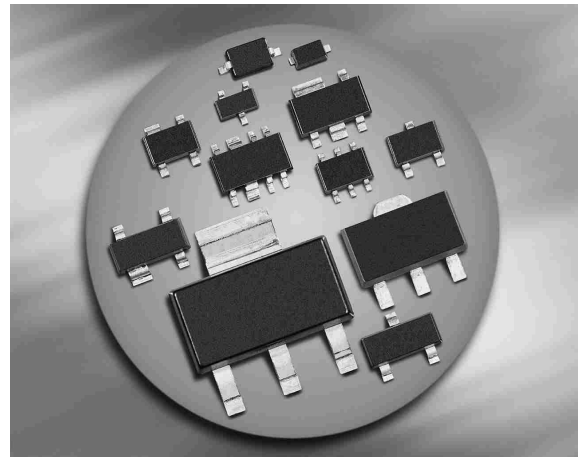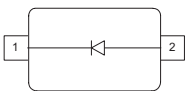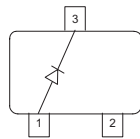**Silicon Schottky Diode**

- 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

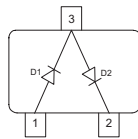- Pb-free (RoHS compliant) package

- Qualified according AEC Q101[1]

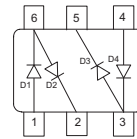| BAS170W	BAS70	BAS70-04	BAS70-04S	BAS70-05
BAS70-02L		BAS70-04W		BAS70-05W
BAS70-02W				
BAS70-02V				
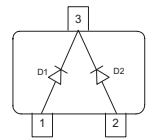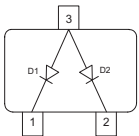
BAS70-06 **BAS70-07**
BAS70-06W **BAS70-07W**
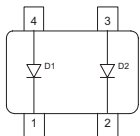
[1]BAS70-02L is not qualified according AEC Q101

2014-02-13

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
BAS70-02V	SC79	single	0.6	c
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

* Not for new design

Maximum Ratings at T_A = 25 °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 $t \leq 10$ms	I_{FSM}	100	
Total power dissipation	P_{tot}		mW
BAS70, BAS70-07, $T_S \leq 72$ °C		250	
BAS70-02L, $T_S \leq 117$ °C		250	
BAS70-02W, -02V, $T_S \leq 107$ °C		250	
BAS70-04, BAS70-06, $T_S \leq 48$ °C		250	
BAS70-04S/W/-06W, BAS170W, $T_S \leq 97$ °C		250	
BAS70-05, $T_S \leq 22$ °C		250	
BAS70-05W, $T_S \leq 90$ °C		250	
BAS70-07W, $T_S \leq 114$ °C		250	
Junction temperature	T_J	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{Stg}	-55 ... 150	

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Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1]	R_{thJS}		K/W
BAS70, BAS70-07		≤ 310	
BAS70-02L		≤ 130	
BAS70-02W, -02V		≤ 170	
BAS70-04, BAS70-06		≤ 410	
BAS70-04S/W, BAS70-06W		≤ 210	
BAS70-05		≤ 510	
BAS70-05W		≤ 240	
BAS70-07W		≤ 145	
BAS170W		≤ 190	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 10 µA	$V_{(BR)}$	70	-	-	V
Reverse current V_R = 50 V	I_R	-	-	0.1	µA
Forward voltage I_F = 1 mA I_F = 10 mA I_F = 15 mA	V_F	 300 600 720	 375 705 880	 410 750 1000	mV
Forward voltage matching[2] I_F = 10 mA	ΔV_F	-	-	20	

[1]For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

[2]ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

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

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

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Diode capacitance $C_T = f(V_R)$

f = 1MHz
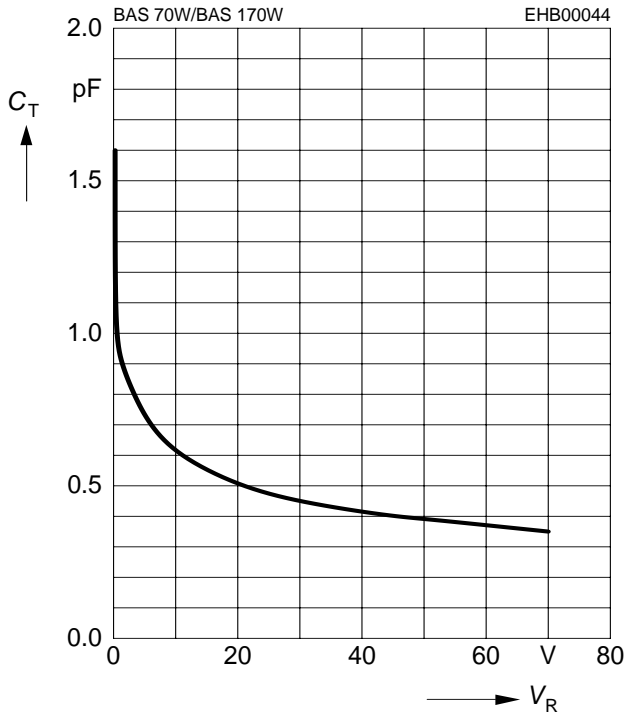
Forward resistance $r_f = f(I_F)$

f = 10 kHz
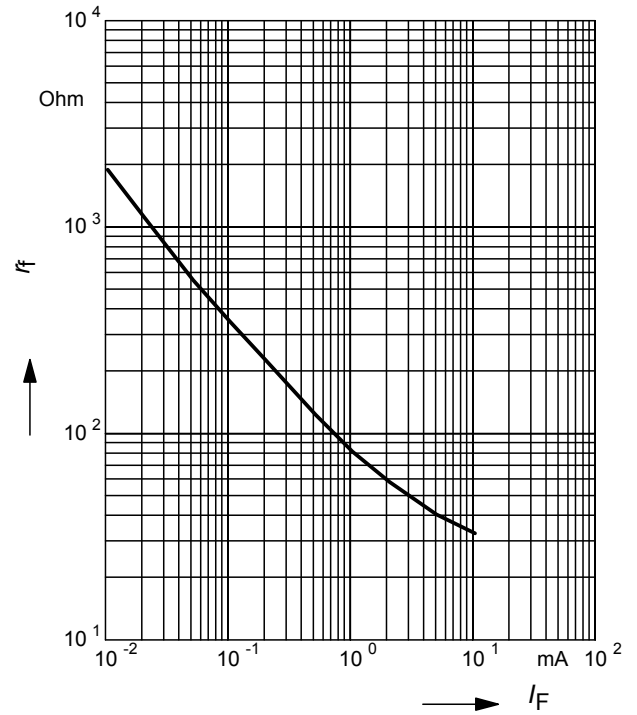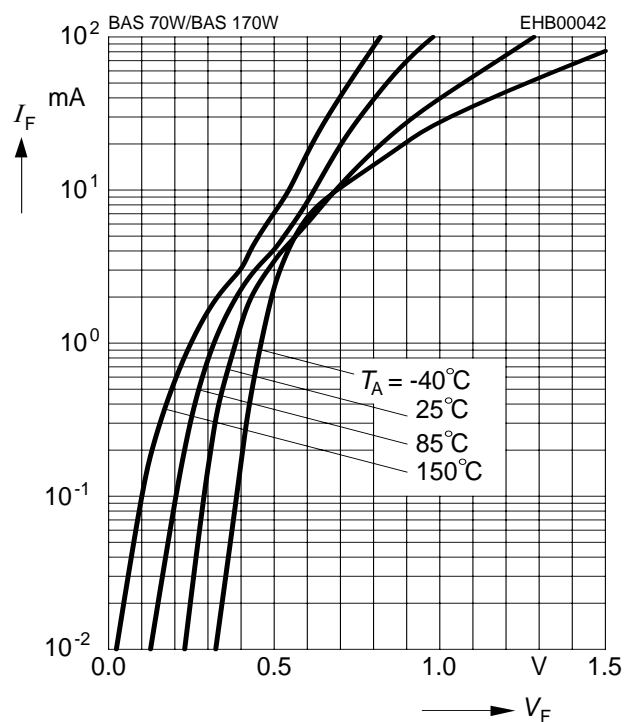

Reverse current $I_R = f(V_R)$

T_A = Parameter
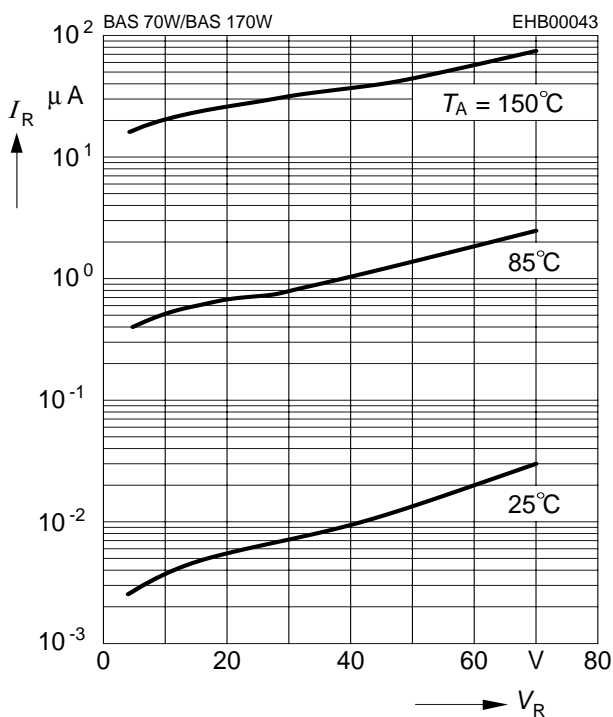
Forward current $I_F = f(V_F)$

T_A = Parameter

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Forward current $I_F = f(T_S)$

BAS70, BAS70-07

Forward current $I_F = f(T_S)$

BAS70-02L
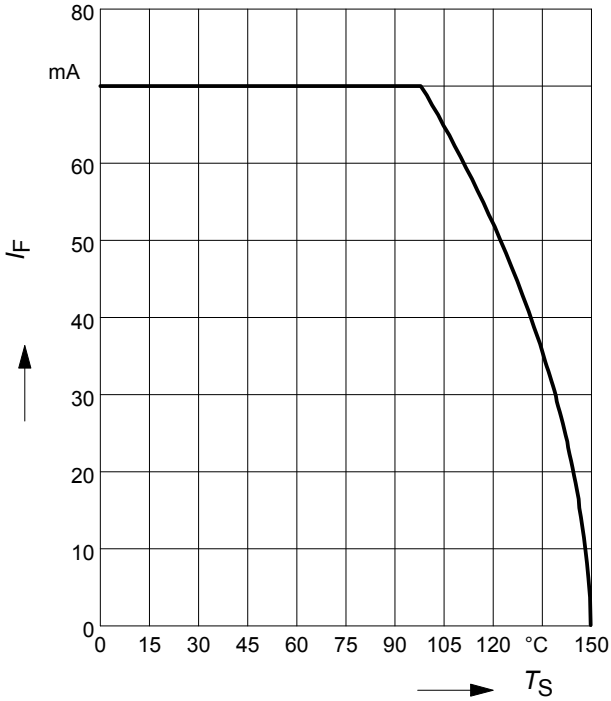

Forward current $I_F = f(T_S)$
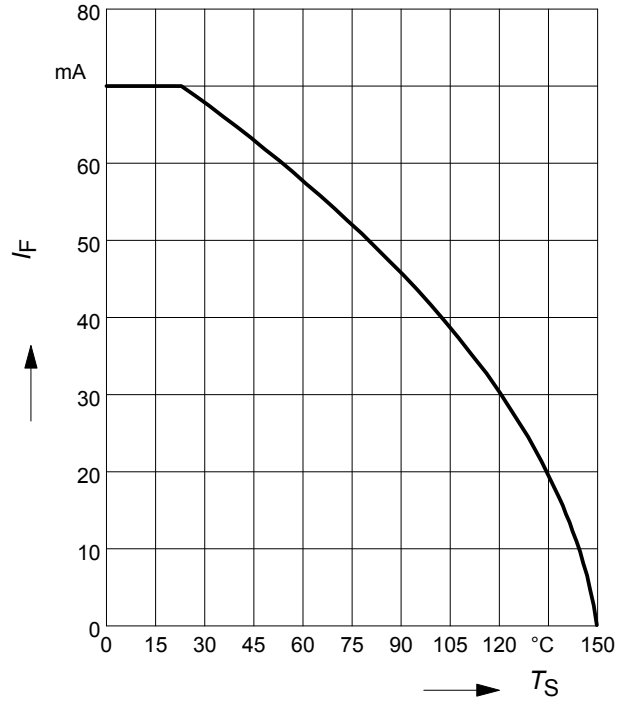
BAS70-02W, -02V

Forward current $I_F = f(T_S)$
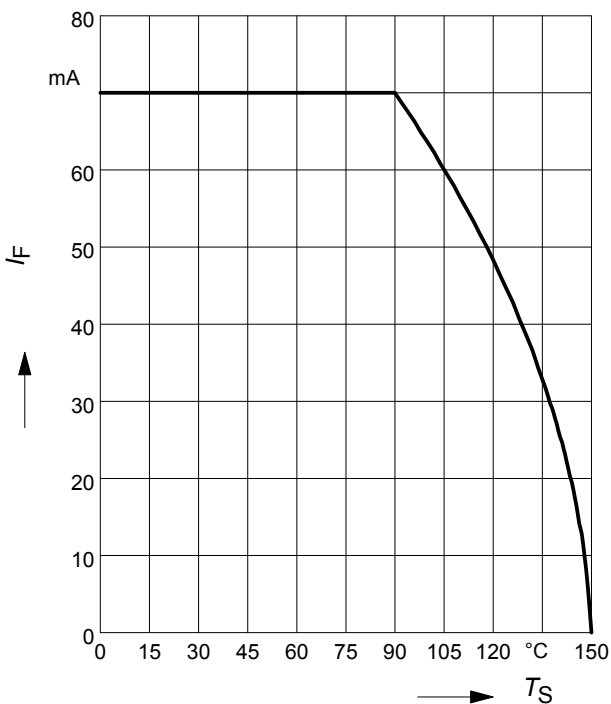
BAS70-04, BAS70-06

2014-02-13

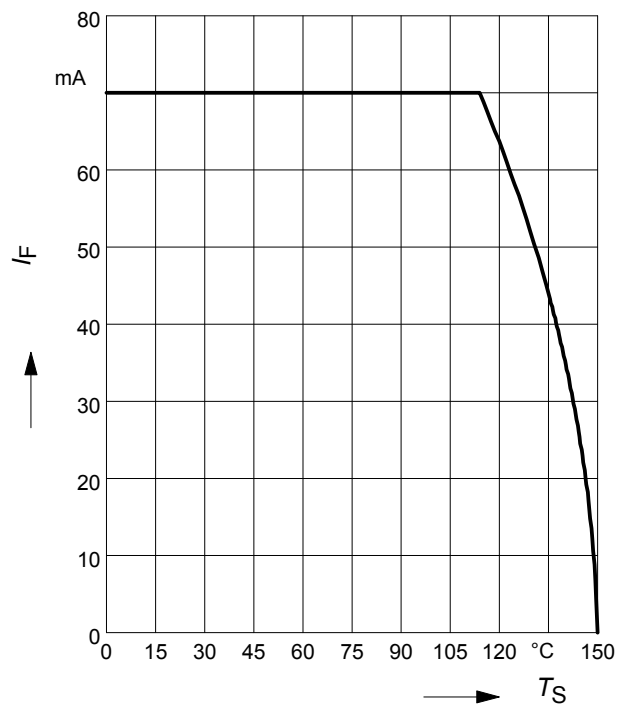**Forward current** $I_F = f(T_S)$

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

Forward current $I_F = f(T_S)$

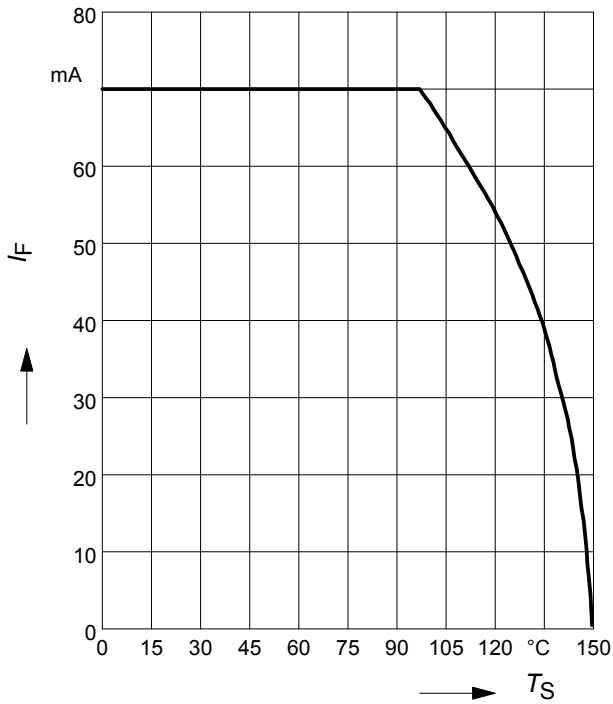BAS70-05

Forward current $I_F = f(T_S)$

BAS70-05W

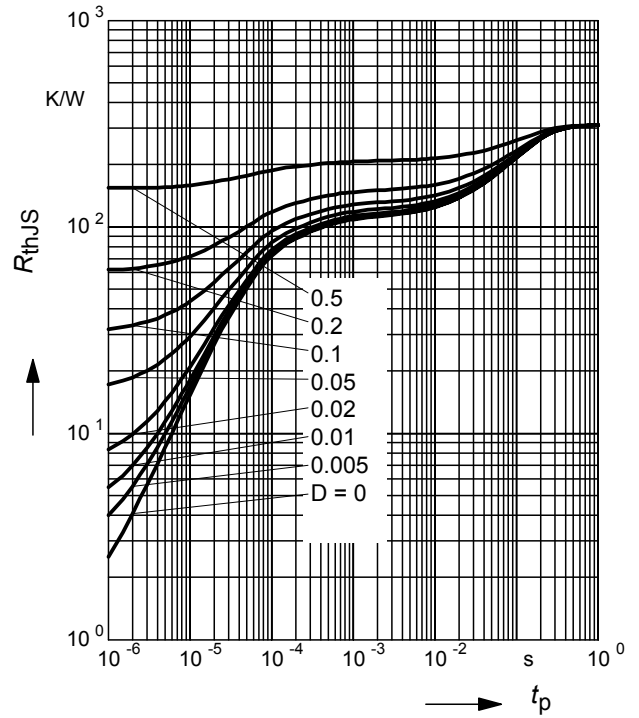**Forward current** $I_F = f(T_S)$

BAS70-07W

2014-02-13

Forward current $I_F = f(T_S)$

BAS170W

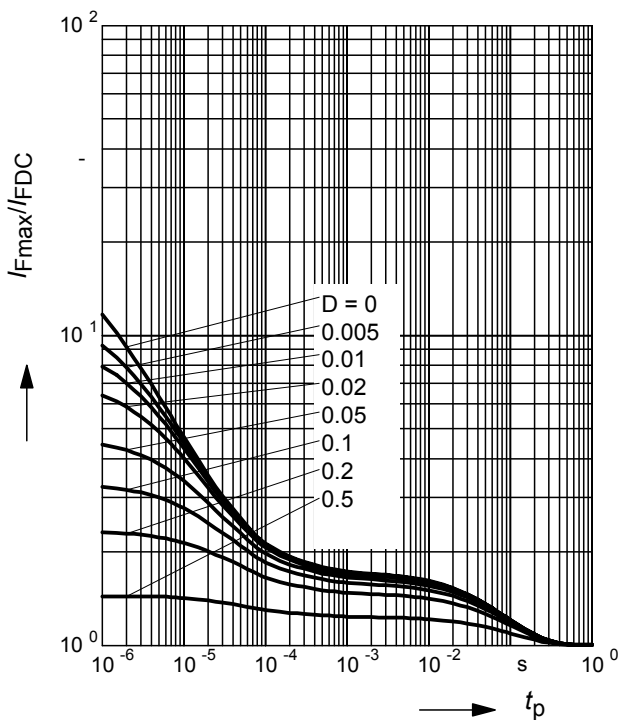**Permissible Puls Load** $R_{thJS} = f(t_p)$
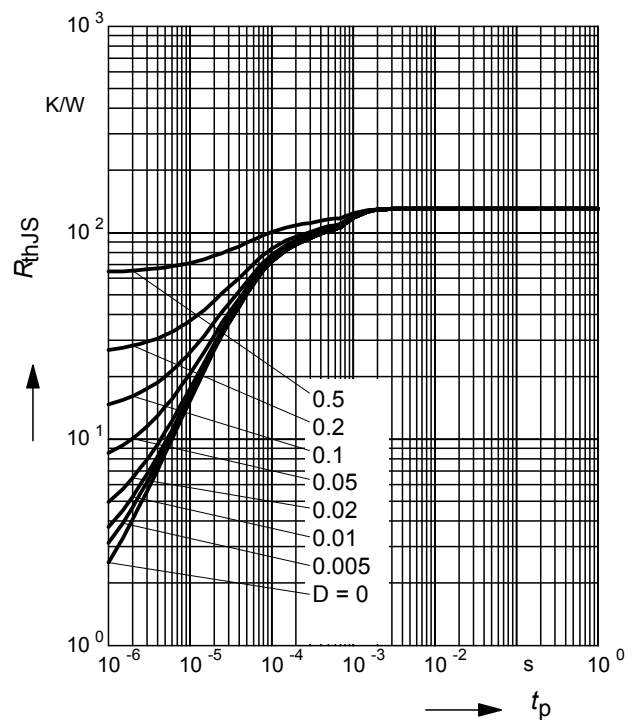
BAS70

Permissible Pulse Load

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

BAS70

Permissible Puls Load $R_{thJS} = f(t_p)$
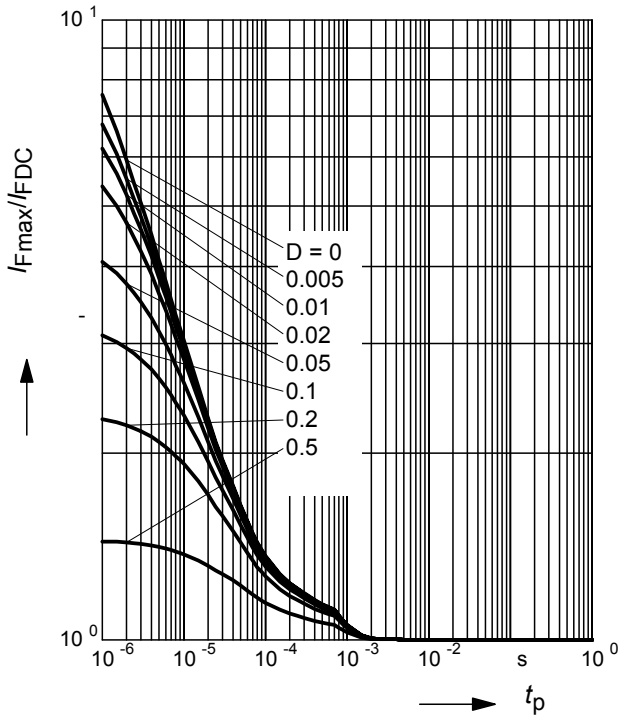
BAS70-02L

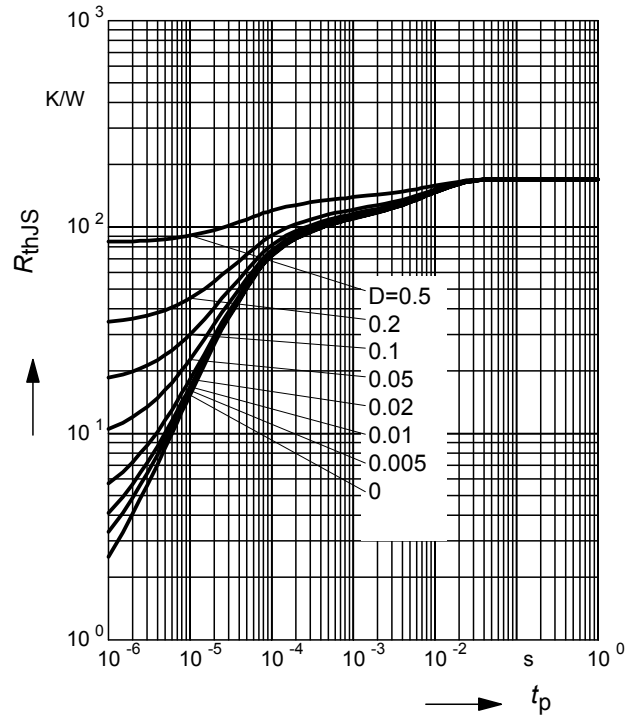2014-02-13

Permissible Pulse Load

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

BAS70-02L

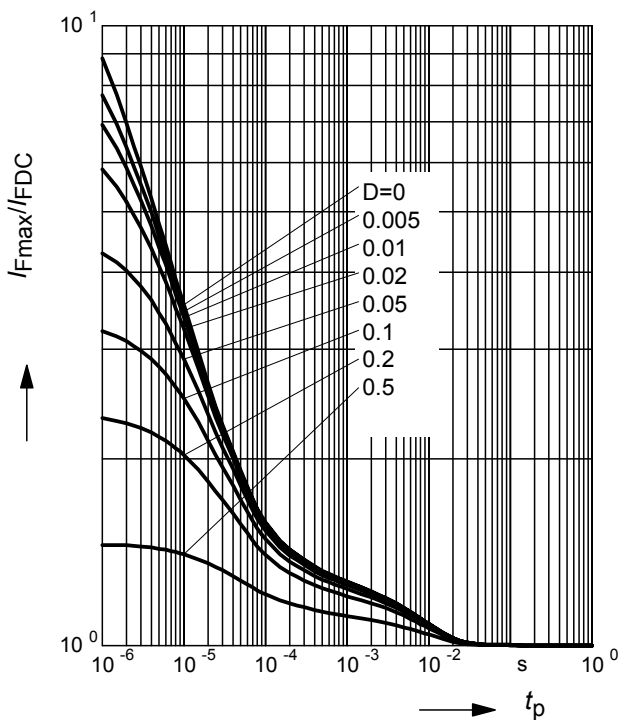**Permissible Puls Load** $R_{thJS} = f (t_p)$

BAS70-02W, -02V

Permissible Pulse Load

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

BAS70-02W, -02V

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

BAS70-04, BAS70-06

2014-02-13

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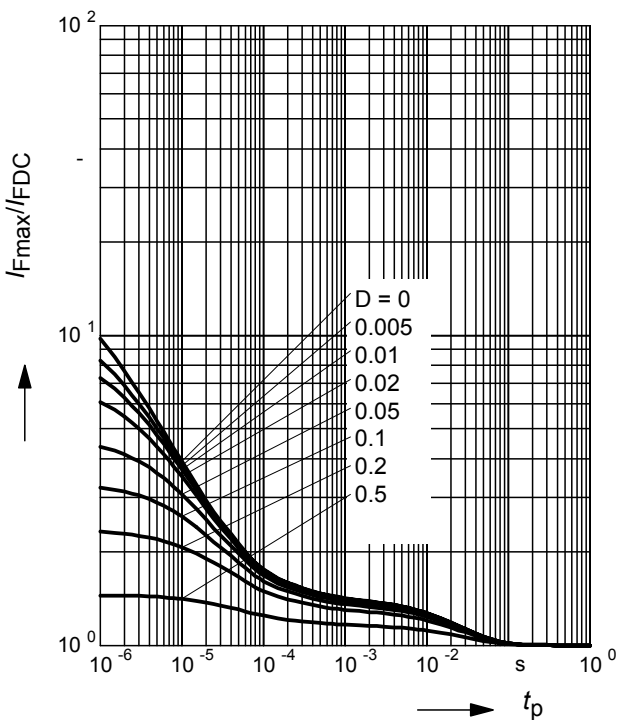
Permissible Puls Load $R_{thJS} = f(t_p)$

BAS70-04W, BAS70-06W

2014-02-13

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

$I_{Fmax}/ I_{FDC} = f (t_p)$
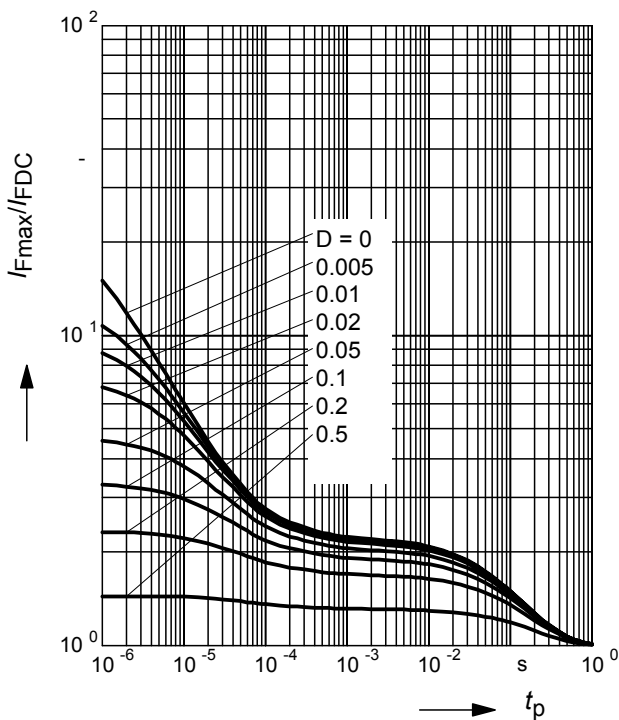
BAS70-05

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

BAS70-05W

11   2014-02-13

Permissible Pulse Load

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

BAS70-05W
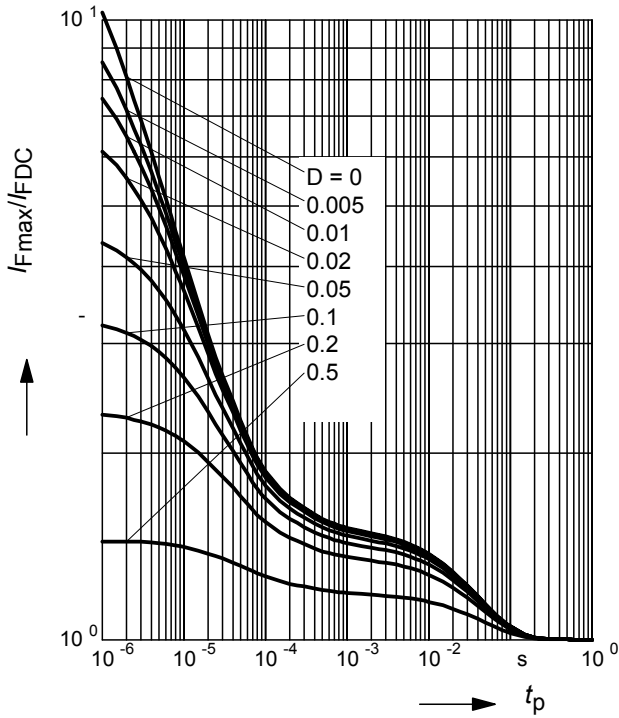
Permissible Puls Load $R_{thJS} = f(t_p)$
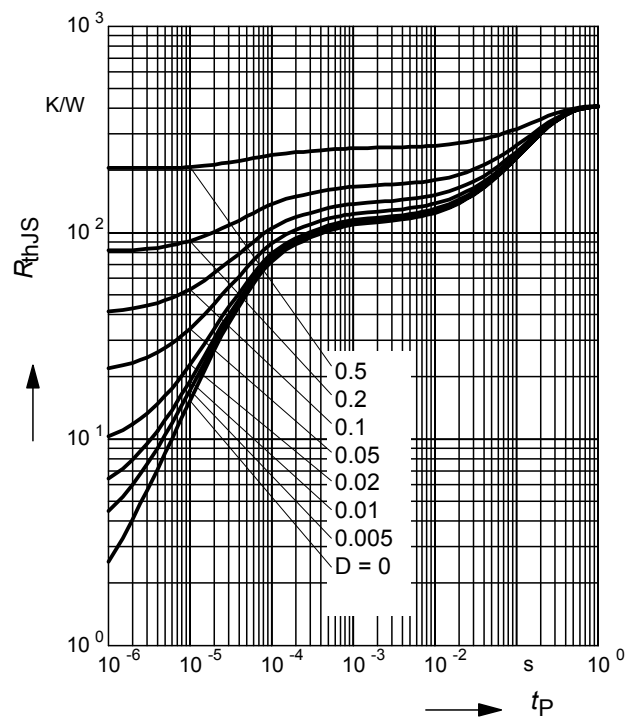
BAS70-07W
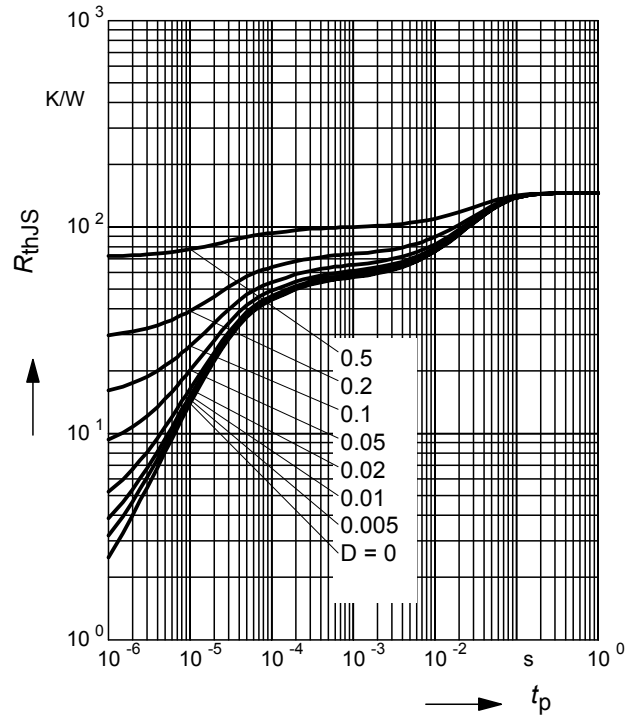
Permissible Pulse Load

$I_{Fmax}/I_{FDC} = f(t_p)$
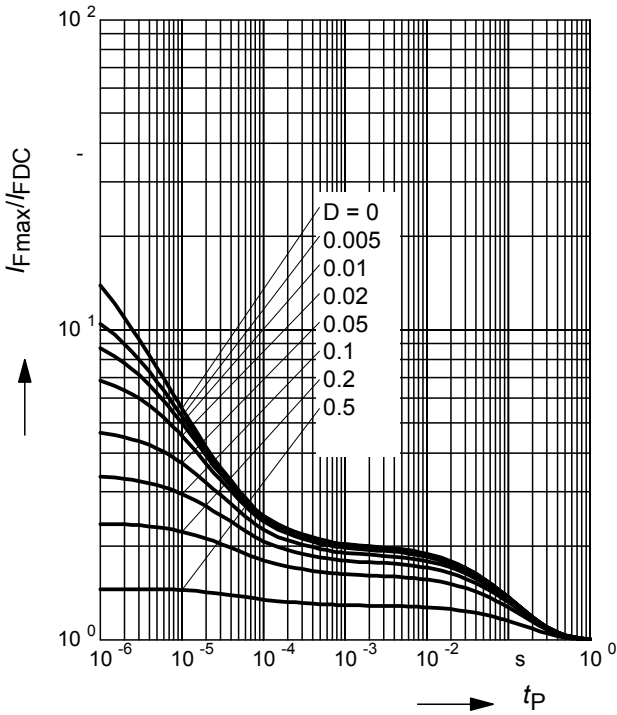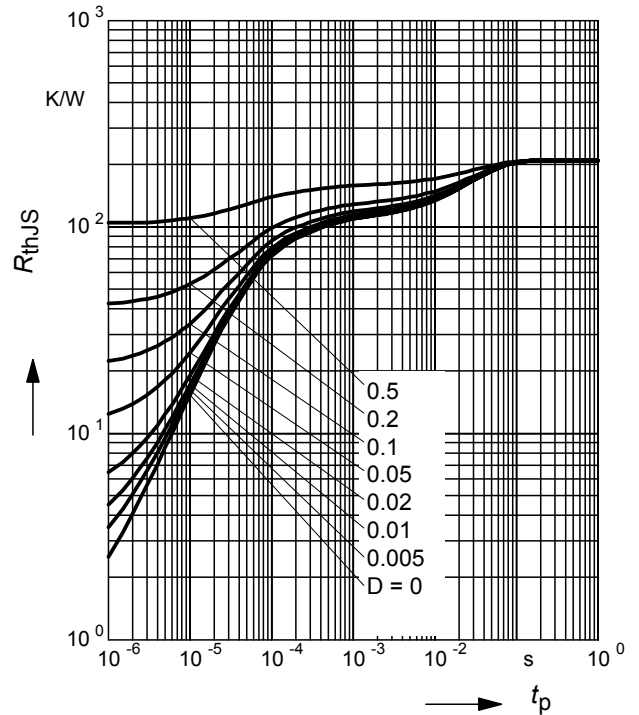
BAS70-07W
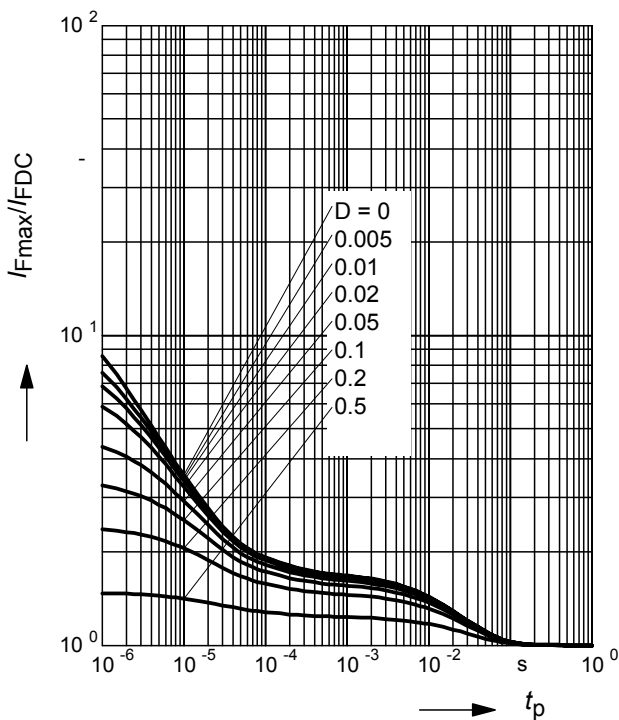
Permissible Puls Load $R_{thJS} = f(t_p)$

BAS170W

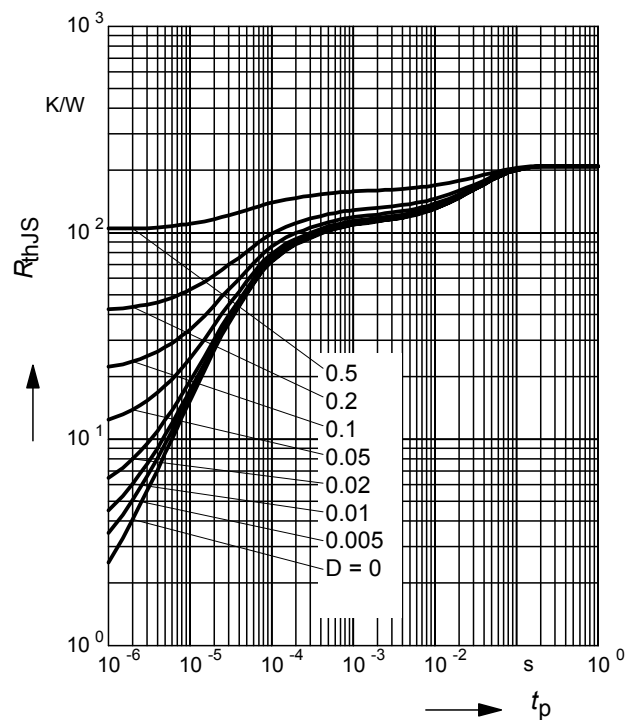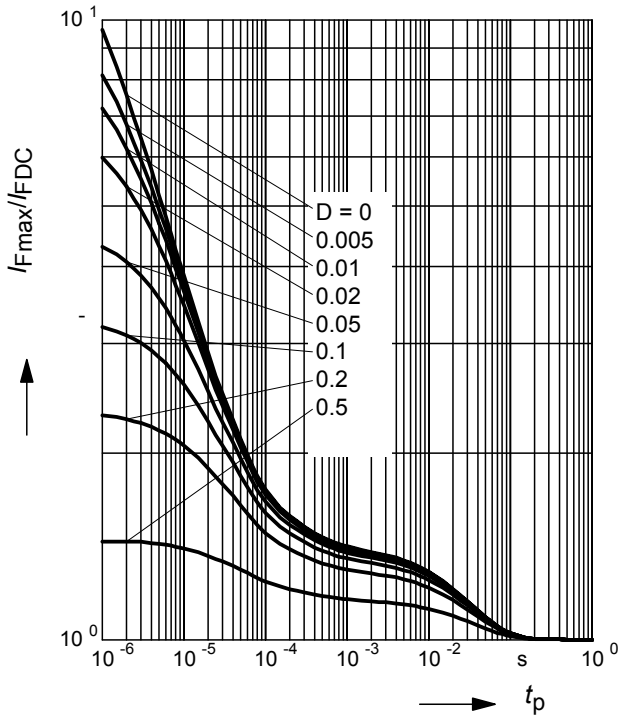2014-02-13
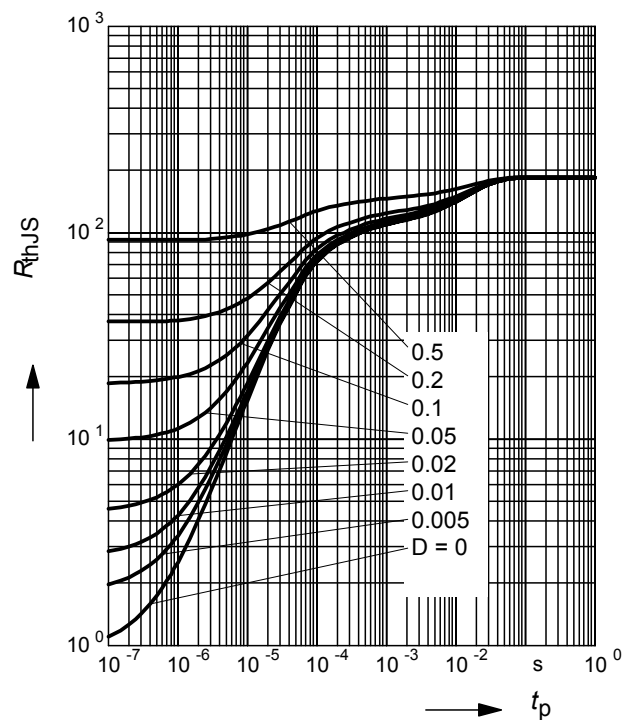
Permissible Pulse Load

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

BAS170W

Package Outline

Foot Print

Marking Layout (Example)

2005, June
Date code

GF

BAR63-02V
Type code

Cathode marking
Laser marking

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

Standard

Reel with 2 mm Pitch

Cathode marking

Cathode marking

Package Outline

0.8 ± 0.1

2

Cathode marking

0.3 ± 0.05

0.2 Ⓜ A

$0.13 \, {}^{+0.05}_{-0.03}$

A

1.7 MAX.

$10°$ MAX.

$7° \pm 1.5°$

1.3 ± 0.1

0.7 ± 0.1

0.2 ± 0.05

Foot Print

1.45

0.35

0.35

Marking Layout (Example)

GGF

2005, June
Date code

BAR63-02W
Type code

Cathode marking
Laser marking

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

Standard

4

1.45

2.5

8

Cathode marking

0.4

0.9

Reel with 2 mm Pitch

2

Cathode marking

0.2

0.7

2014-02-13

Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1]) 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.

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Package Outline

Foot Print
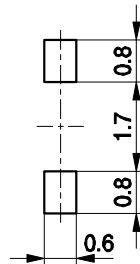
Marking Layout (Example)

BAR63-03W
Type code

Cathode marking
Color ink or laser marking

Standard Packing

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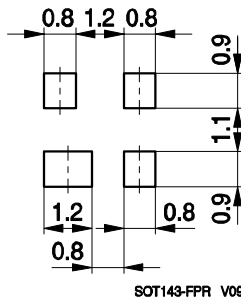Reel ø330 mm = 10.000 Pieces/Reel

Package Outline

Note: Mold flash, protrusions or gate burrs of 0,2 mm max. per side are not included

SOT143-PO V09

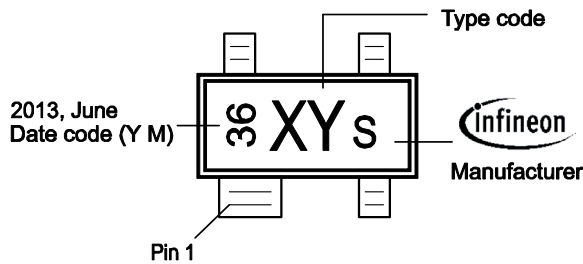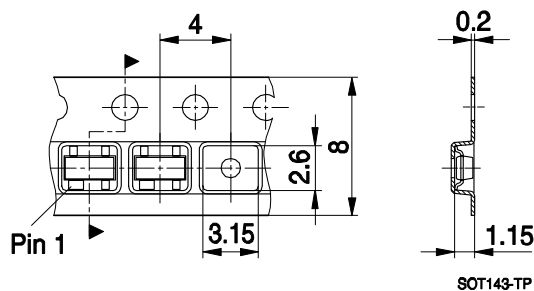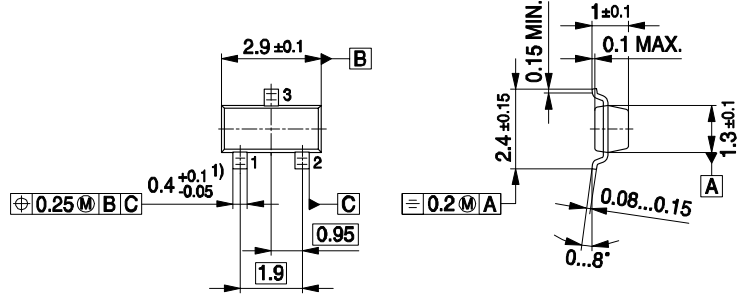## Foot Print

SOT143-FPR V09

Marking Layout (Example)

Type code

2013, June
Date code (Y M)

36 XY S

Manufacturer

Pin 1

Standard Packing

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

Pin 1

SOT143-TP

2014-02-13

Package Outline

2.9 ±0.1 B

3

0.4 +0.1 -0.05 1)

1 2

⊕ 0.25 Ⓜ B C

C

0.95

1.9

1 ±0.1

0.15 MIN.

0.1 MAX.

2.4 ±0.15

1.3 ±0.1

A

= 0.2 Ⓜ A

0.08...0.15

0...8°

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

SOT23-PO V08

Foot Print

0.8

0.9

1.3

0.8 1.2

0.9
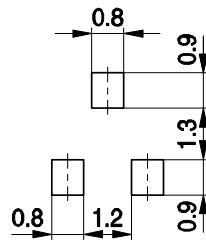
SOT23-FPR V08

Marking Layout

Type code ⟶ EU S 36 ⟵ 2013, June Date code

Pin 1

(infineon
Manufacturer
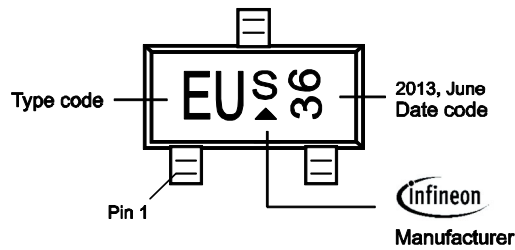
Standard Packing

Reel o 180 mm: 3.000 Pieces / Reel
Reel o 330 mm = 10.000 Pieces / Reel

4

0.9

0.2

2.13

2.65

8

Pin 1 ▶

3.15

1.15

SOT23-TP V02

2014-02-13

Package Outline

Foot Print

Marking Layout (Example)

Date code (YM) 2005, June — 56

XYs — Manufacturer

Pin 1 — Type code

Standard Packing

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

2014-02-13

Package Outline

Foot Print

Marking Layout (Example)

Type code

Date code (YM)
2005, June

Manufacturer

Pin 1

Standard Packing

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

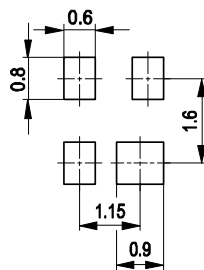Pin 1

Package Outline

Foot Print

Marking Layout (Example)

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

Date code (YM)
2005, June

Manufacturer

Pin 1 marking
Laser marking

Type code

Standard Packing

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

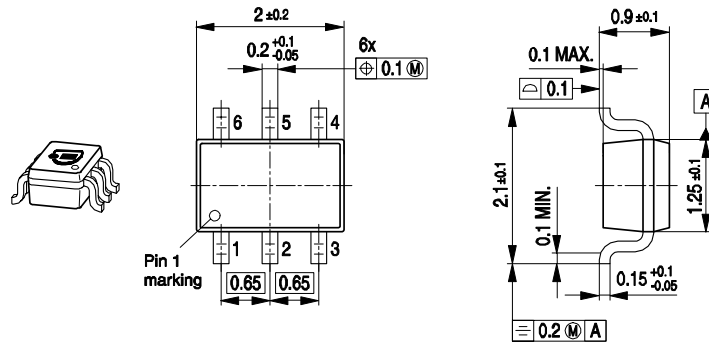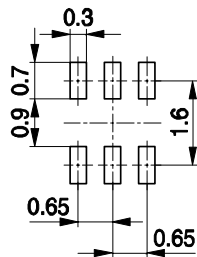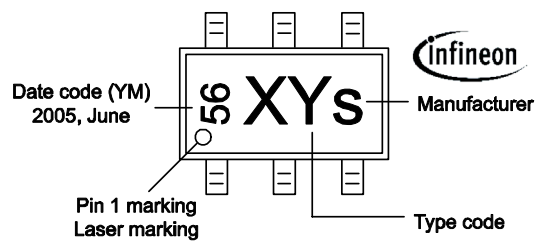For symmetric types no defined Pin 1 orientation in reel.

Pin 1
marking

Package Outline

Top view

Bottom view

0.4$^{+0.1}$

0.05 MAX.

0.6±0.05

0.65±0.05

1±0.05

0.5±0.035$^{1)}$

0.25±0.035$^{1)}$

Cathode marking
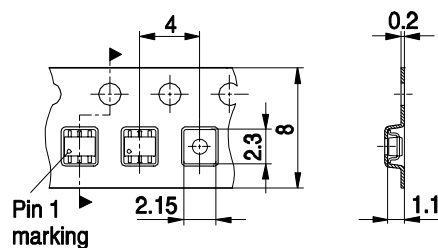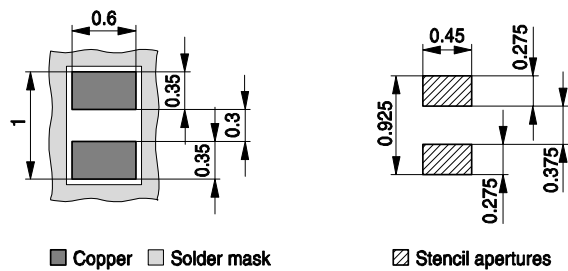
1) Dimension applies to plated terminal

Foot Print

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

0.6

0.35

0.3

0.35

1

0.45

0.275

0.275

0.375

0.925

■ Copper   □ Solder mask   ▨ Stencil apertures

Marking Layout (Example)

BAS16-02L
Type code

A6

Cathode marking
Laser marking
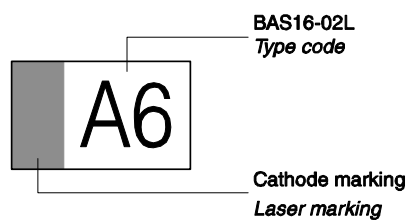
Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel
Reel ø330 mm = 50.000 Pieces/Reel (optional)

4

0.5

1.16

8

Cathode marking

0.76
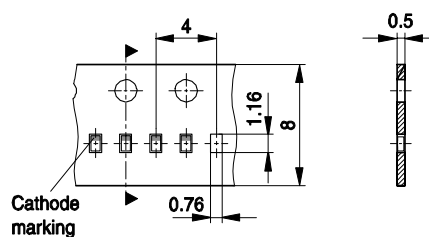
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