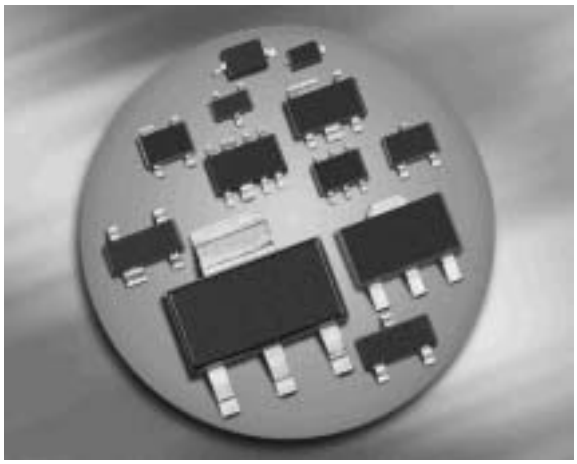
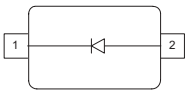
Silicon Schottky Diode

- 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[1)]
- Qualified according AEC Q101

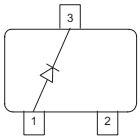


AEC Qualified RoHS

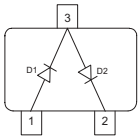
BAS170W
BAS70-02L
BAS70-02W



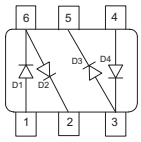
BAS70



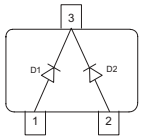
BAS70-04
BAS70-04W



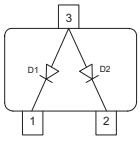
BAS70-04S



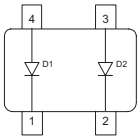
BAS70-05
BAS70-05W



BAS70-06
BAS70-06W



BAS70-07
BAS70-07W



[1]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°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, $T_S \leq 107$ °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	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAS70, BAS70-07		≤ 310	
BAS70-02L,		≤ 130	
BAS70-02W		≤ 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	V_F				mV
I_F = 1 mA		300	375	410	
I_F = 10 mA		600	705	750	
I_F = 15 mA		720	880	1000	
Forward voltage matching[2)] I_F = 10 mA	ΔV_F	-	-	20	

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

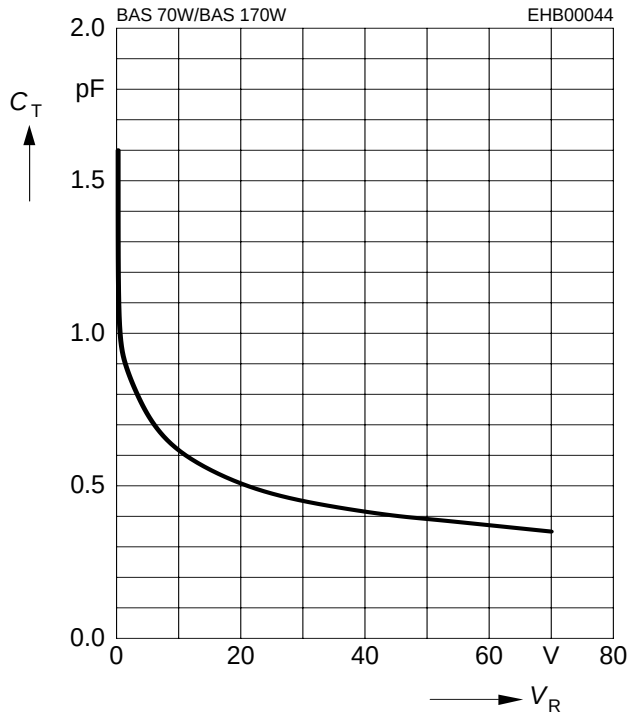
[2]ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

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

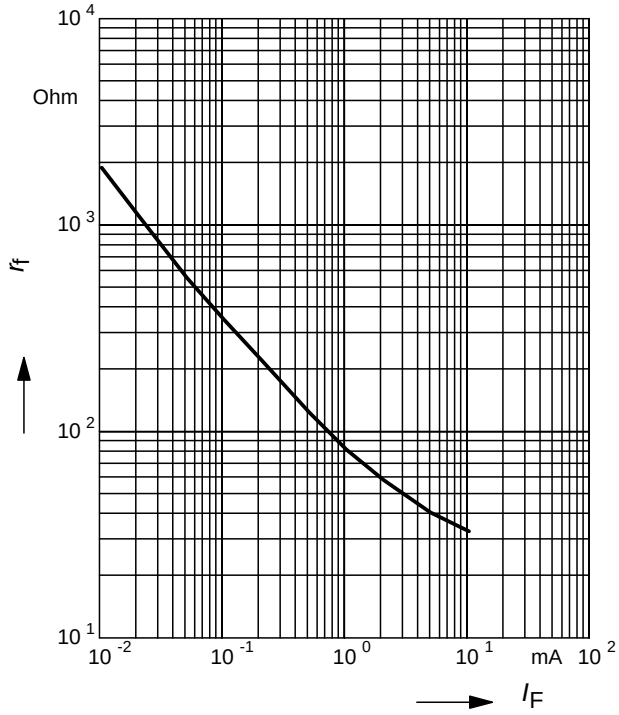
Diode capacitance $C_T = f(V_R)$

f = 1MHz



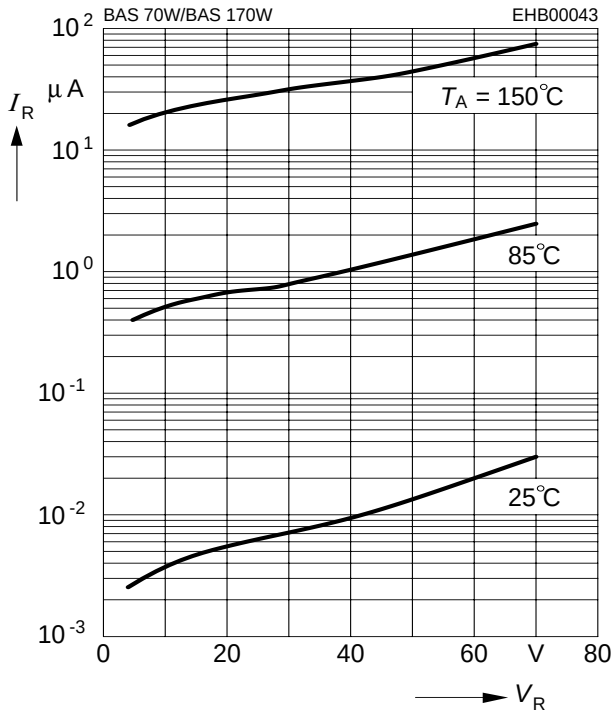
Forward resistance $r_f = f(I_F)$

f = 10 kHz



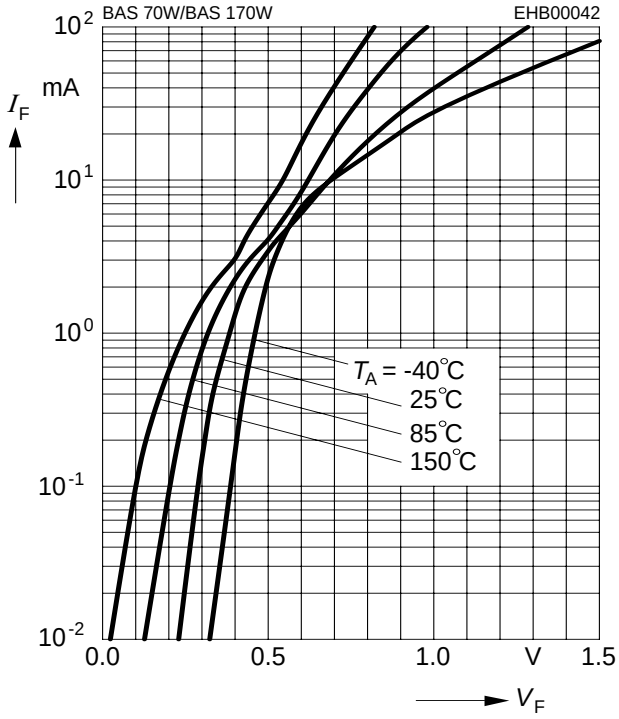
Reverse current $I_R = f(V_R)$

T_A = Parameter



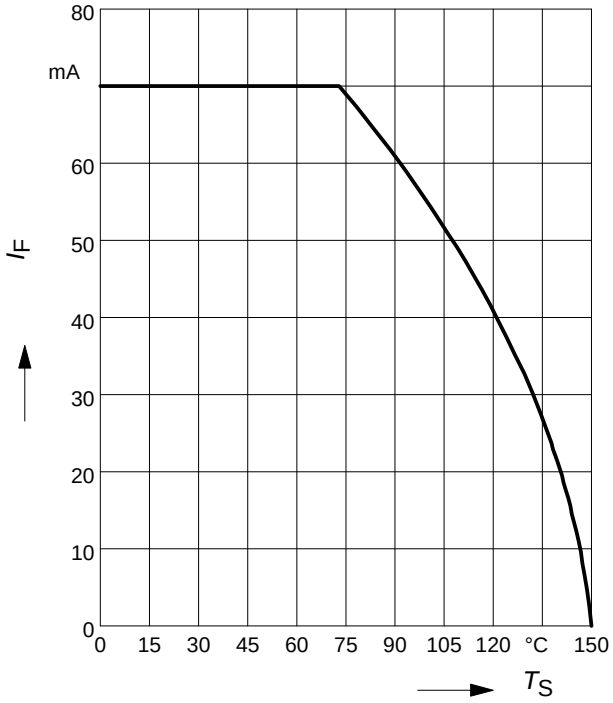
Forward current $I_F = f(V_F)$

T_A = Parameter



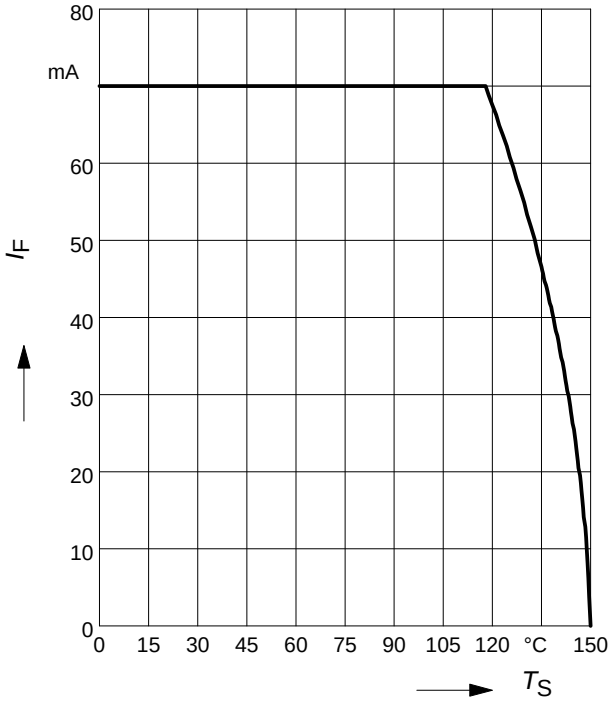
Forward current $I_F = f(T_S)$

BAS70, BAS70-07



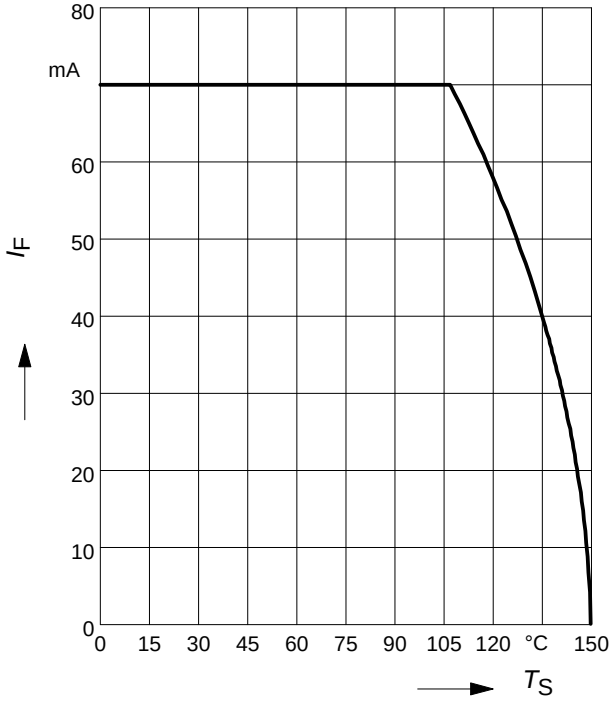
Forward current $I_F = f(T_S)$

BAS70-02L



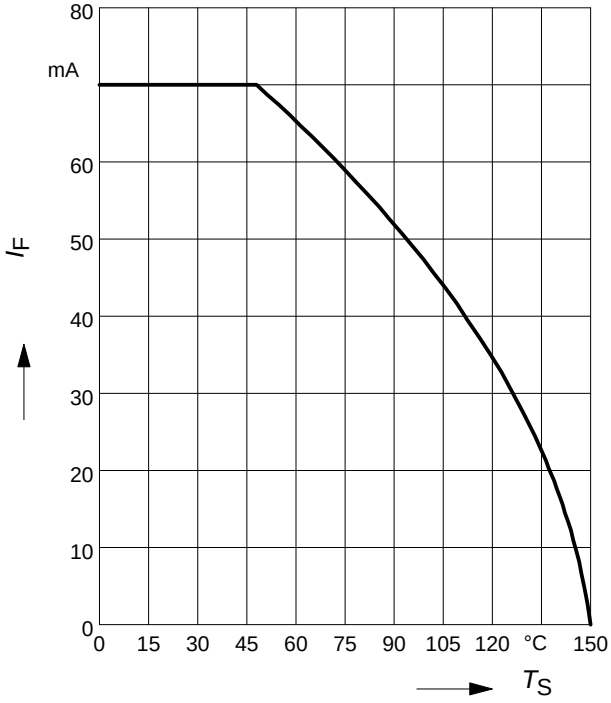
Forward current $I_F = f(T_S)$

BAS70-02W



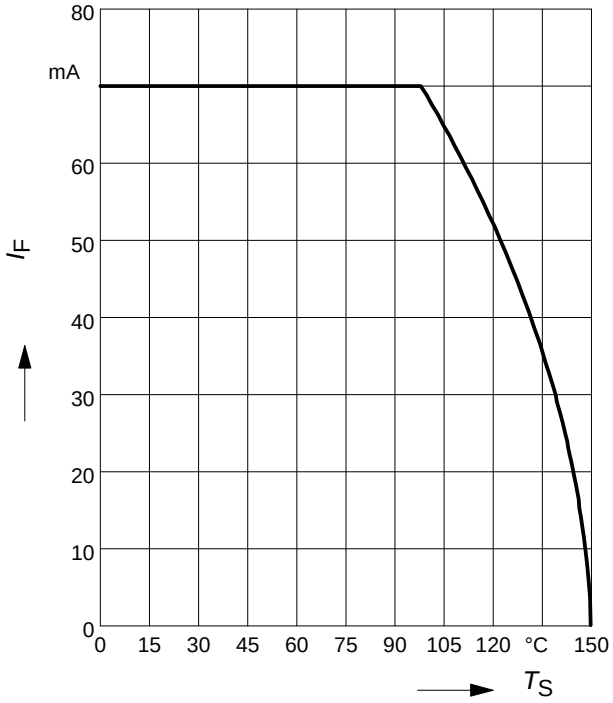
Forward current $I_F = f(T_S)$

BAS70-04, BAS70-06



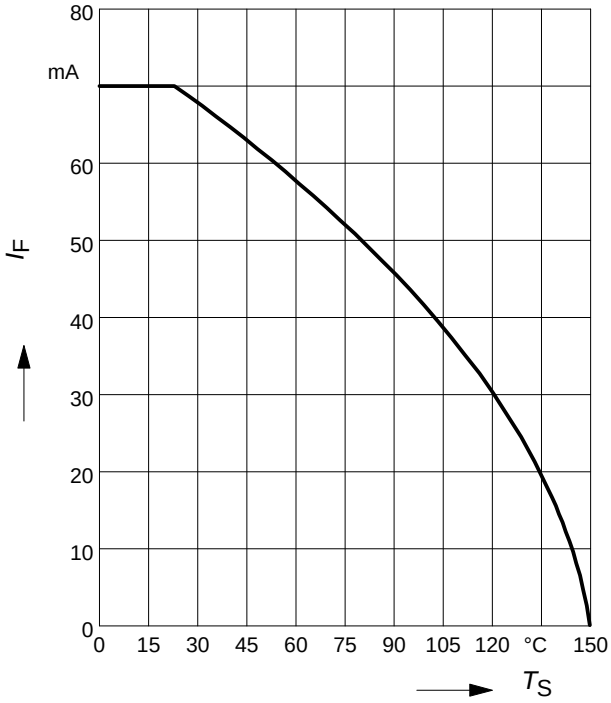
Forward current $I_F = f(T_S)$

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



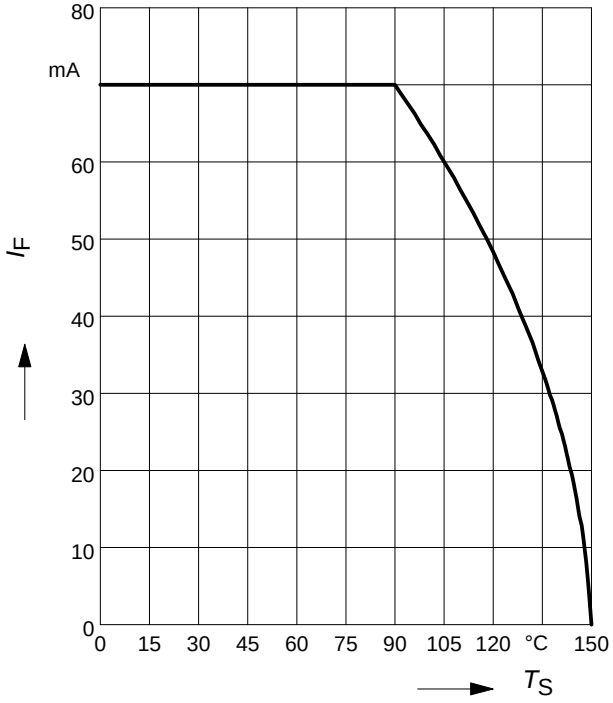
Forward current $I_F = f(T_S)$

BAS70-05



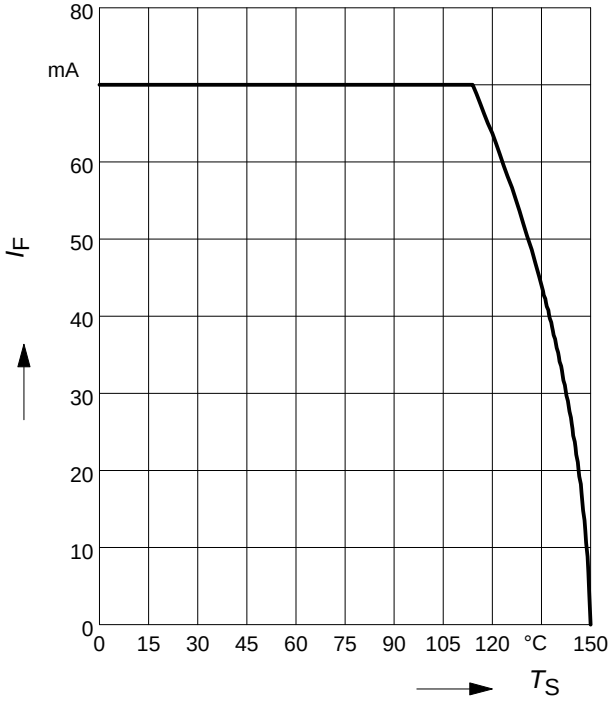
Forward current $I_F = f(T_S)$

BAS70-05W



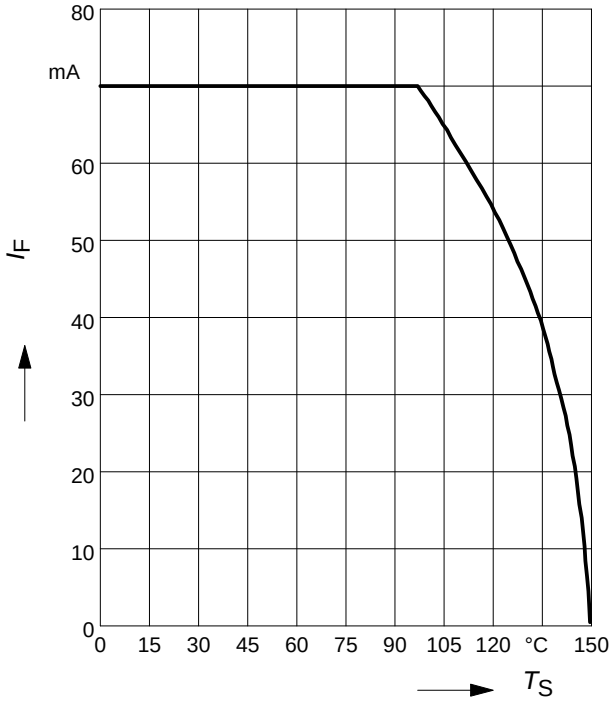
Forward current $I_F = f(T_S)$

BAS70-07W



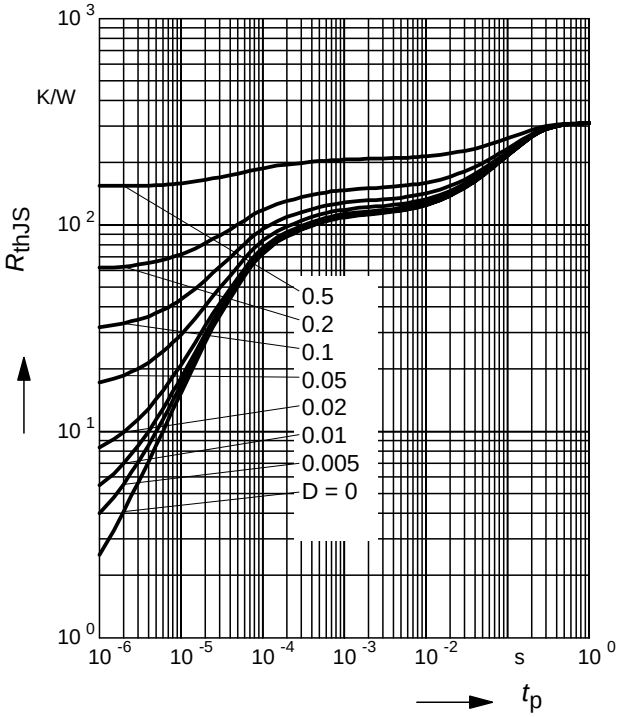
Forward current $I_F = f(T_S)$

BAS170W



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

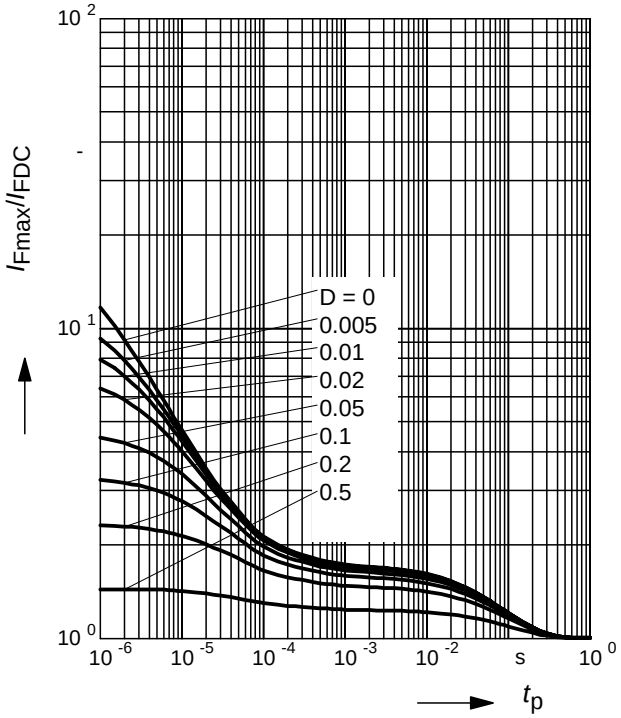
BAS70



Permissible Pulse Load

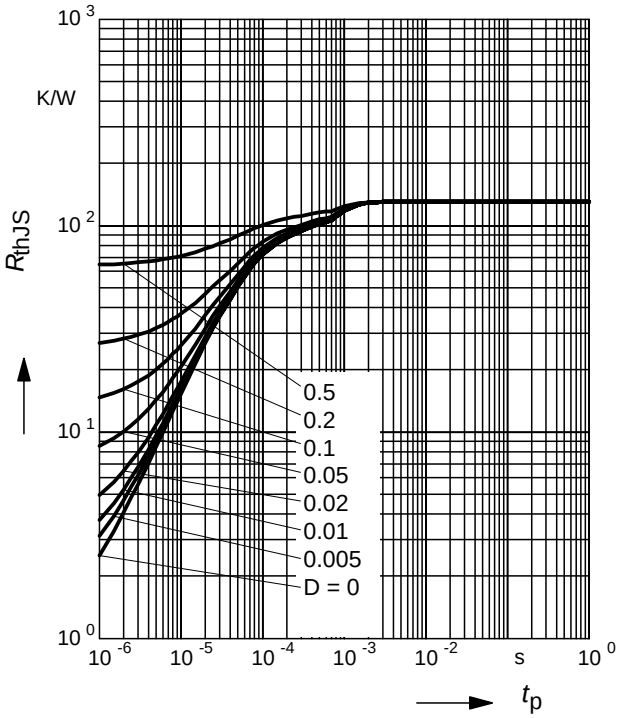
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS70



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

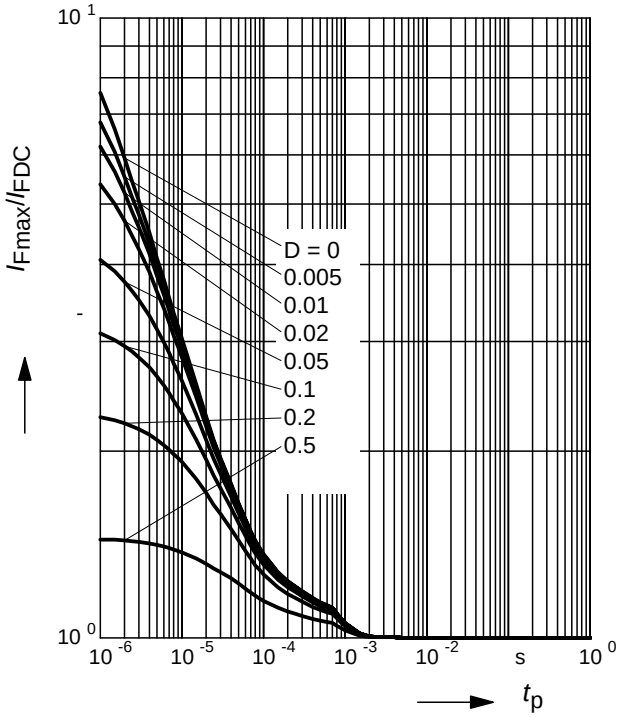
BAS70-02L



Permissible Pulse Load

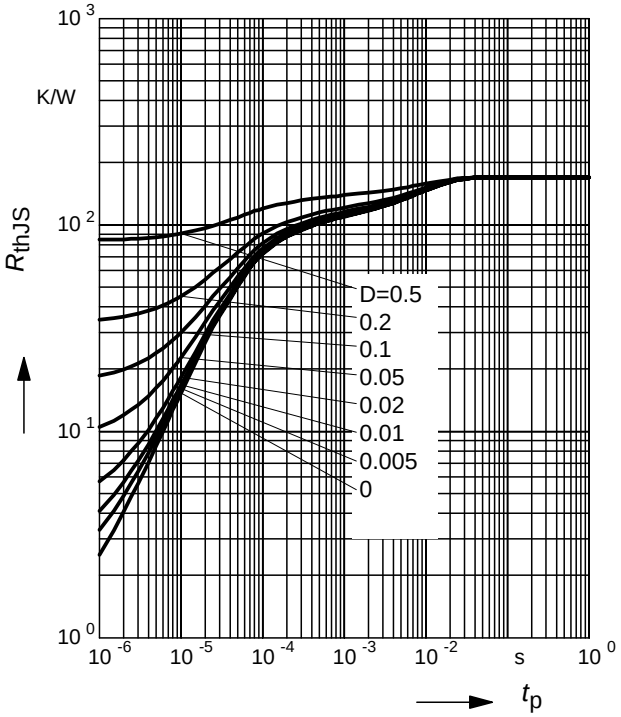
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-02L



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

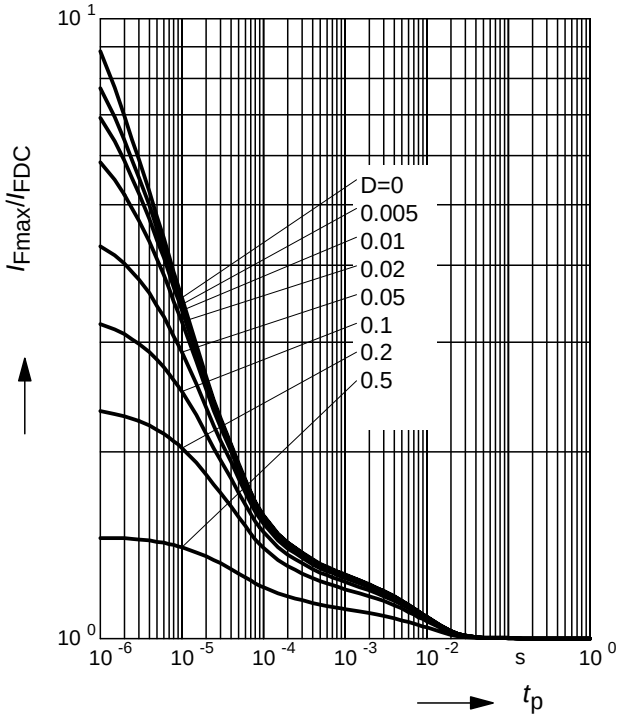
BAS70-02W



Permissible Pulse Load

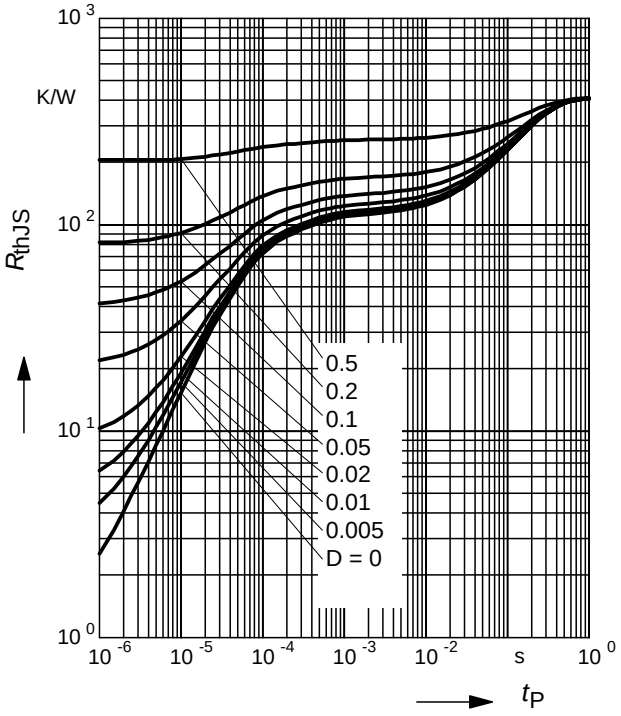
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-02W



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

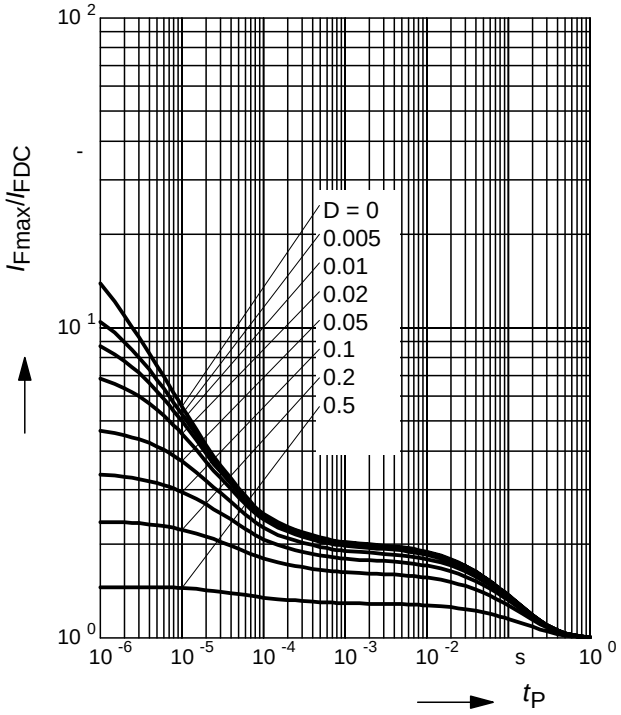
BAS70-04, BAS70-06



Permissible Pulse Load

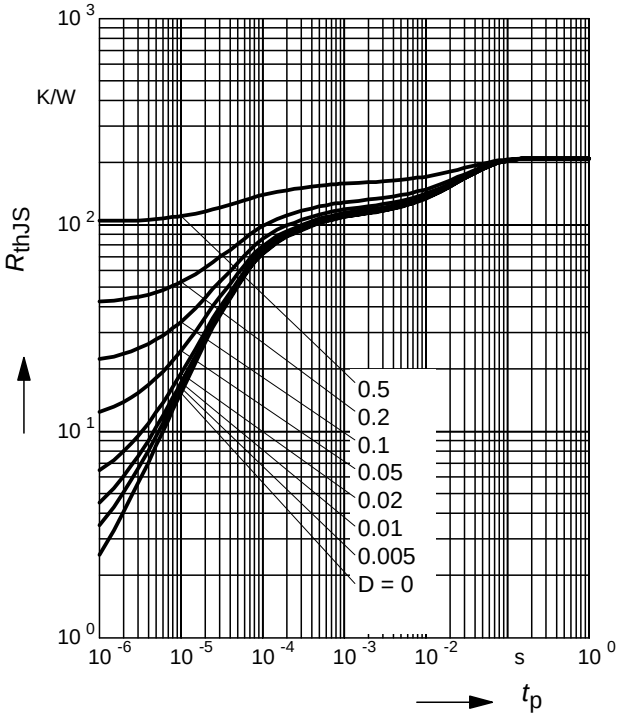
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-04, BAS70-06



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

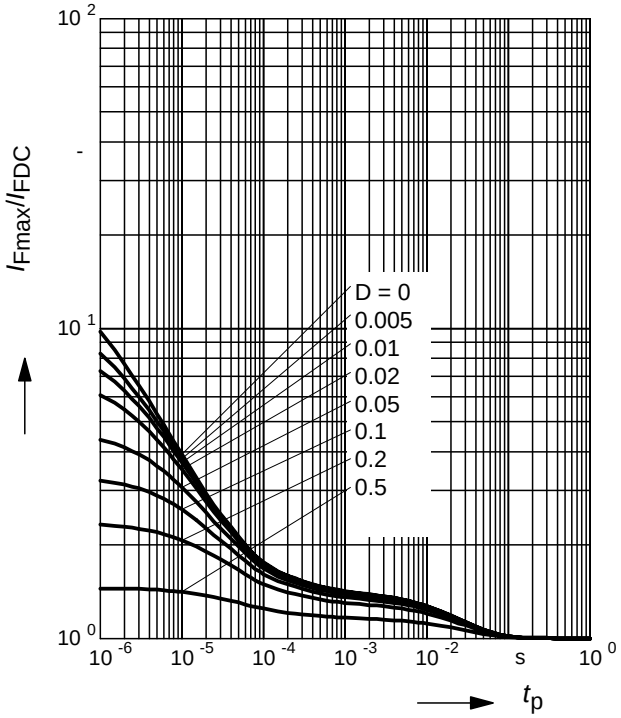
BAS70-04S



Permissible Pulse Load

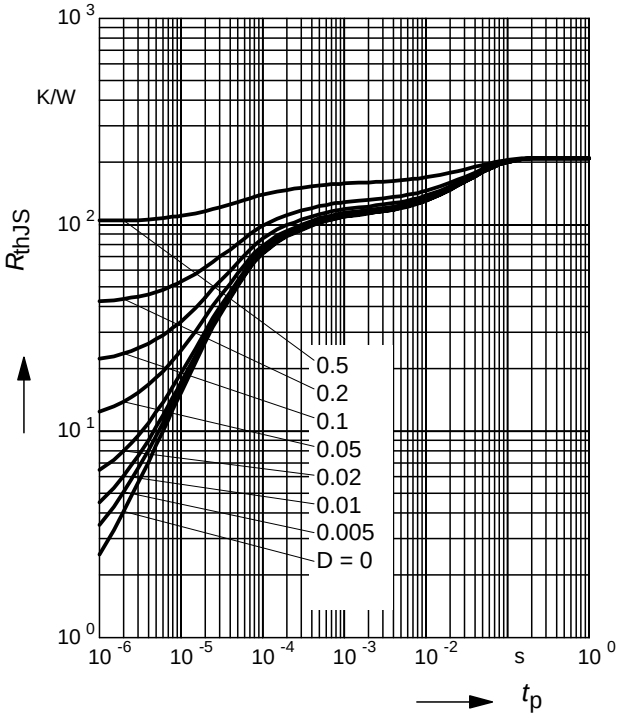
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-04S



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

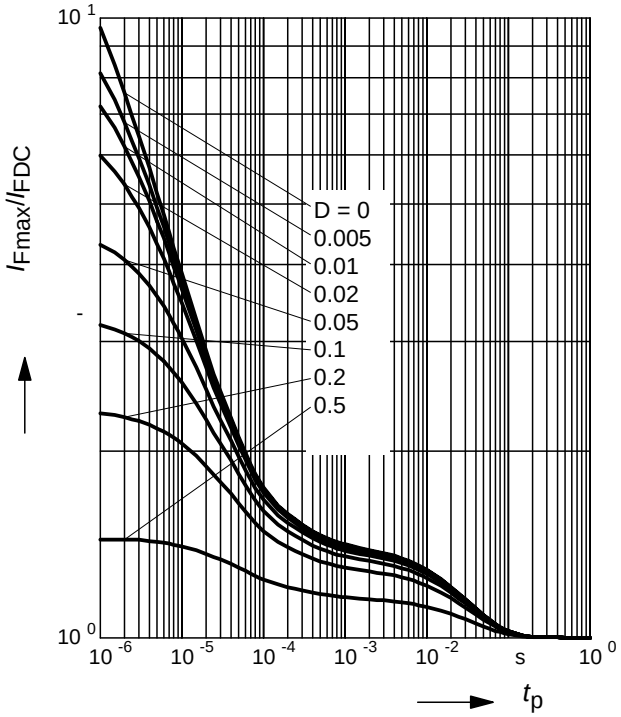
BAS70-04W, BAS70-06W



Permissible Pulse Load

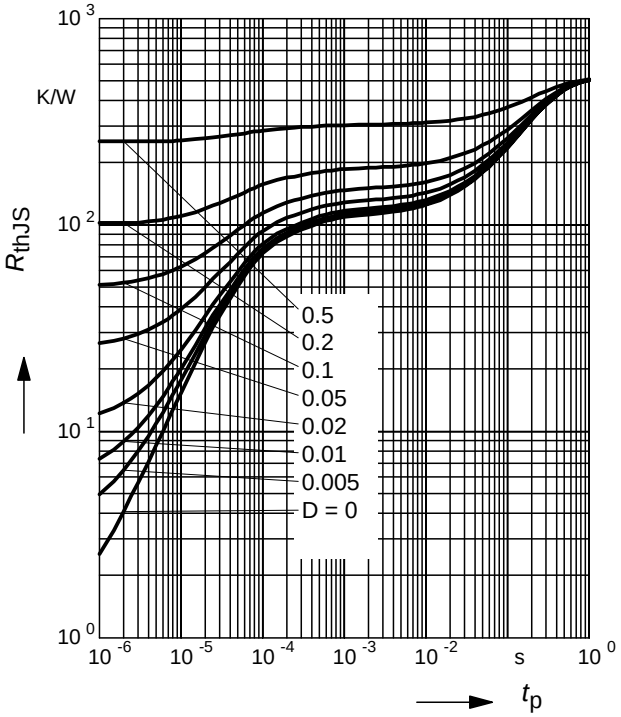
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-04W, BAS70-06W



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

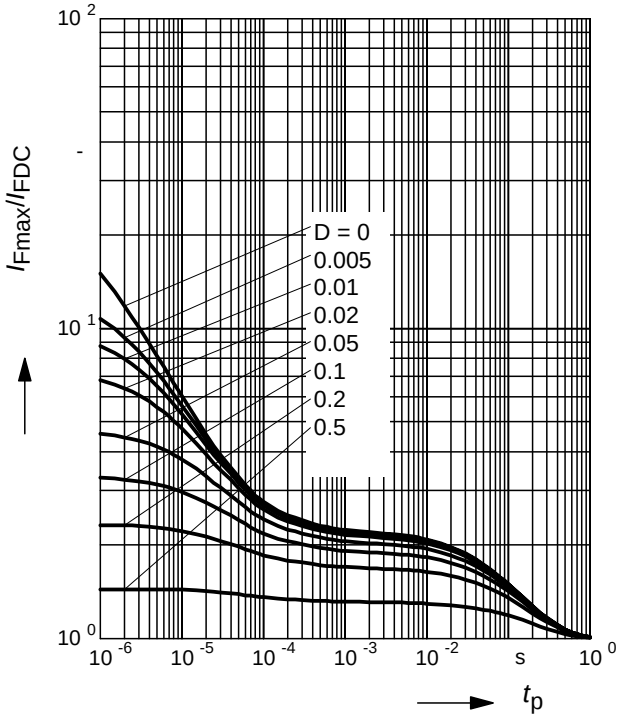
BAS70-05



Permissible Pulse Load

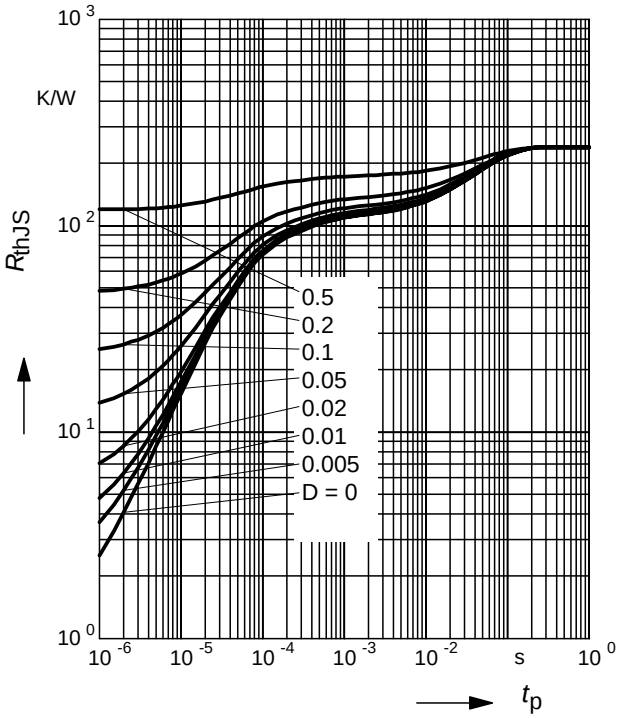
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-05



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

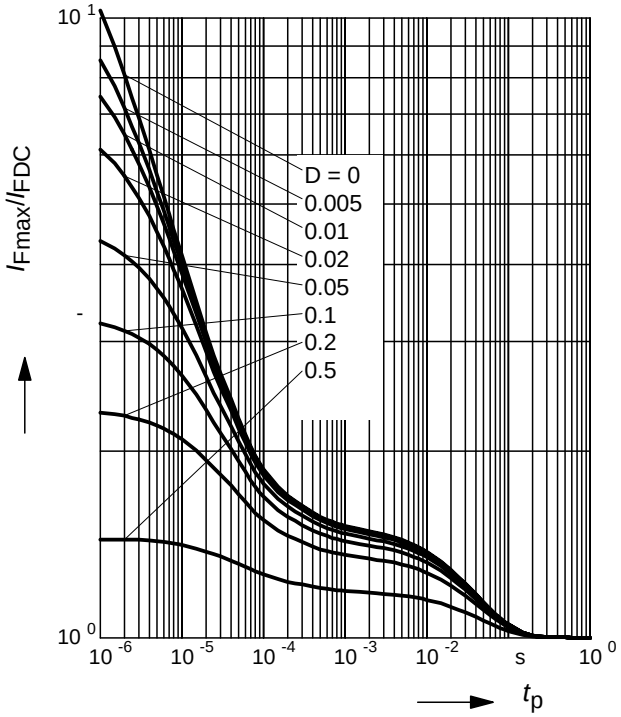
BAS70-05W



Permissible Pulse Load

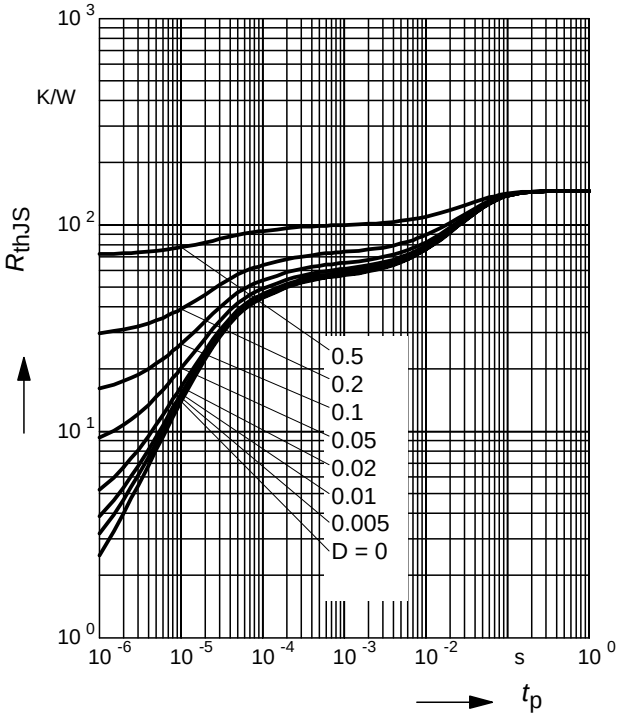
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-05W



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

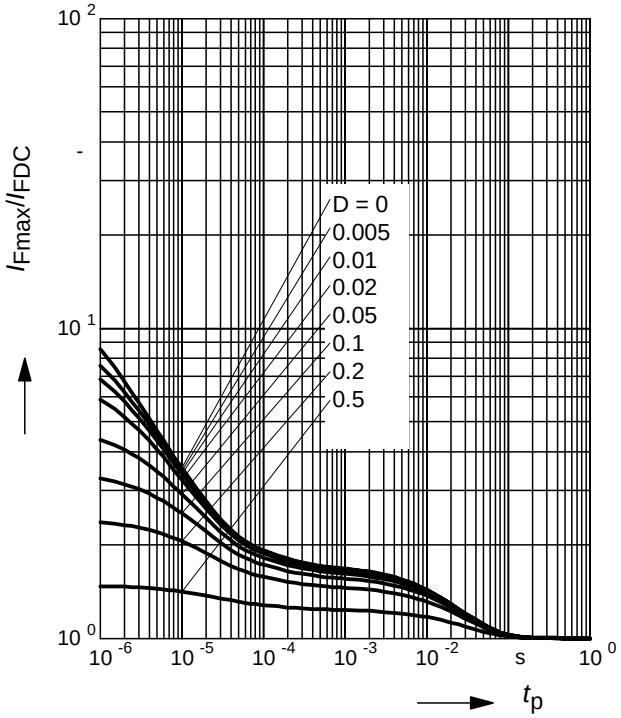
BAS70-07W



Permissible Pulse Load

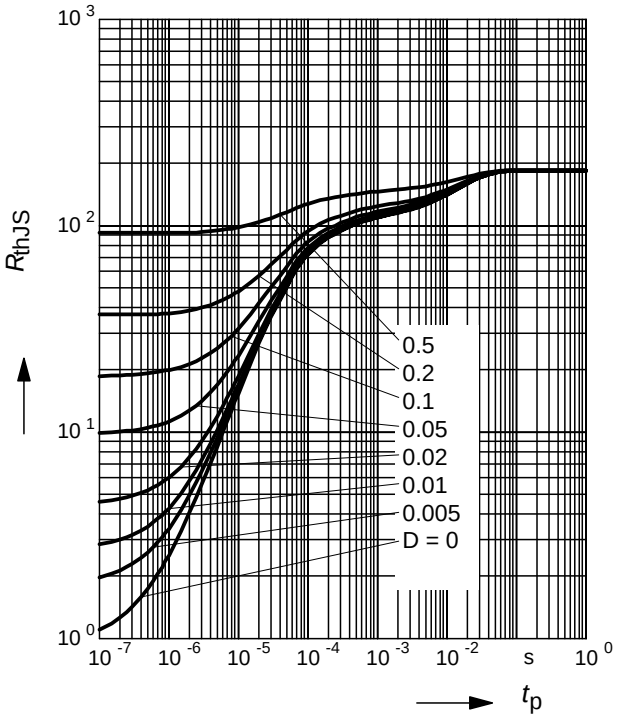
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-07W



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

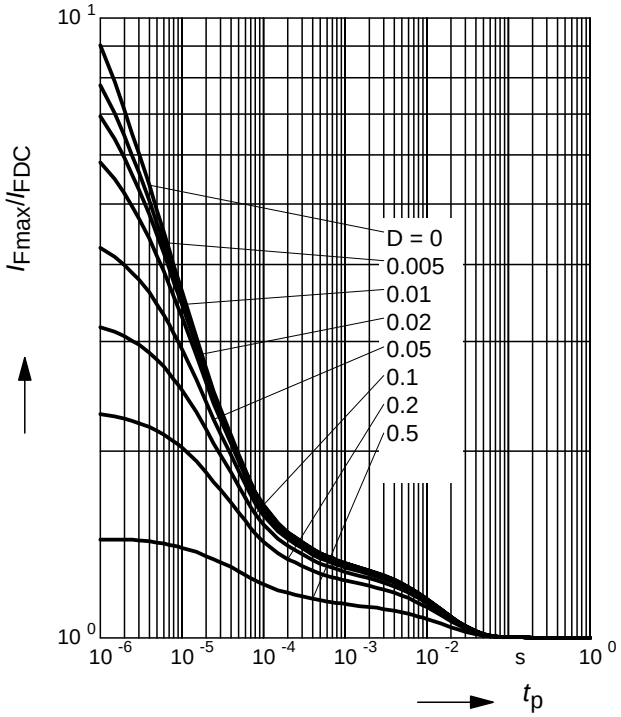
BAS170W



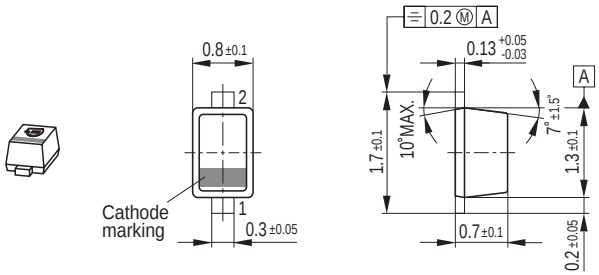
Permissible Pulse Load

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

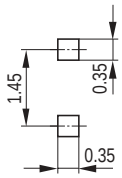
BAS170W



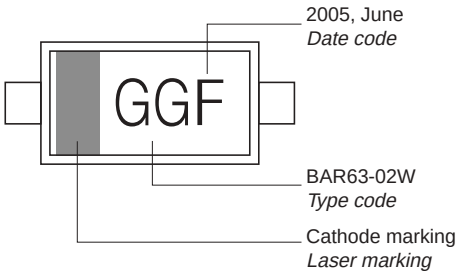
Package Outline



Foot Print

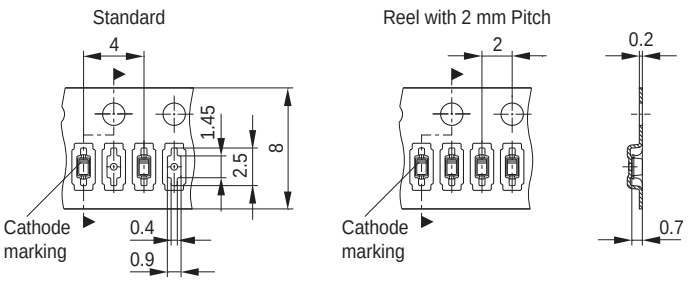


Marking Layout (Example)



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

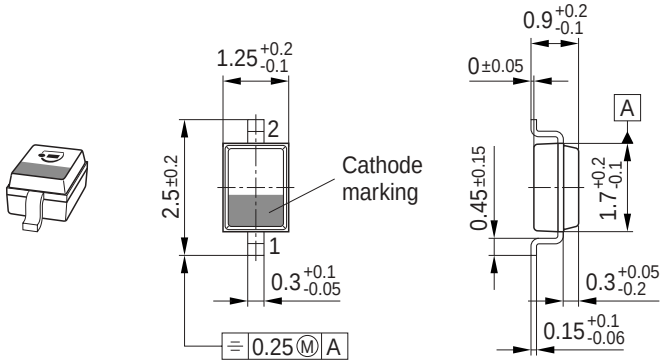


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1]) CES-Code

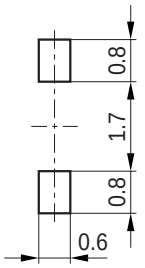
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	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.

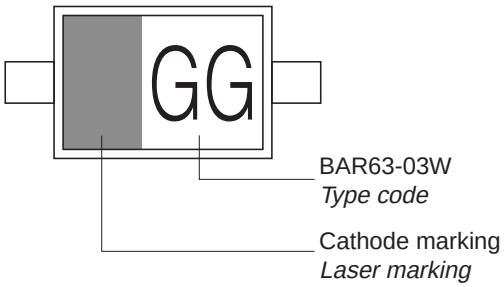
Package Outline



Foot Print

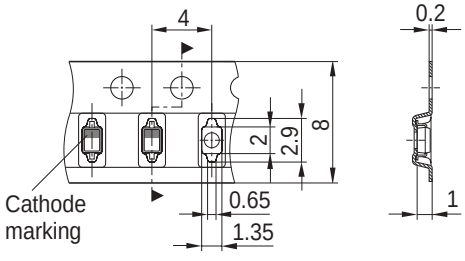


Marking Layout (Example)

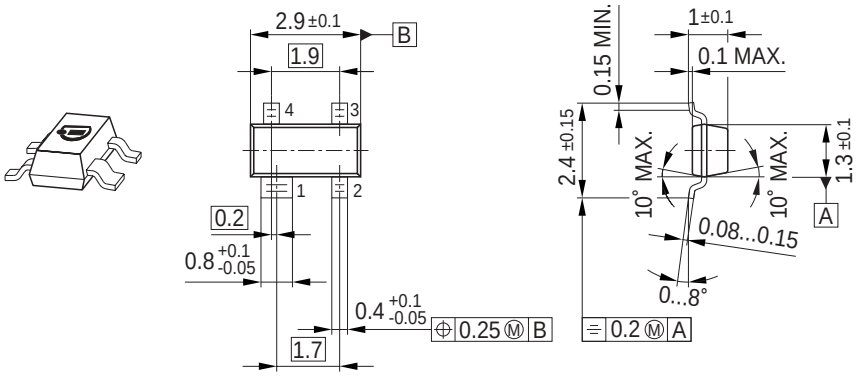


Standard Packing

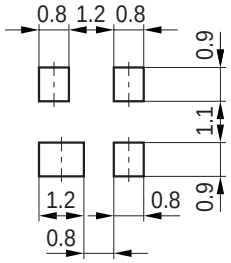
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



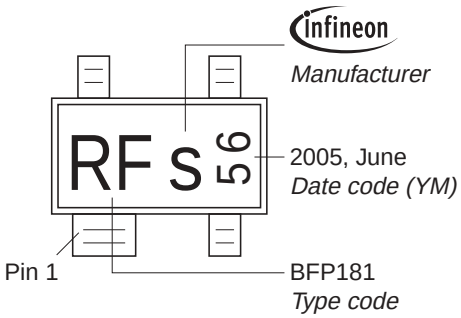
Package Outline



Foot Print

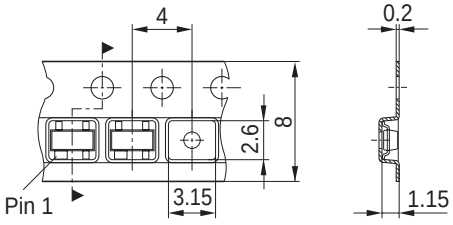


Marking Layout (Example)

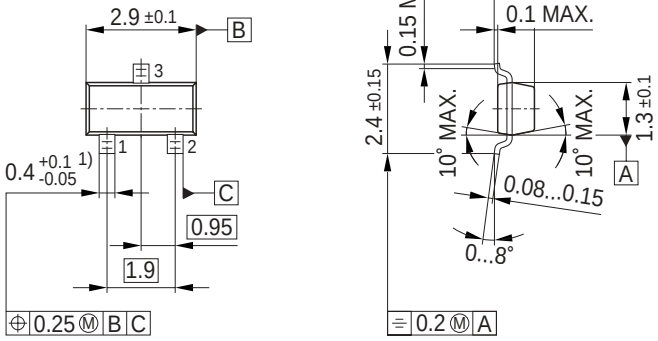


Standard Packing

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

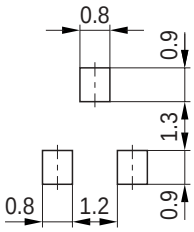


Package Outline

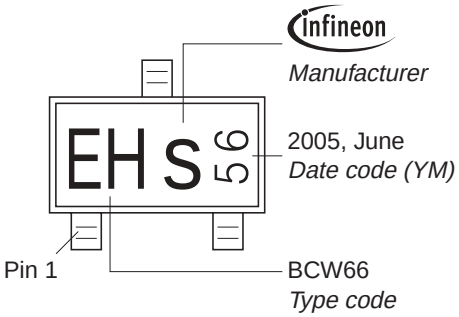


1) Lead width can be 0.6 max. in dambar area

Foot Print

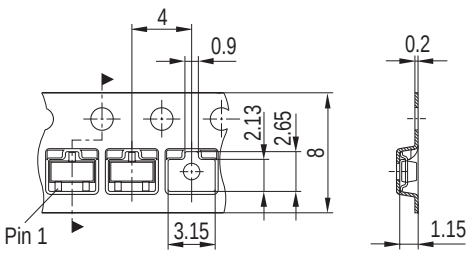


Marking Layout (Example)

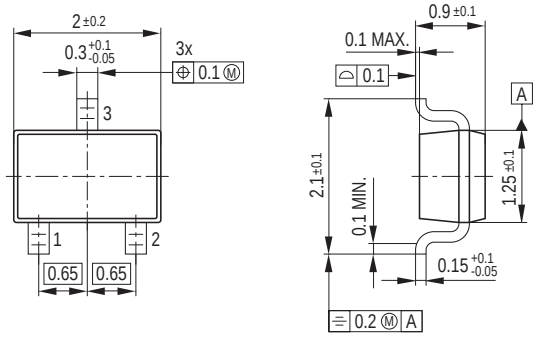


Standard Packing

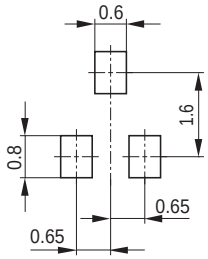
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



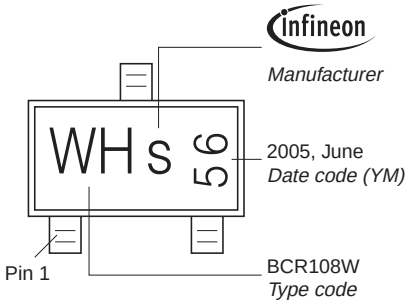
Package Outline



Foot Print

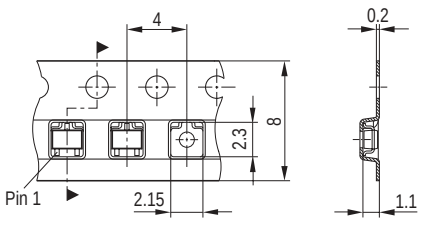


Marking Layout (Example)

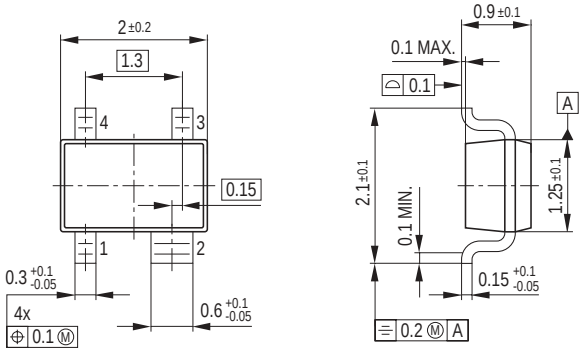


Standard Packing

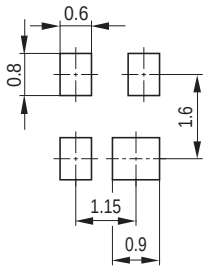
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



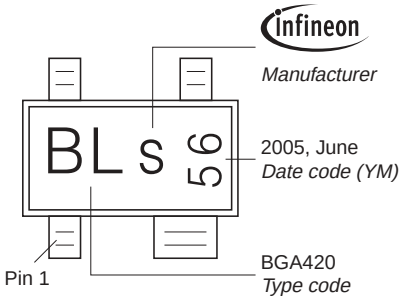
Package Outline



Foot Print

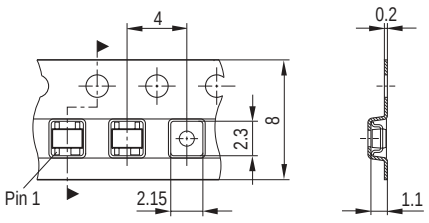


Marking Layout (Example)

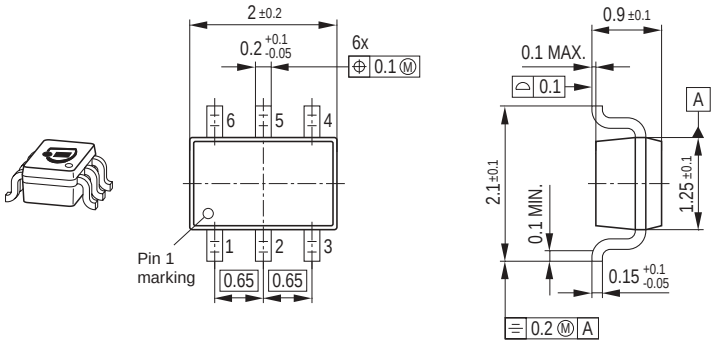


Standard Packing

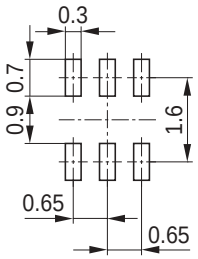
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



Package Outline

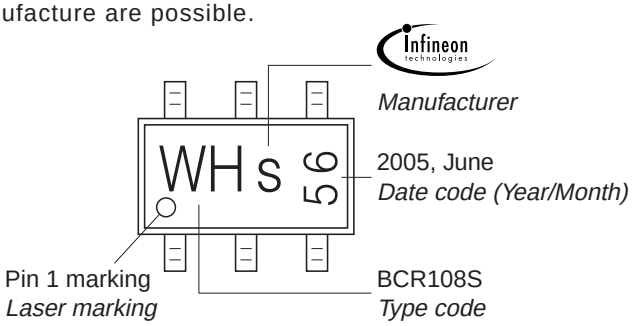


Foot Print



Marking Layout (Example)

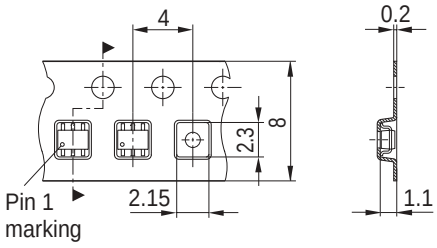
Small variations in positioning of
Date code, Type code and Manufacture are possible.



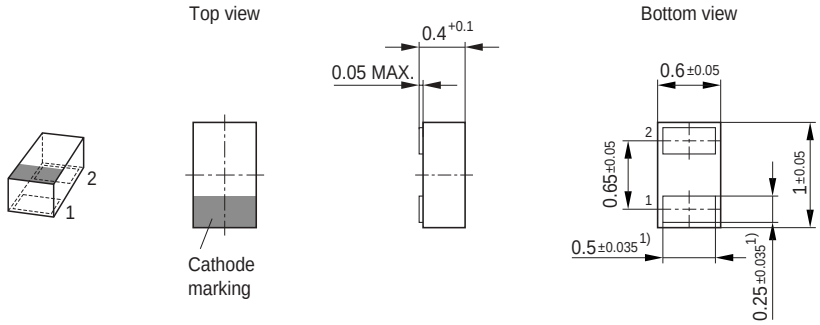
Standard Packing

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

For symmetric types no defined Pin 1 orientation in reel.



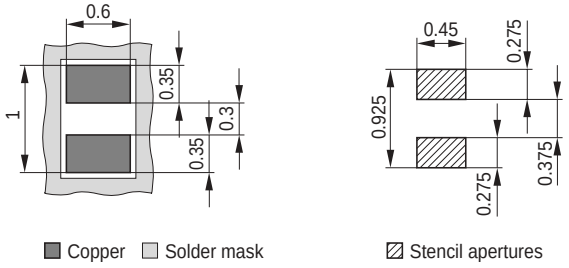
Package Outline



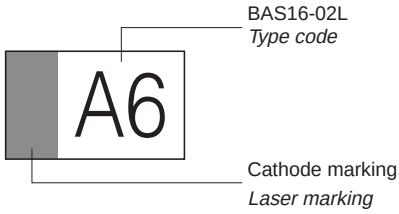
1) Dimension applies to plated terminal

Foot Print

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

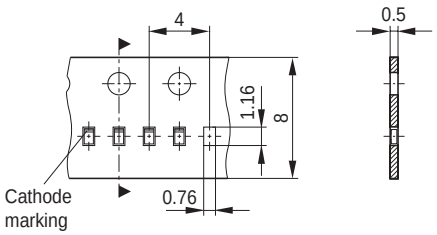


Marking Layout (Example)



Standard Packing

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



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