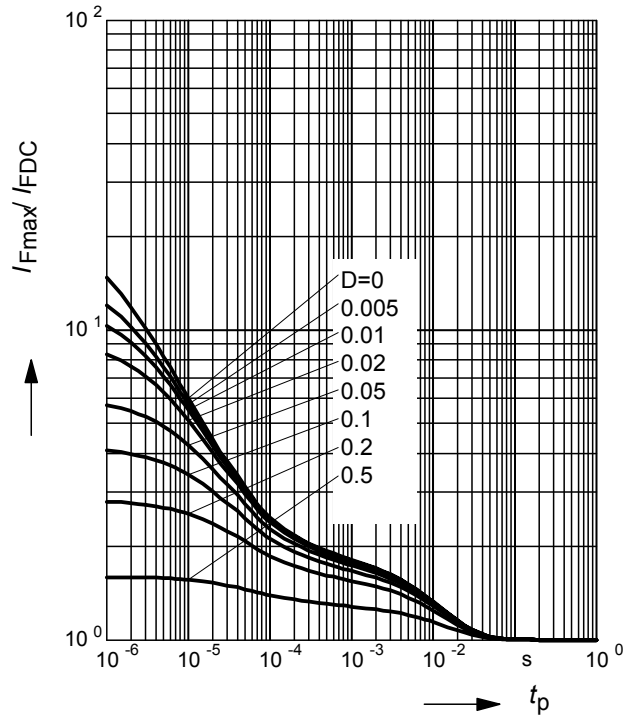
BAS16U



Permissible Pulse Load

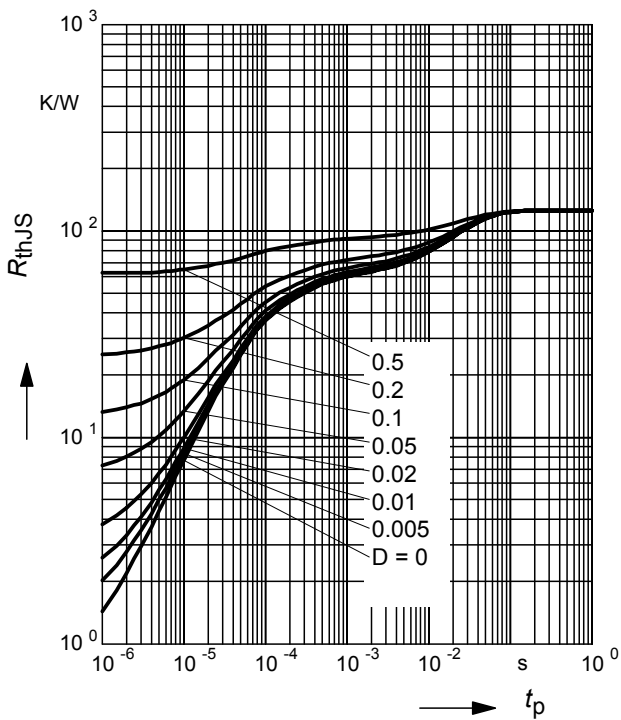
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16U



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

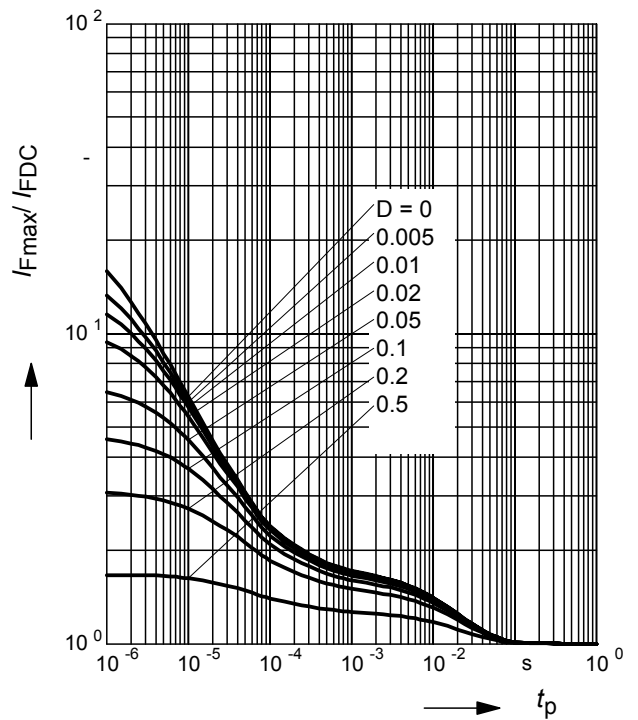
BAS16W



Permissible Pulse Load

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

BAS16W



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

For symmetric types no defined Pin 1 orientation in reel.



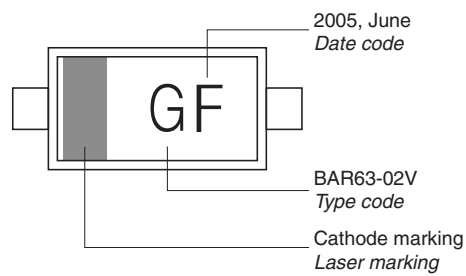
Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

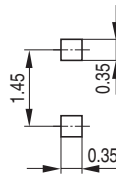
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 180 mm = 8.000 Pieces/Reel (2 mm Pitch)
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
 Reel 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, SC75¹⁾) CES-Code

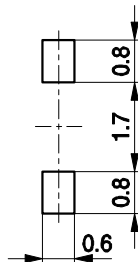
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01 | a | p | A | P | a | p | A | P | a | p | A | P |
| 02 | b | q | B | Q | b | q | B | Q | b | q | B | Q |
| 03 | 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

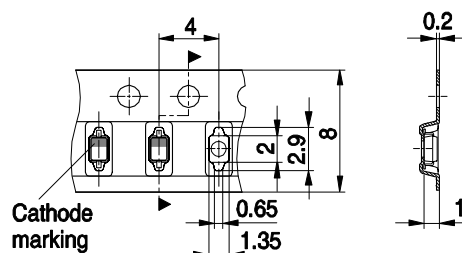


Marking Layout (Example)

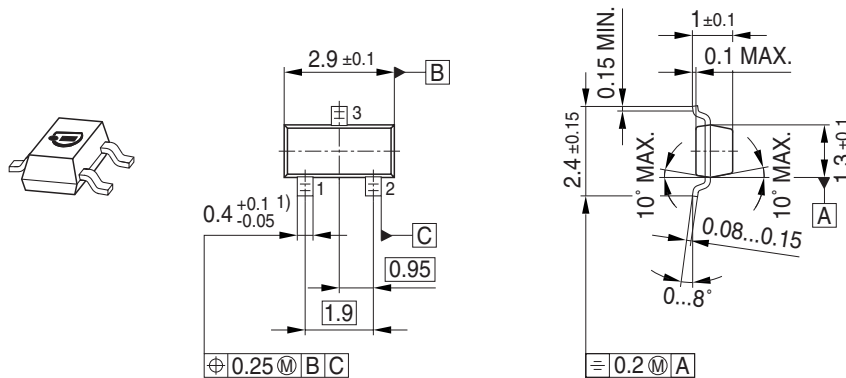


Standard Packing

Reel 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

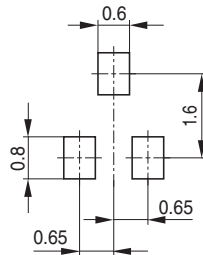
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



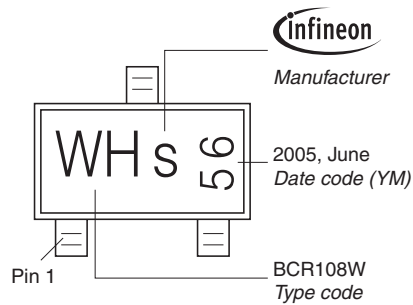
Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

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



Package Outline

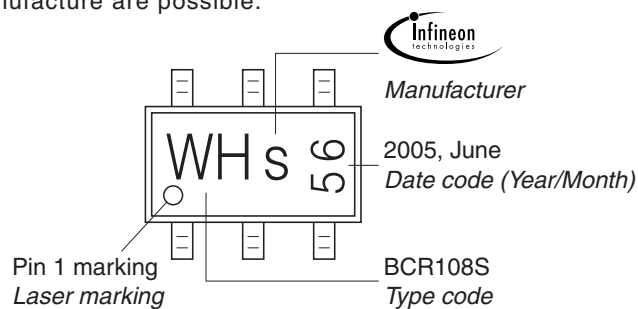


Foot Print



Marking Layout (Example)

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



Standard Packing

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

For symmetric types no defined Pin 1 orientation in reel.



Package Outline



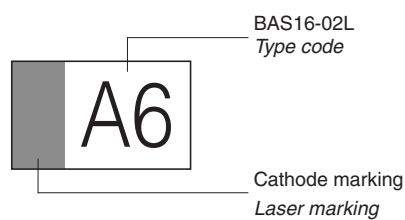
1) Dimension applies to plated terminal

Foot Print

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

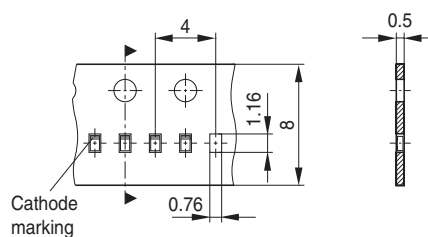


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 15.000 Pieces/Reel
 Reel \varnothing 330 mm = 50.000 Pieces/Reel (optional)



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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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