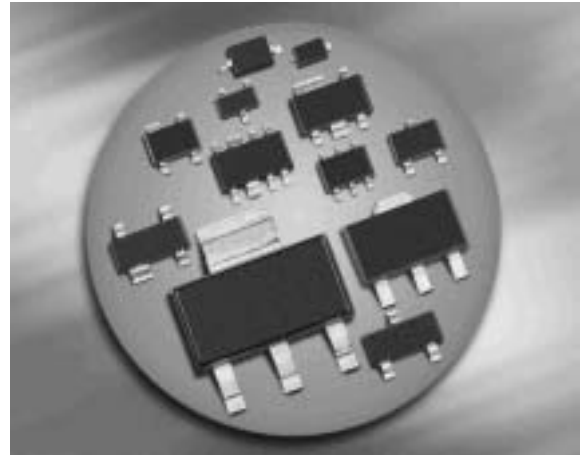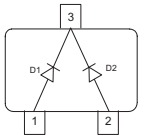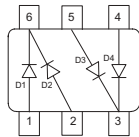**Silicon Switching Diode**

- For high-speed switching applications
- Common cathode configuration
- BAV70S / U: For orientation in reel see package information below
- Pb-free (RoHS compliant) package[1]
- Qualified according AEC Q101

BAV70   **BAV70S**
BAV70W   **BAV70U**

Type	Package	Configuration	Marking
BAV70	SOT23	common cathode	A4s
BAV70S	SOT363	double common cathode	A4s
BAV70U	SC74	double common cathode	A4s
BAV70W	SOT323	common cathode	A4s

[1]Pb-containing package may be available upon special request

2007-09-19

Maximum Ratings at T_A = 25°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	200	mA
Non-repetitive peak surge forward current	I_{FSM}		A
t = 1 µs		4.5	
t = 1 ms		1	
t = 1 s single		0.5	
t = 1 s double		0.75	
Total power dissipation	P_{tot}		mW
BAV70, $T_S \le 33$°C		250	
BAV70S, $T_S \le 85$°C		250	
BAV70U, $T_S \le 90$°C		250	
BAV70W, $T_S \le 103$°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
BAV70		≤ 460	
BAV70S		≤ 260	
BAV70U		≤ 240	
BAV70W		≤ 190	

[1] For calculation of R_{thJA} please refer to Application Note Thermal Resistance

2   2007-09-19

Electrical Characteristics at $T_A = 25°C$, unless otherwise specified

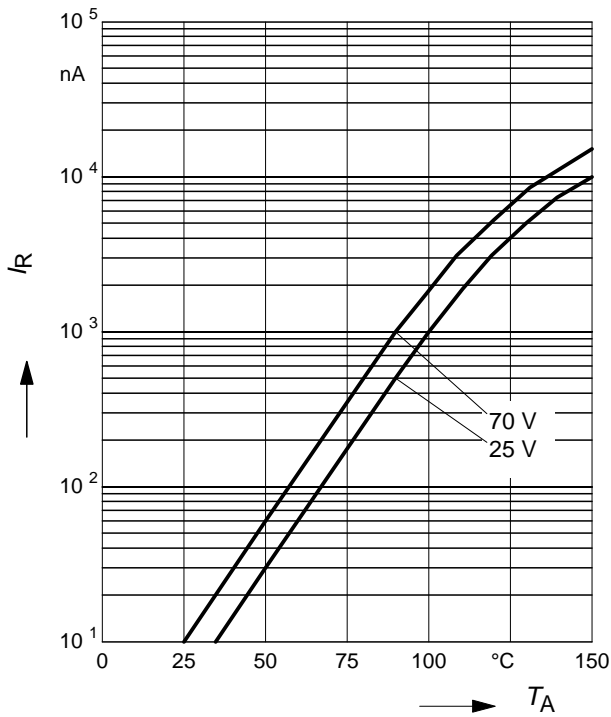| Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 100$ µA	$V_{(BR)}$	85	-	-	V
Reverse current $V_R = 70$ V $V_R = 25$ V, $T_A = 150$ °C $V_R = 70$ V, $T_A = 150$ °C	I_R	- - -	- - -	0.15 30 50	µA
Forward voltage $I_F = 1$ mA $I_F = 10$ mA $I_F = 50$ mA $I_F = 100$ mA $I_F = 150$ mA	V_F	- - - - -	- - - - -	715 855 1000 1200 1250	mV
AC Characteristics					
Diode capacitance $V_R = 0$ V, $f = 1$ MHz	C_T	-	-	1.5	pF
Reverse recovery time $I_F = 10$ mA, $I_R = 10$ mA, measured at $I_R = 1$mA , $R_L = 100$ Ω	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time

EHN00019
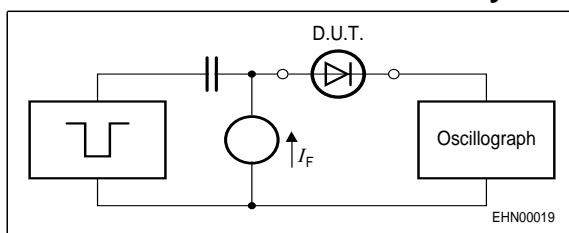
Pulse generator: $t_p = 100$ns, $D = 0.05$, $t_r = 0.6$ns, $R_i = 50$Ω

Oscillograph: $R = 50$Ω, $t_r = 0.35$ns, $C = 0.05$pF

3   2007-09-19

Reverse current $I_R = f(T_A)$

V_R = Parameter

Forward Voltage $V_F = f(T_A)$

I_F = Parameter

BAV 70   EHB00068

I_F = 100 mA

10 mA

1 mA

0.1 mA
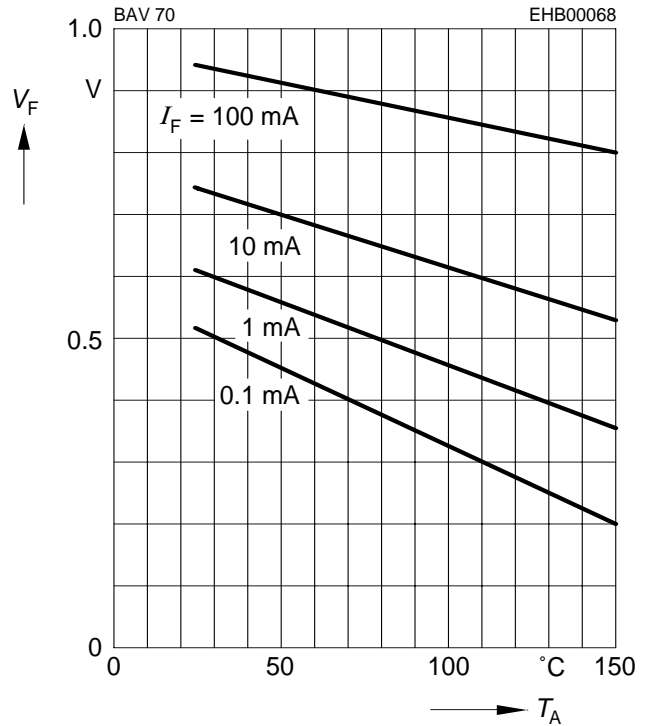
Forward current $I_F = f(V_F)$

$T_A = 25°C$

BAV 70   EHB00066

typ   max

Forward current $I_F = f(T_S)$
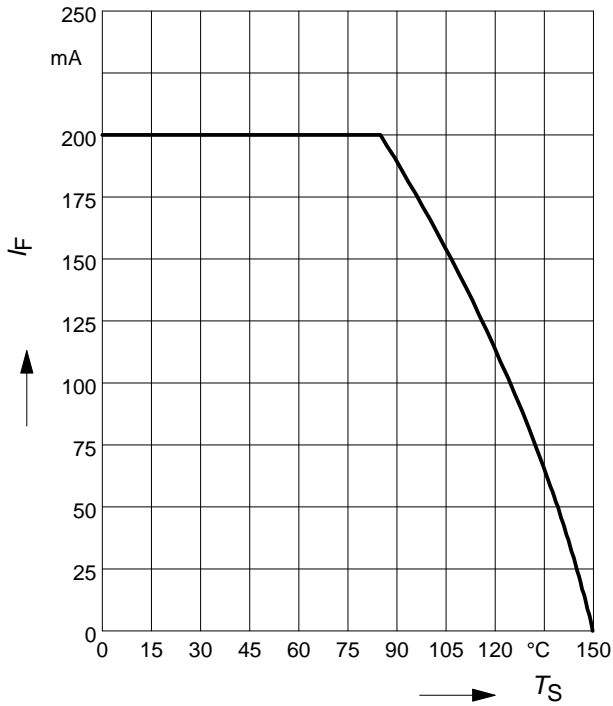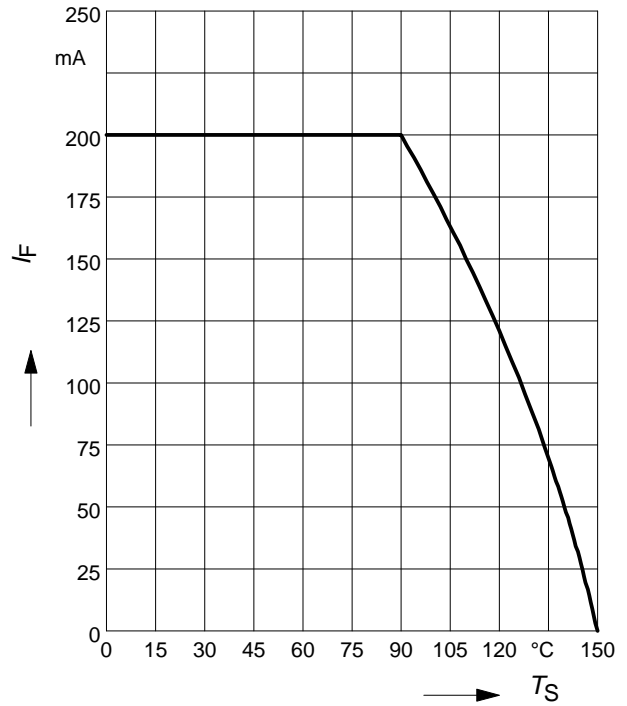
BAV70

4   2007-09-19
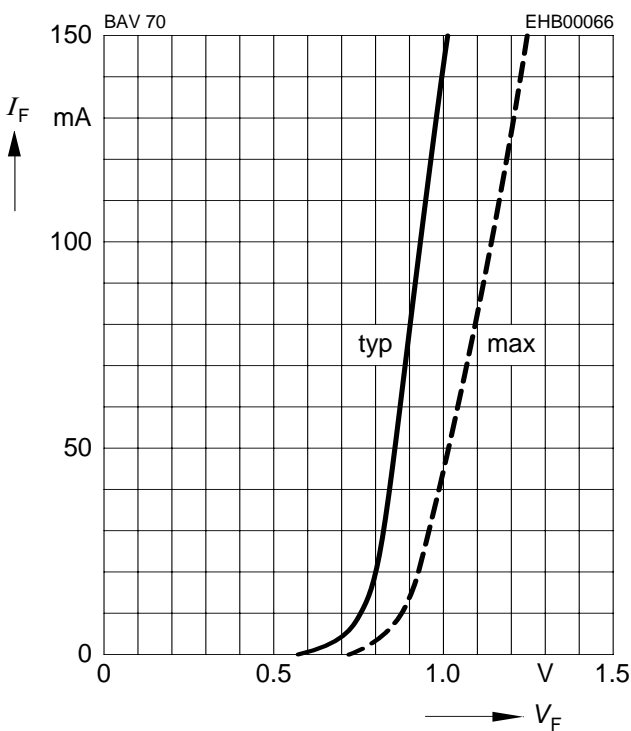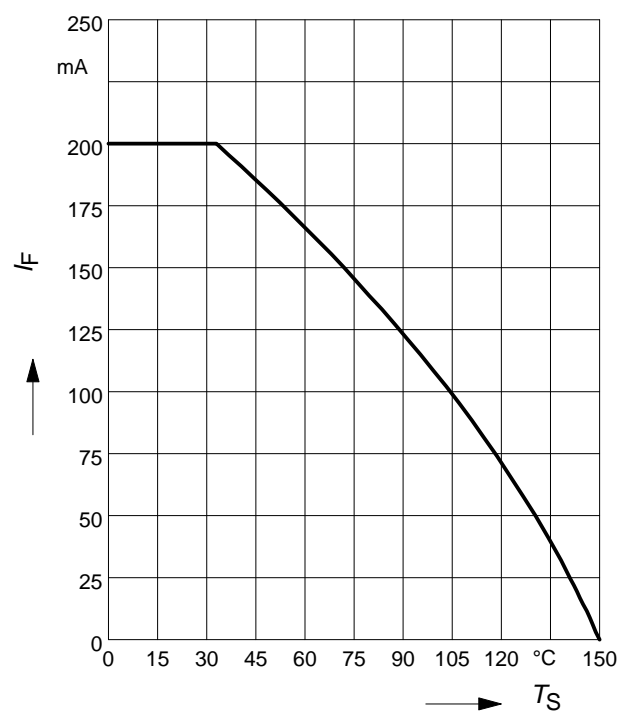
Forward current $I_F = f(T_S)$

BAV70S

Forward current $I_F = f(T_S)$

BAV70U

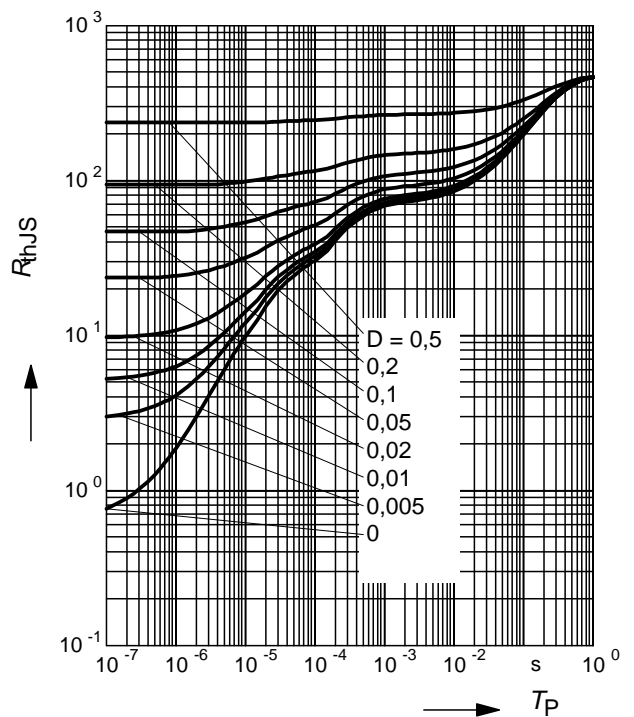**Forward current** $I_F = f(T_S)$

BAV70W

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

BAV70

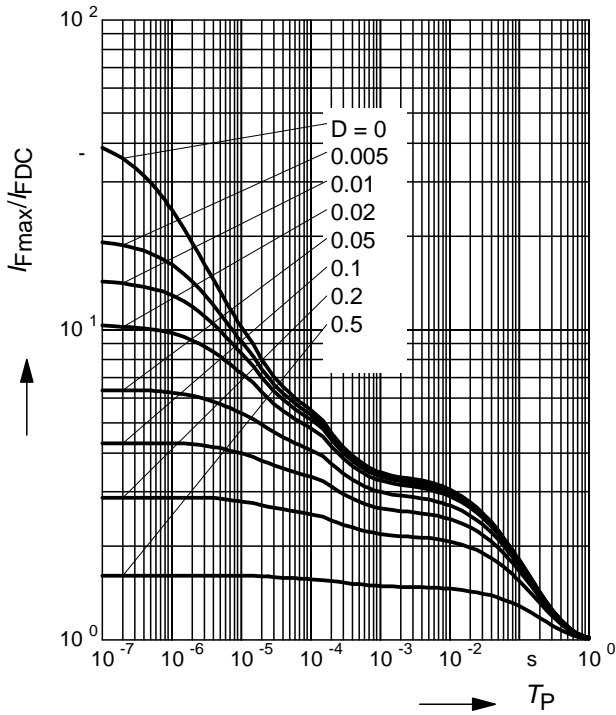5   2007-09-19
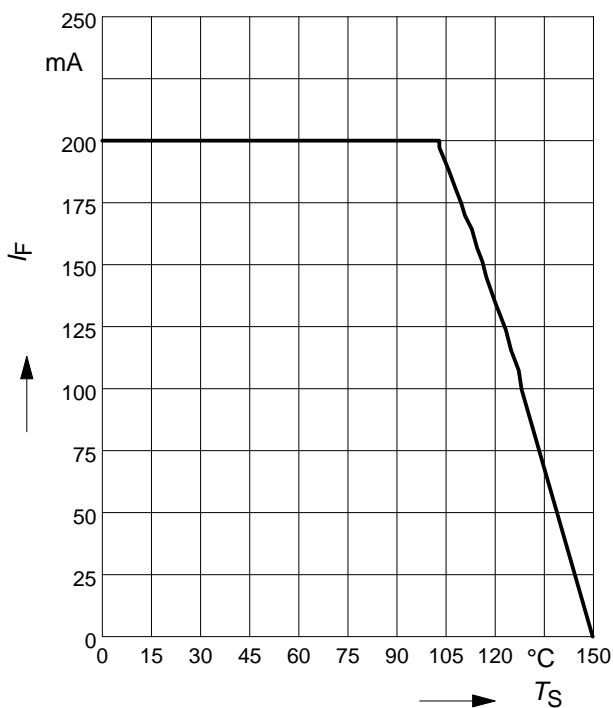
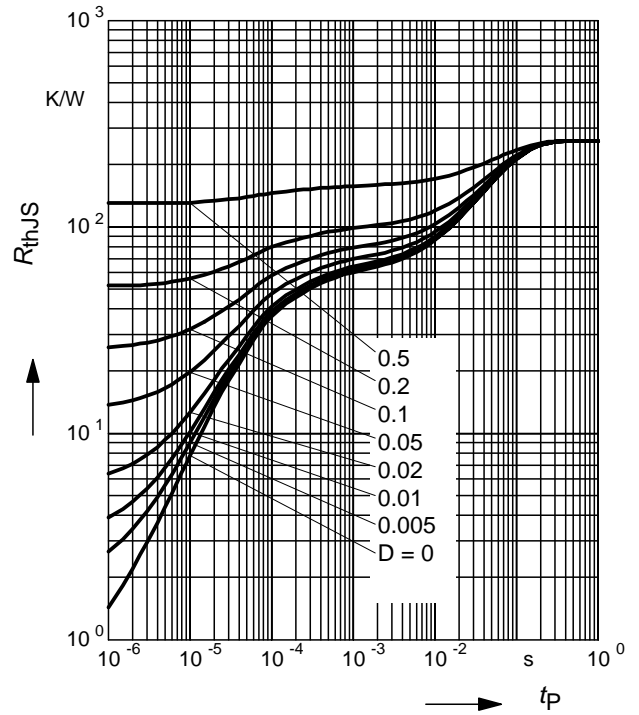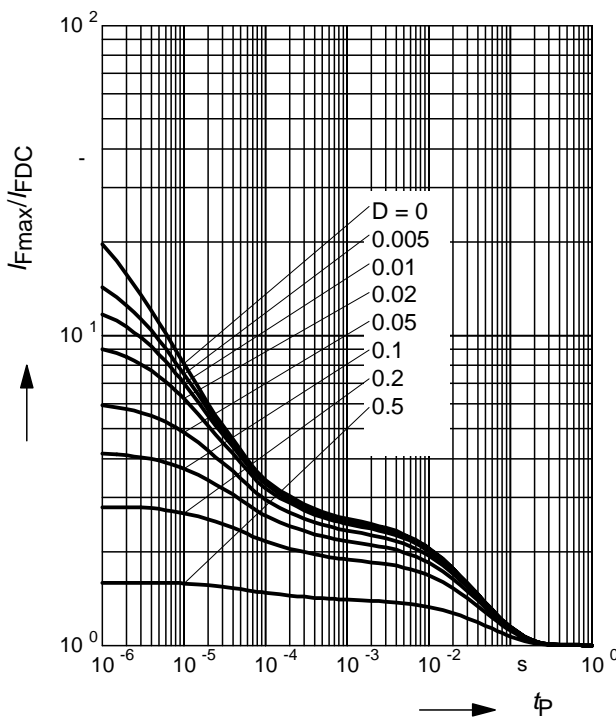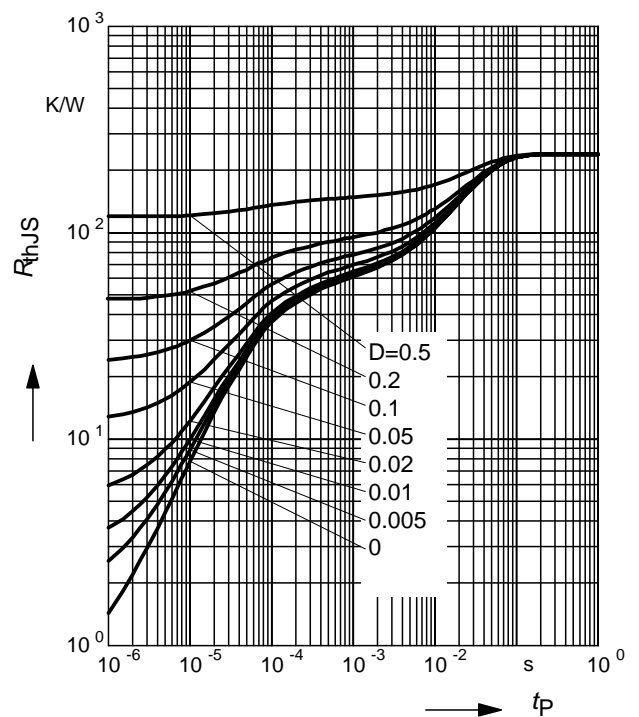**Permissible Pulse Load**

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

BAV70

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

BAV70S

Permissible Pulse Load

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

BAV70S

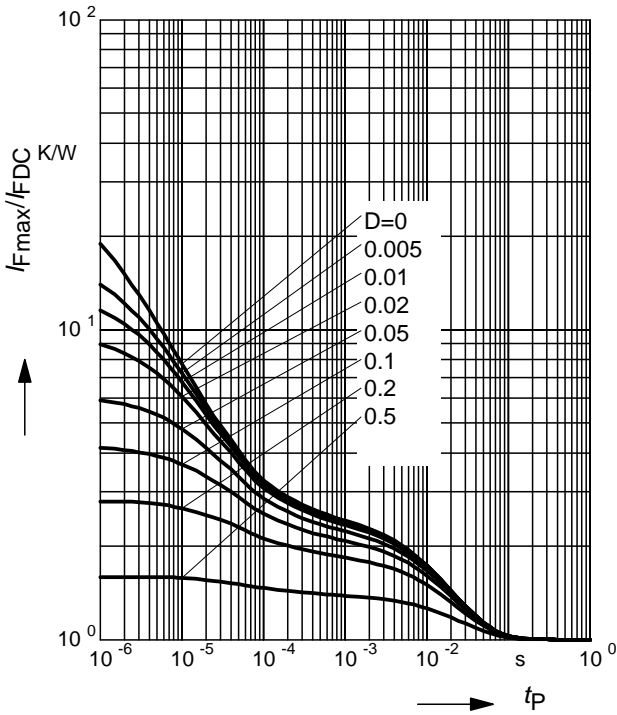**Permissible Puls Load** $R_{thJS} = f(t_p)$

BAV70U

6   2007-09-19
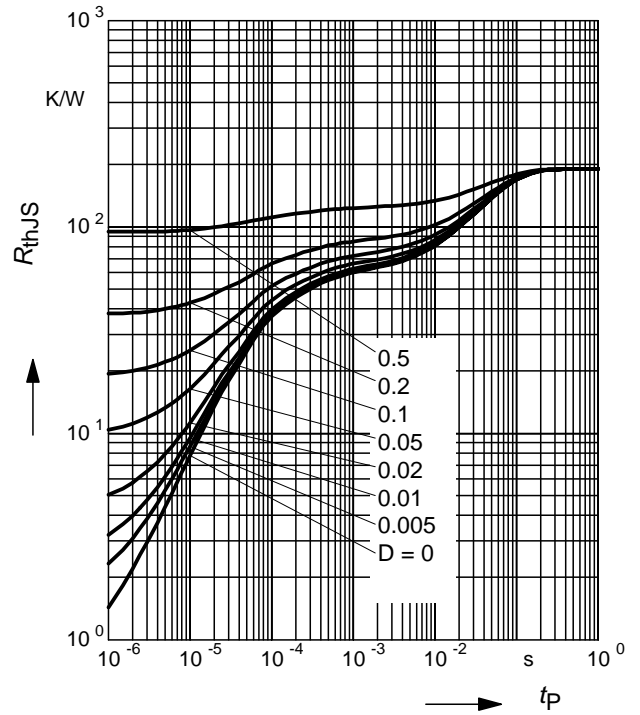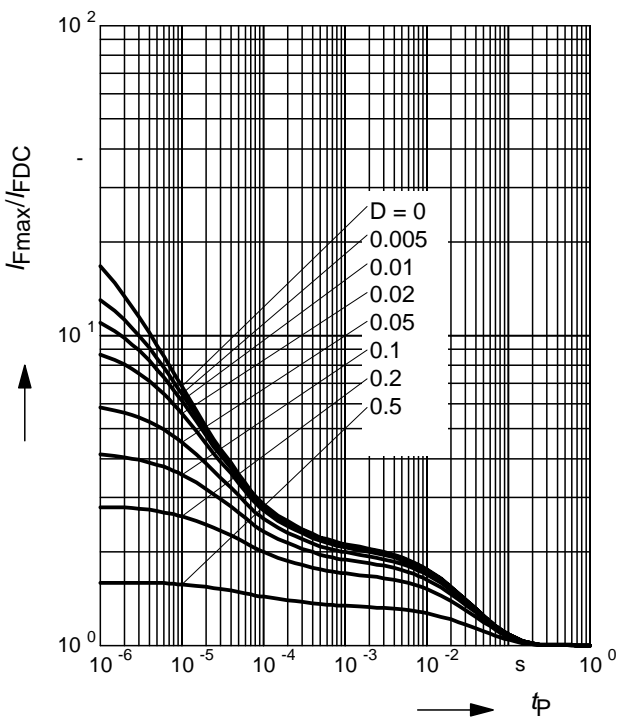
Permissible Pulse Load

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

BAV70U

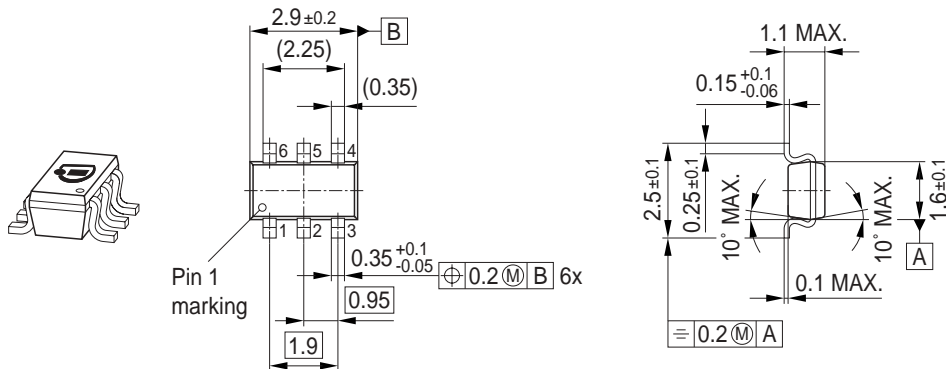
Permissible Puls Load $R_{thJS} = f (t_p)$

BAV70W

Permissible Pulse Load

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

BAV70W
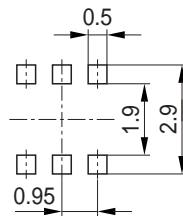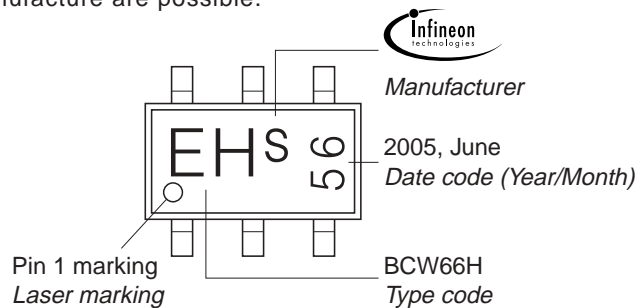

7   2007-09-19

Package Outline

Foot Print

Marking Layout (Example)

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

Manufacturer

2005, June
Date code (Year/Month)
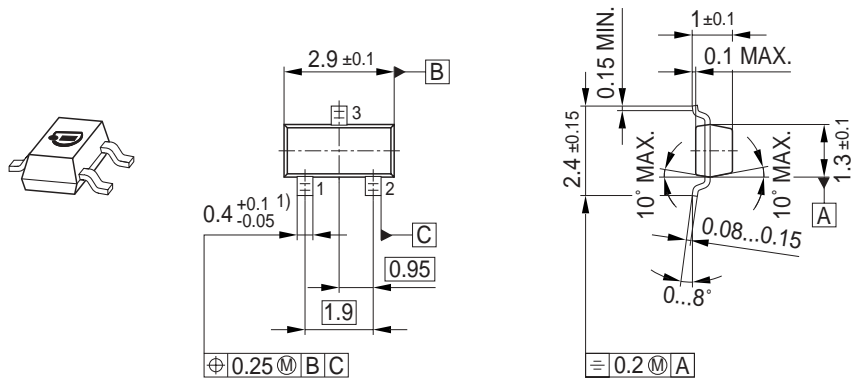
Pin 1 marking
Laser marking

BCW66H
Type code

Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel
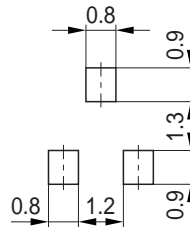
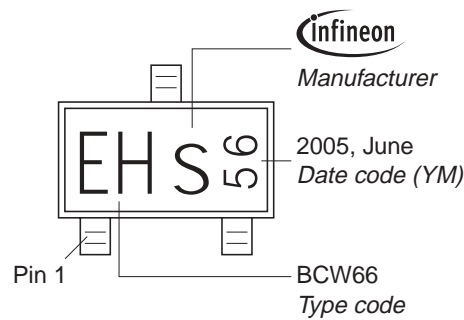For symmetric types no defined Pin 1 orientation in reel.

Pin 1
marking

8

2007-09-19

Package Outline

2.9 ±0.1

B

3

0.4 +0.1 -0.05 1)

1

2

C

0.95

1.9
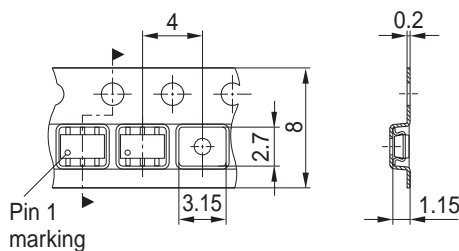
1) Lead width can be 0.6 max. in dambar area

⊕ 0.25 Ⓜ B C

0.15 MIN.

1 ±0.1

0.1 MAX.

2.4 ±0.15

10° MAX.

10° MAX.

1.3 ±0.1

A

0.08...0.15

0...8°

⊟ 0.2 Ⓜ A

Foot Print

0.8

0.9

1.3

0.8   1.2

0.9

Marking Layout (Example)

Infineon

Manufacturer

EH S 56

2005, June
Date code (YM)

Pin 1

BCW66
Type code

Standard Packing

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

4

0.9

0.2

2.13

2.65

8

Pin 1

3.15

1.15

2007-09-19

Package Outline

Foot Print

Marking Layout (Example)

Manufacturer

2005, June
Date code (YM)

Pin 1

BCR108W
Type code

Standard Packing

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

Pin 1

10

2007-09-19

Package Outline

2 ±0.2

0.2 +0.1 -0.05

6x

⊕ 0.1 Ⓜ

6 5 4

Pin 1 marking

1 2 3

0.65 0.65

0.9 ±0.1

0.1 MAX.

◠ 0.1

A

2.1 ±0.1

0.1 MIN.

1.25 ±0.1

0.15 +0.1 -0.05

⊟ 0.2 Ⓜ A

Foot Print

0.3

0.9 0.7

1.6

0.65

0.65

Marking Layout (Example)

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

Infineon technologies

Manufacturer

WH s 5 6

2005, June
Date code (Year/Month)

Pin 1 marking
Laser marking

BCR108S
Type code

Standard Packing

Reel ⌀180 mm = 3.000 Pieces/Reel
Reel ⌀330 mm = 10.000 Pieces/Reel
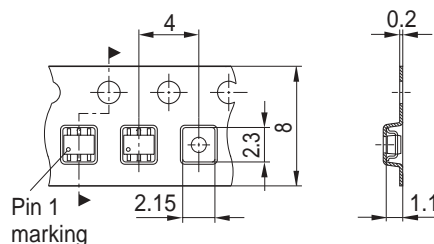
For symmetric types no defined Pin 1 orientation in reel.

4

0.2

8

2.3

Pin 1 marking

2.15

1.1

11

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