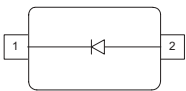


Silicon Schottky Diode

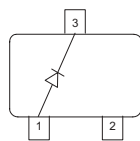
- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing
- BAS70-04S: For orientation in reel see package information below
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



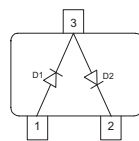
BAS170W
BAS70-02L
BAS70-02W



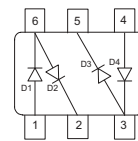
BAS70



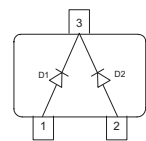
BAS70-04
BAS70-04W



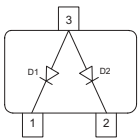
BAS70-04S



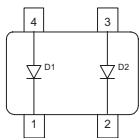
BAS70-05
BAS70-05W



BAS70-06
BAS70-06W



BAS70-07
BAS70-07W



¹Pb-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 $t \leq 10\text{ms}$	I_{FSM}	100	
Total power dissipation	P_{tot}		mW
BAS70, BAS70-07, $T_S \leq 72^\circ\text{C}$		250	
BAS70-02L, $T_S \leq 117^\circ\text{C}$		250	
BAS70-02W, $T_S \leq 107^\circ\text{C}$		250	
BAS70-04, BAS70-06, $T_S \leq 48^\circ\text{C}$		250	
BAS70-04S/W/-06W, BAS170W, $T_S \leq 97^\circ\text{C}$		250	
BAS70-05, $T_S \leq 22^\circ\text{C}$		250	
BAS70-05W, $T_S \leq 90^\circ\text{C}$		250	
BAS70-07W, $T_S \leq 114^\circ\text{C}$		250	
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 ¹⁾	R_{thJS}		K/W
BAS70, BAS70-07		≤ 310	
BAS70-02L, BAS70-02W		≤ 130 ≤ 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 $T_A = 25^\circ\text{C}$, unless otherwise specified

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

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

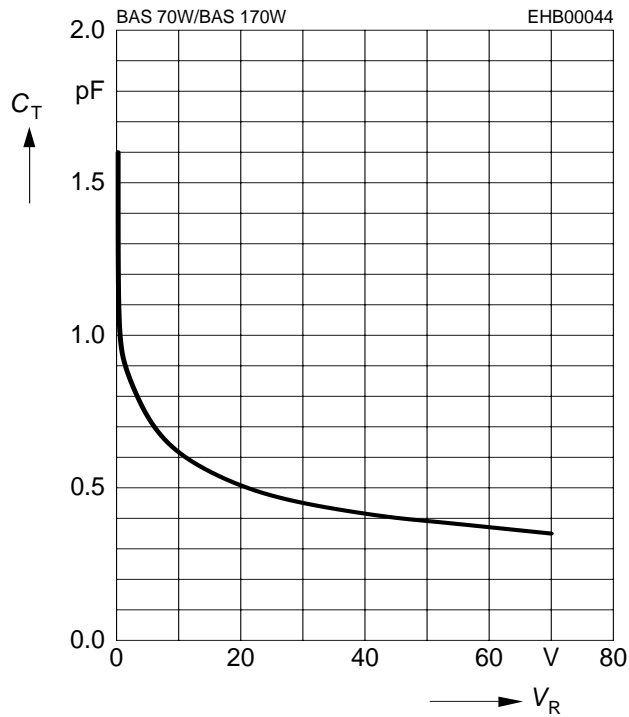
² ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

Electrical Characteristics at $T_A = 25^\circ\text{C}$, 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 $C_T = f(V_R)$

$f = 1\text{MHz}$



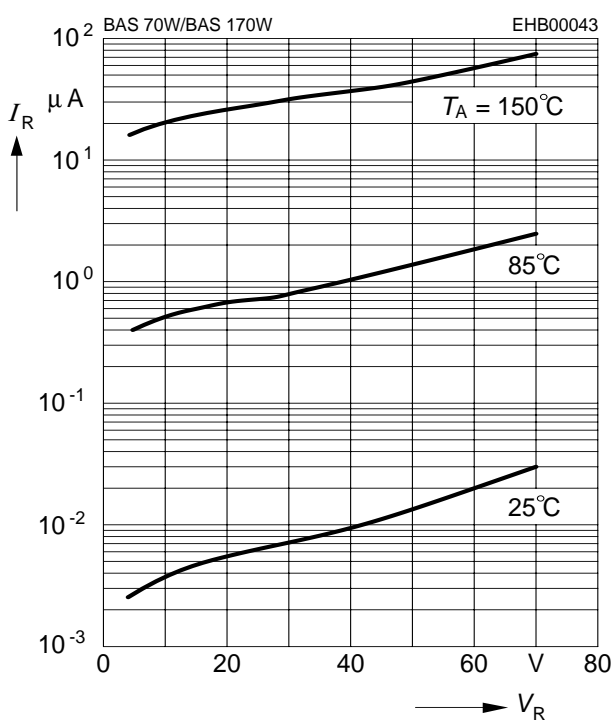
Forward resistance $r_f = f(I_F)$

$f = 10\text{kHz}$



Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



Forward current $I_F = f(V_F)$

$T_A = \text{Parameter}$



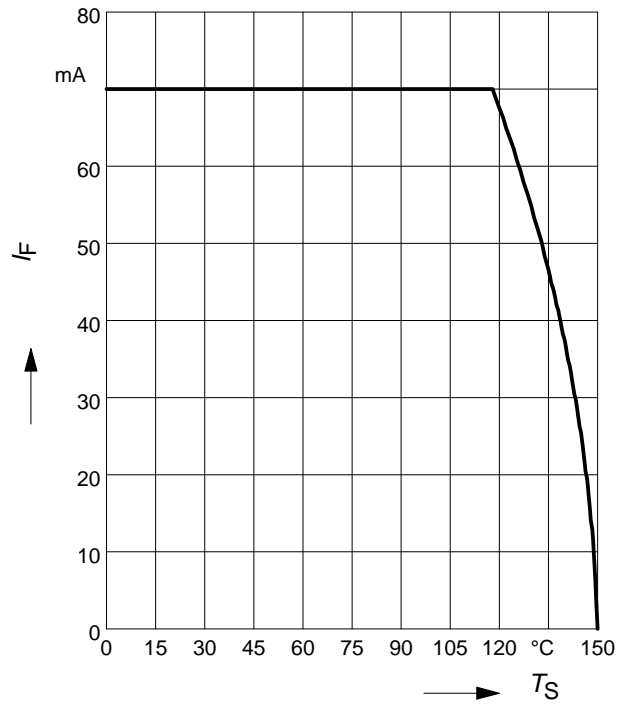
Forward current $I_F = f(T_S)$

BAS70, BAS70-07



Forward current $I_F = f(T_S)$

BAS70-02L



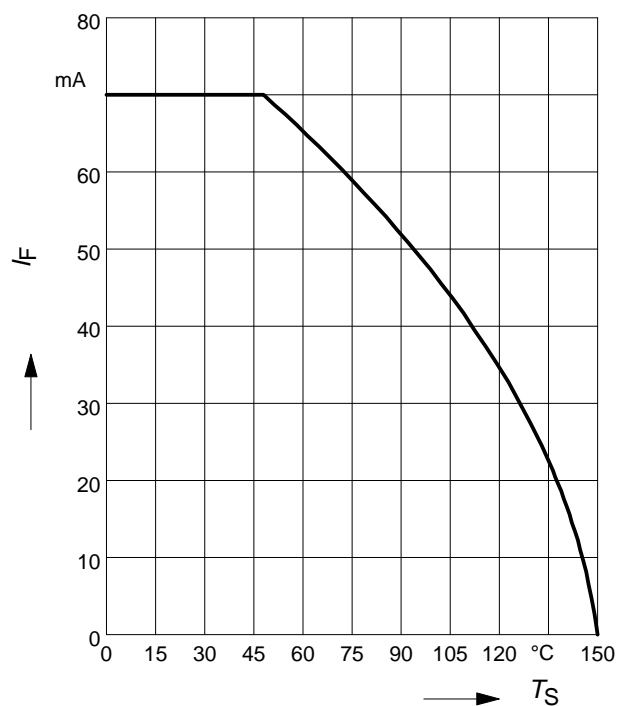
Forward current $I_F = f(T_S)$

BAS70-02W

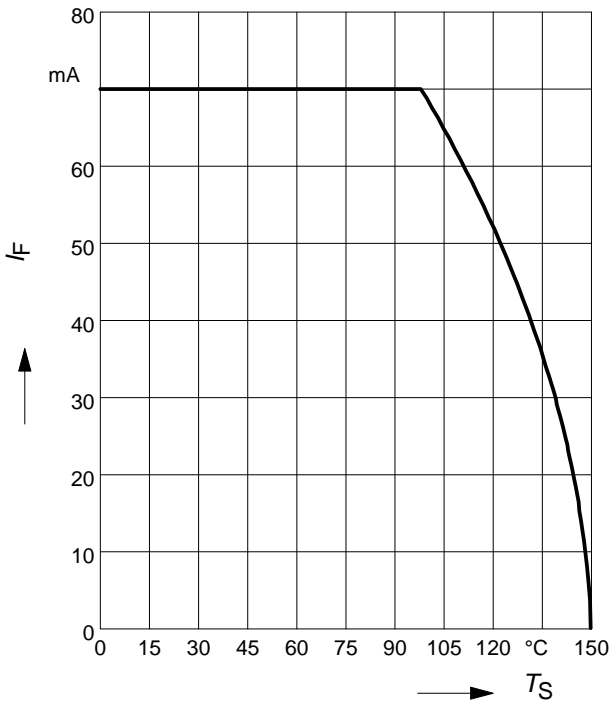


Forward current $I_F = f(T_S)$

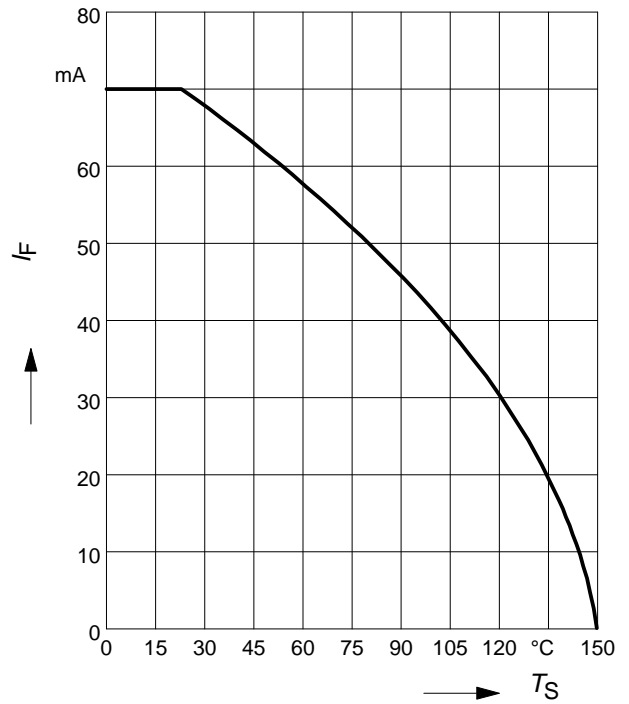
BAS70-04, BAS70-06



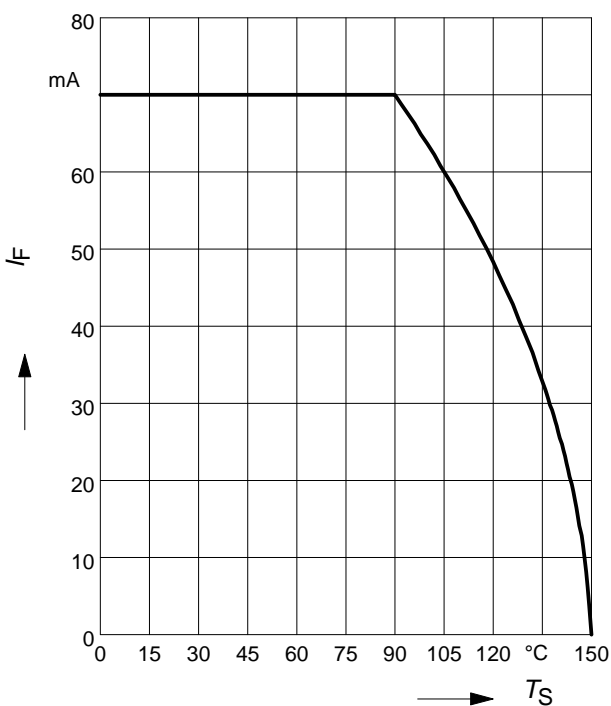
Forward current $I_F = f(T_S)$
 BAS70-04S/W, BAS70-06W, BAS170W



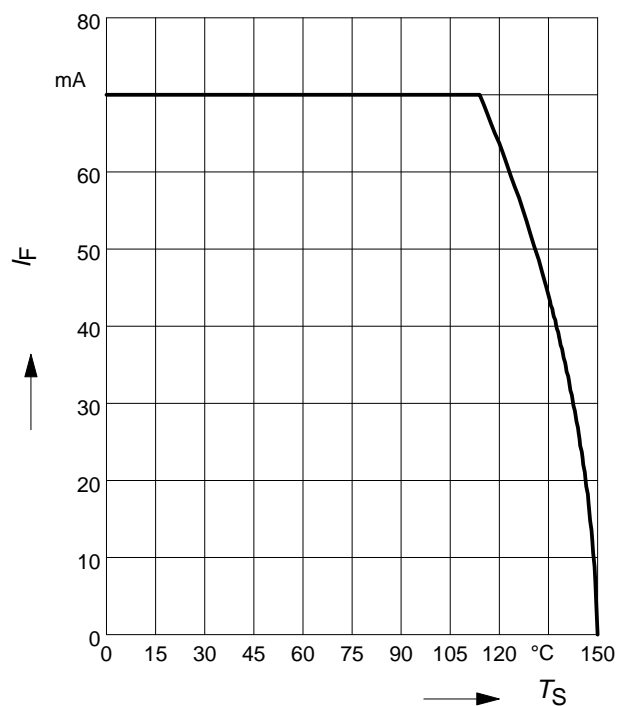
Forward current $I_F = f(T_S)$
 BAS70-05



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 $R_{thJS} = f(t_p)$

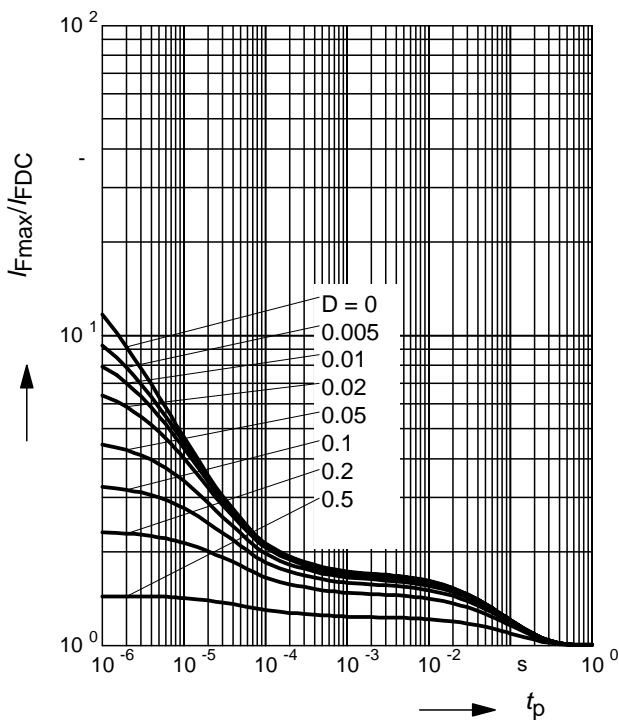
BAS70



Permissible Pulse Load

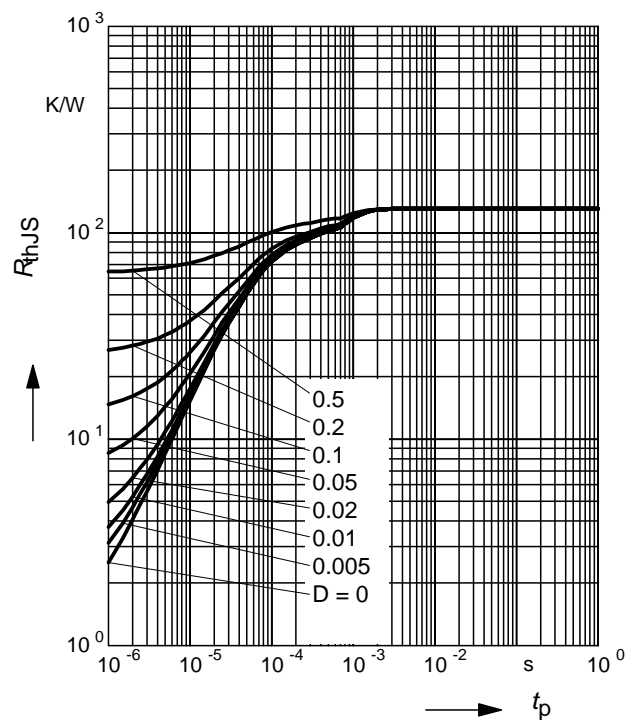
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70



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

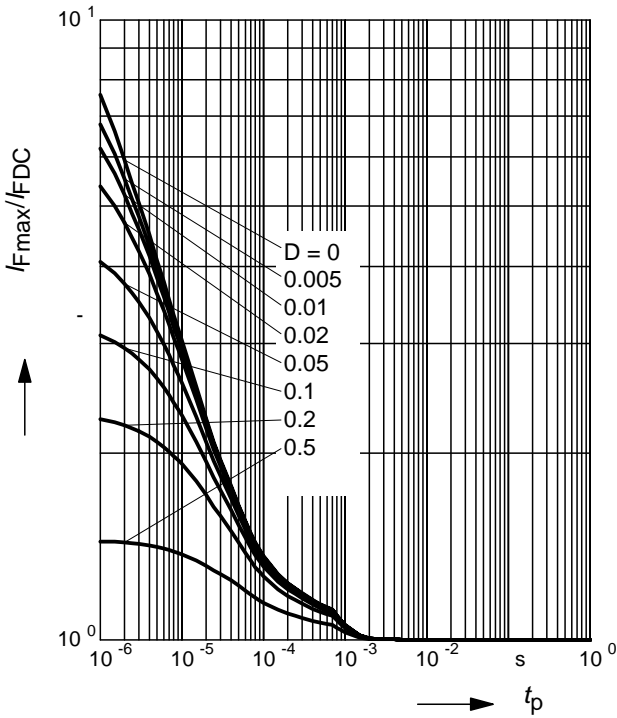
BAS70-02L



Permissible Pulse Load

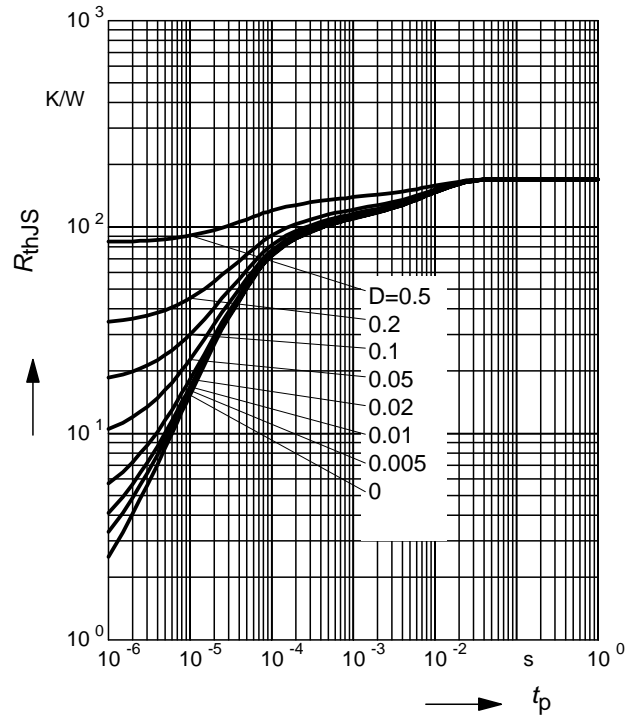
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-02L



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

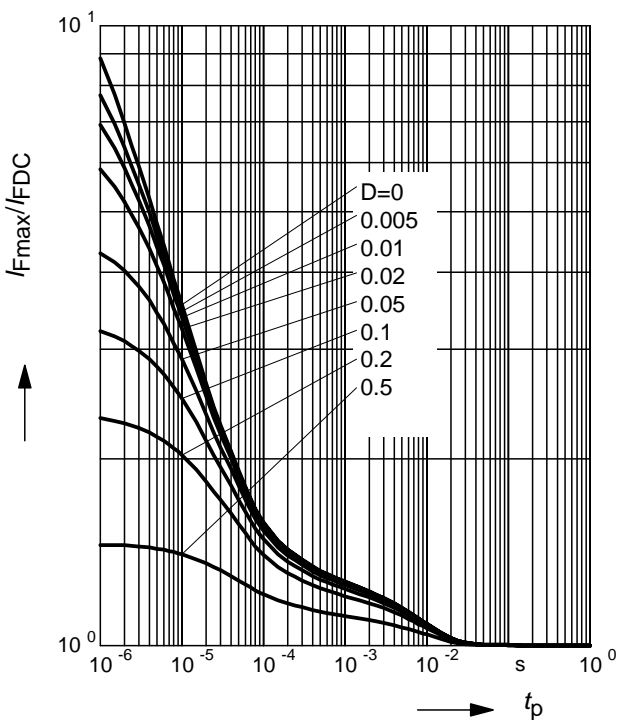
BAS70-02W



Permissible Pulse Load

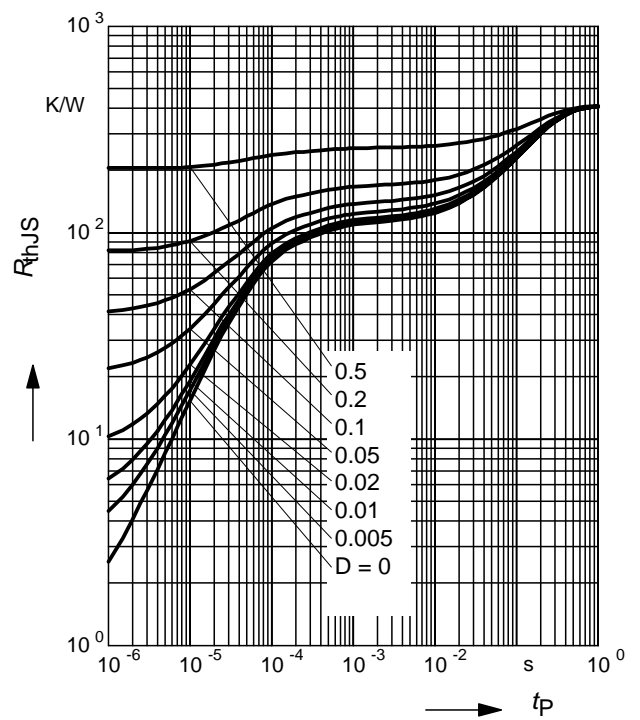
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-02W



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

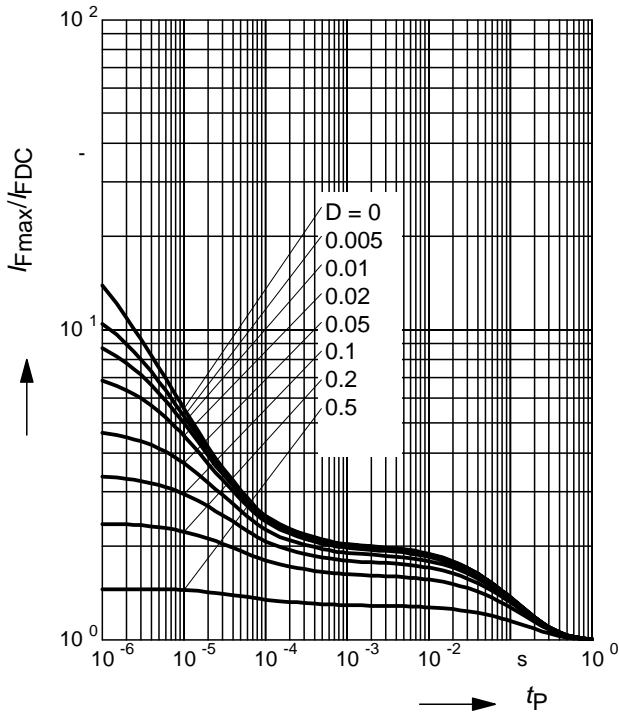
BAS70-04, BAS70-06



Permissible Pulse Load

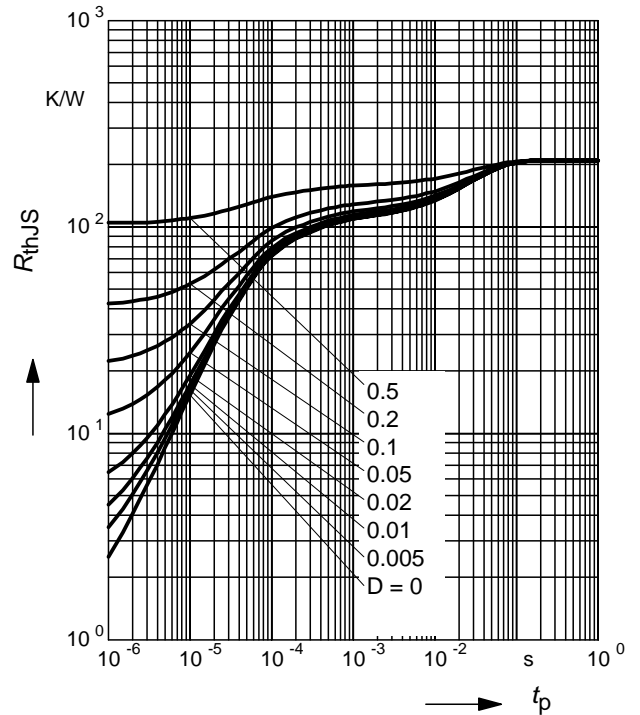
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAS70-04, BAS70-06



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

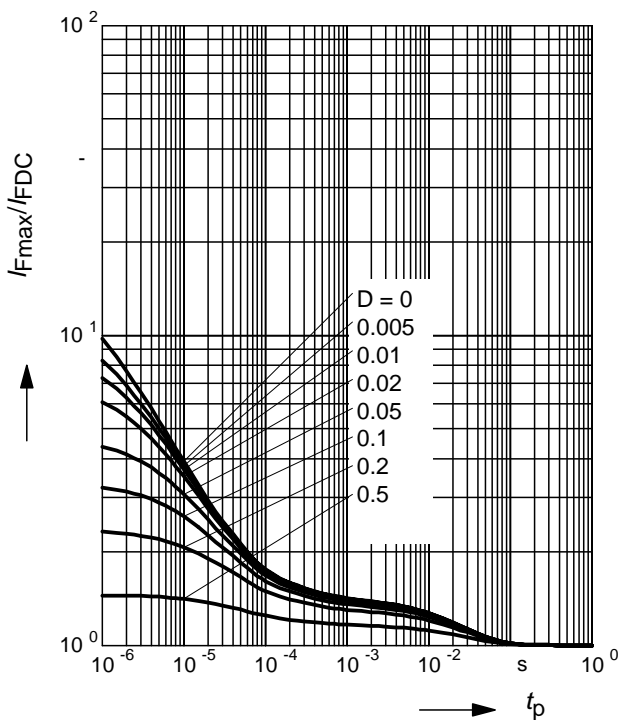
BAS70-04S



Permissible Pulse Load

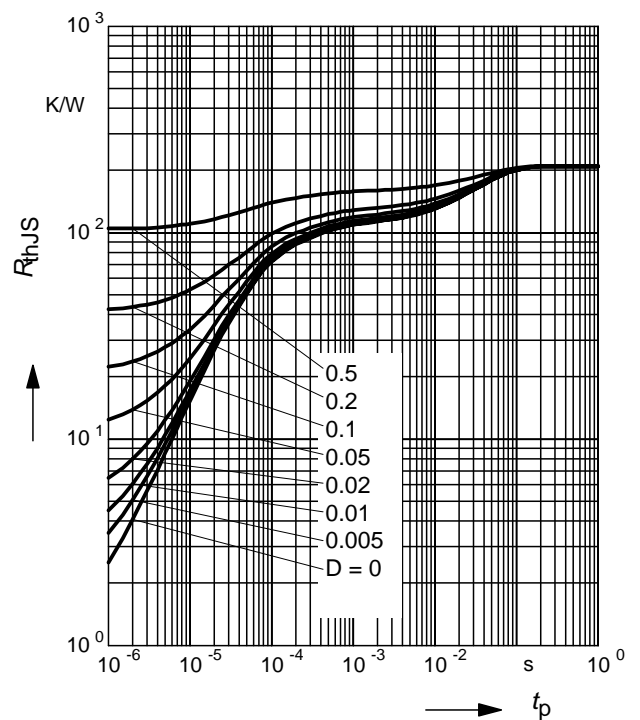
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAS70-04S



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

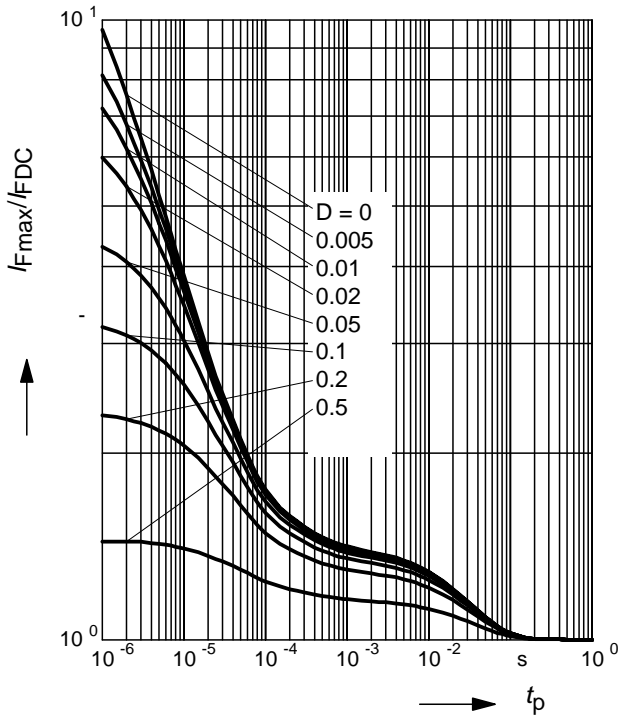
BAS70-04W, BAS70-06W



Permissible Pulse Load

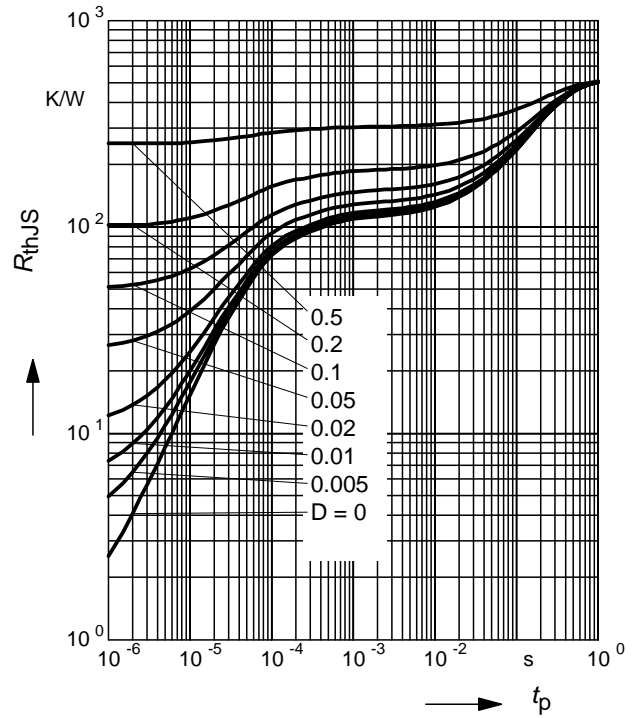
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAS70-04W, BAS70-06W



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

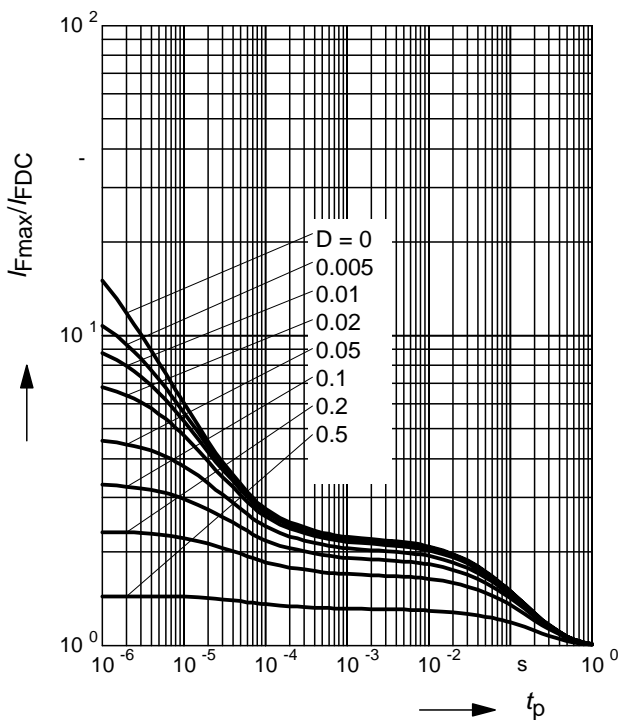
BAS70-05



Permissible Pulse Load

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

BAS70-05



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

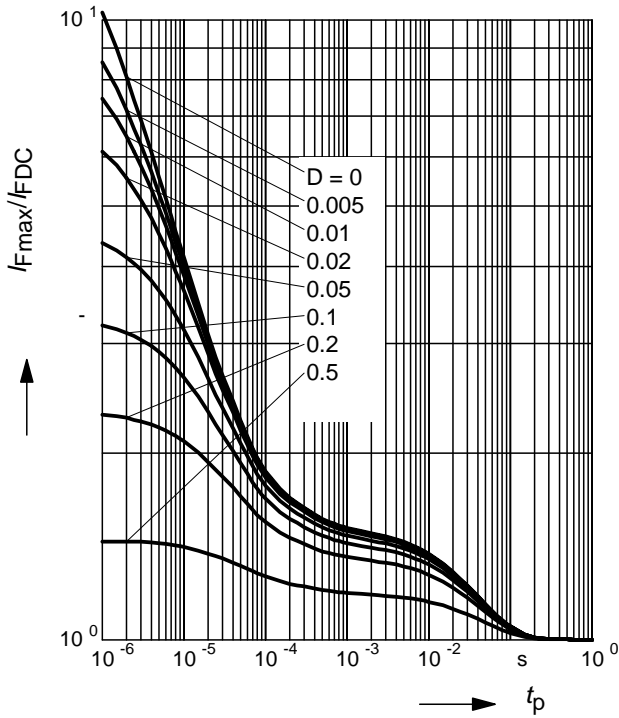
BAS70-05W



Permissible Pulse Load

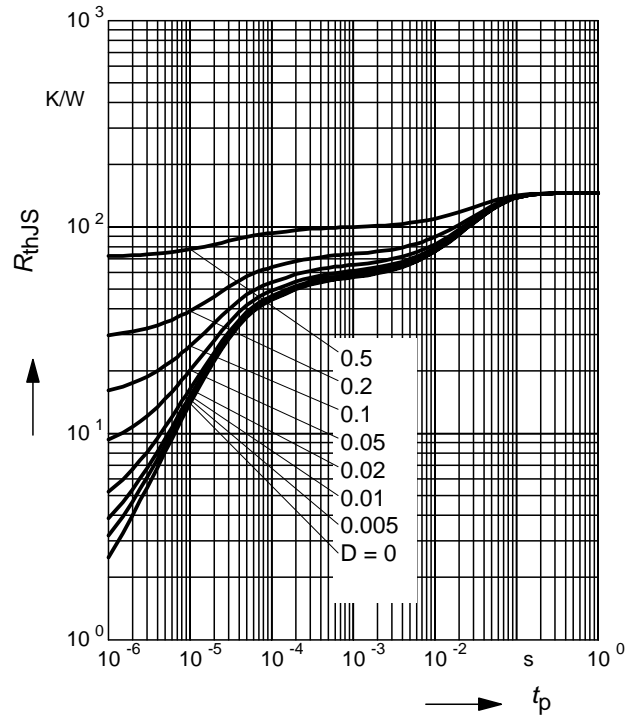
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-05W



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

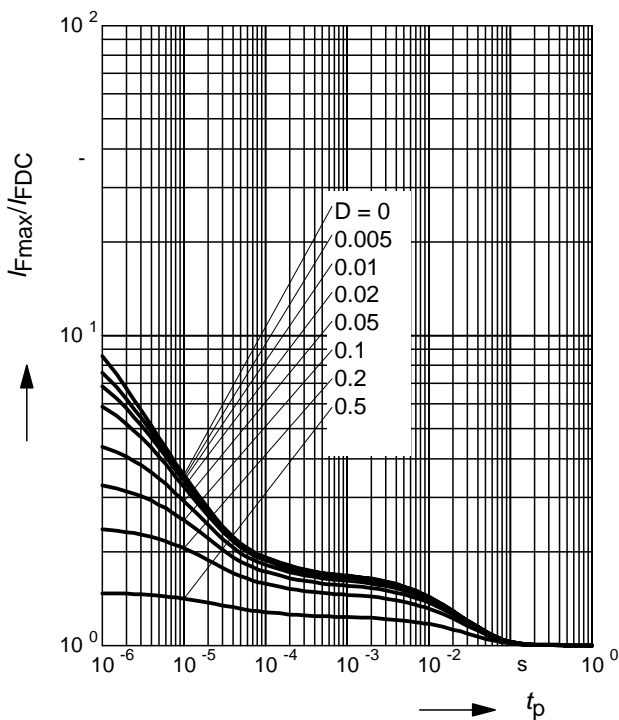
BAS70-07W



Permissible Pulse Load

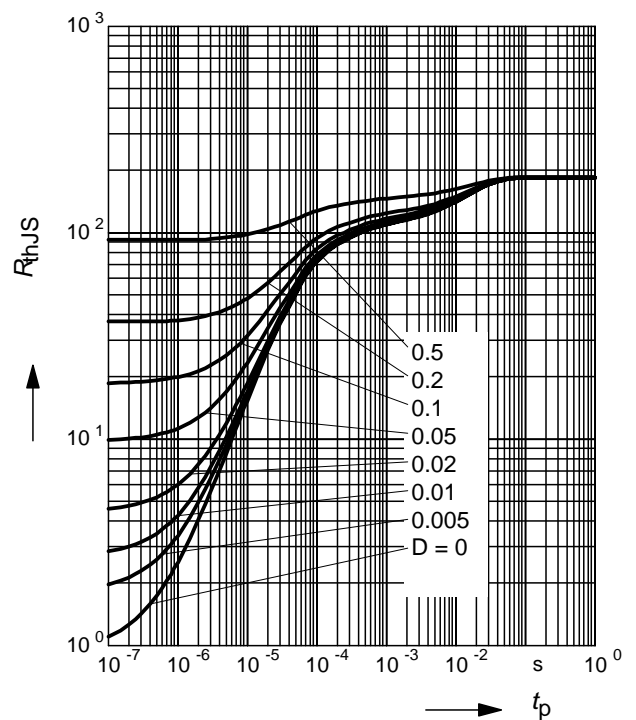
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-07W



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

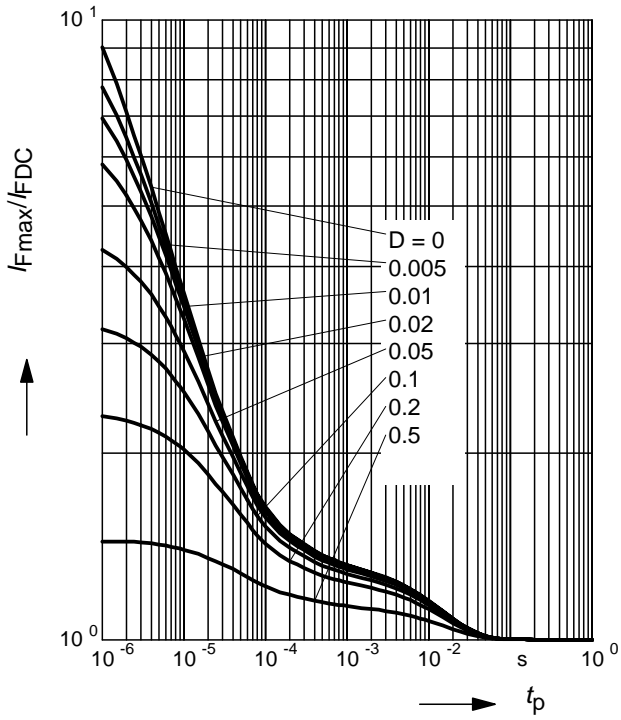
BAS170W



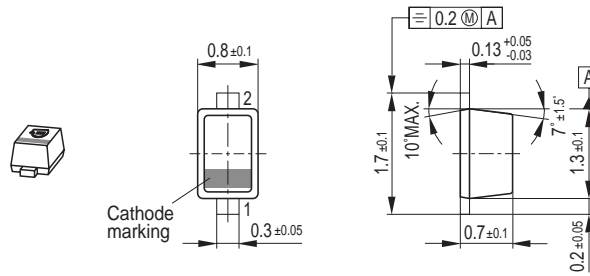
Permissible Pulse Load

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

BAS170W



Package Outline



Foot Print

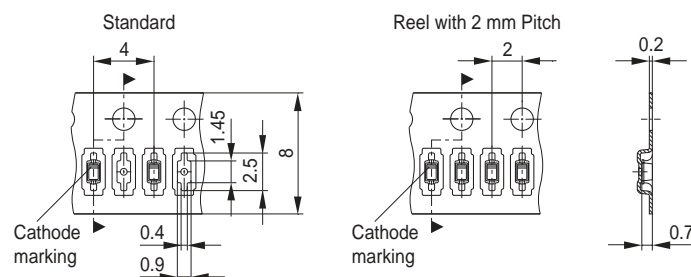


Marking Layout (Example)



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

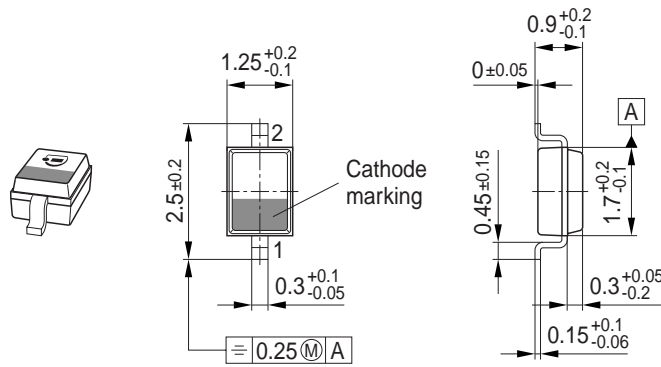


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75¹⁾) CES-Code

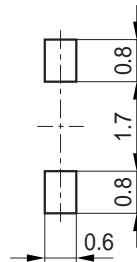
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

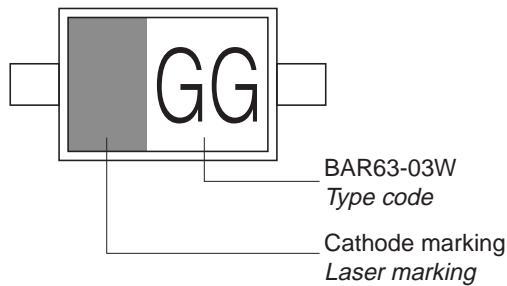
Package Outline



Foot Print

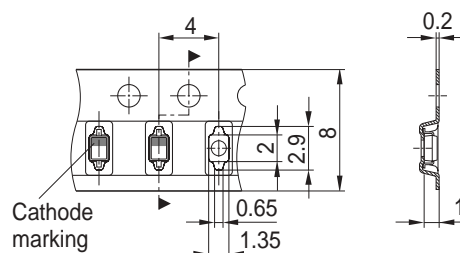


Marking Layout (Example)

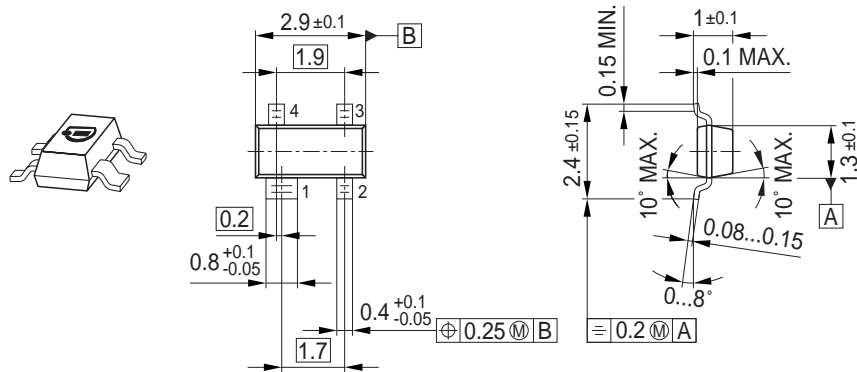


Standard Packing

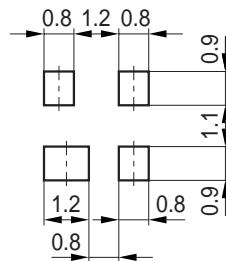
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



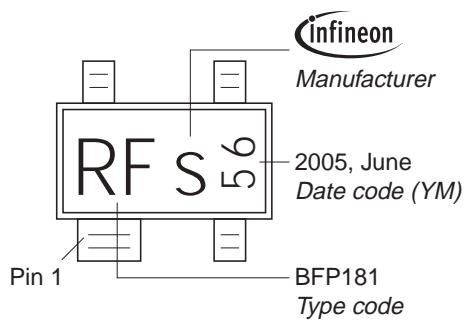
Package Outline



Foot Print

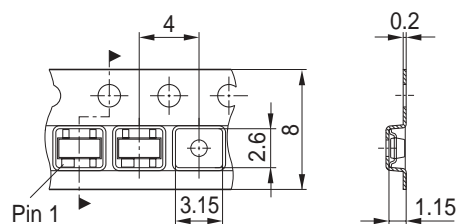


Marking Layout (Example)



Standard Packing

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



Package Outline

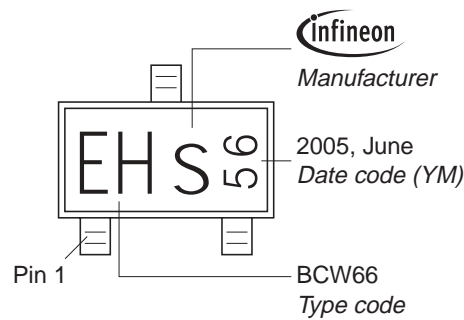


1) Lead width can be 0.6 max. in dambar area

Foot Print

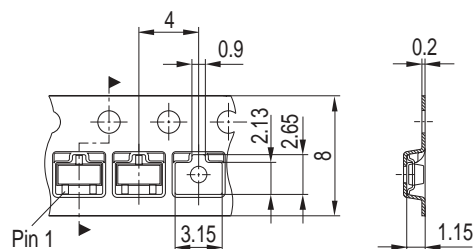


Marking Layout (Example)

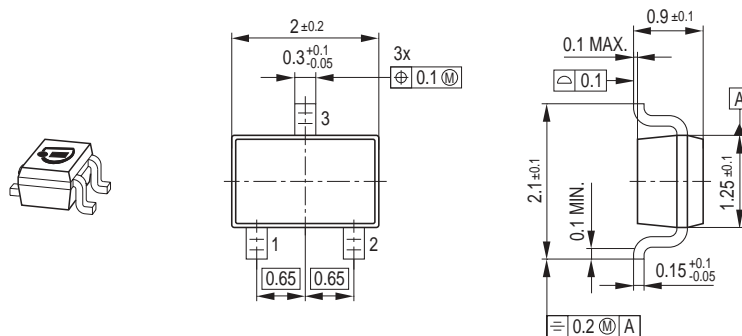


Standard Packing

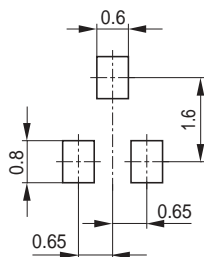
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



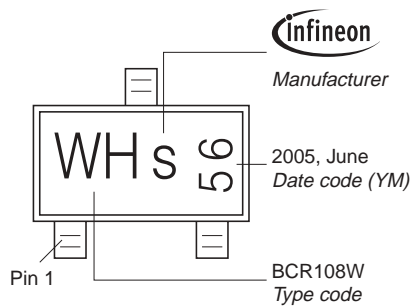
Package Outline



Foot Print

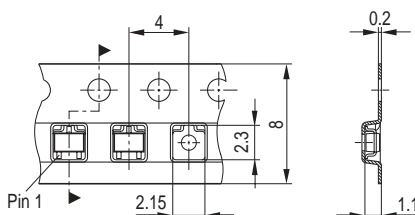


Marking Layout (Example)

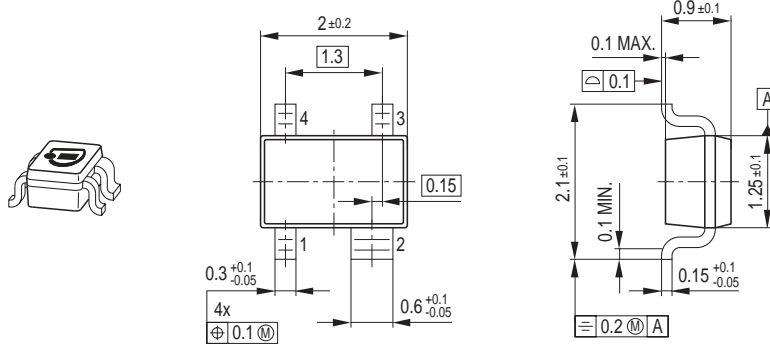


Standard Packing

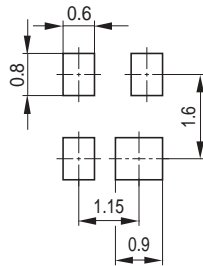
Reel $\varnothing 180$ mm = 3.000 Pieces/Reel
 Reel $\varnothing 330$ mm = 10.000 Pieces/Reel



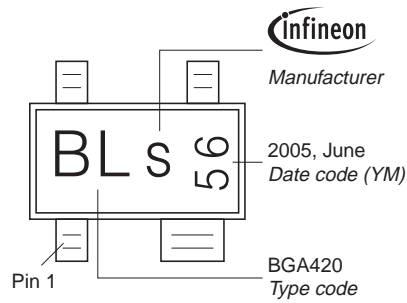
Package Outline



Foot Print

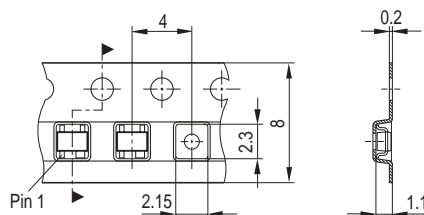


Marking Layout (Example)

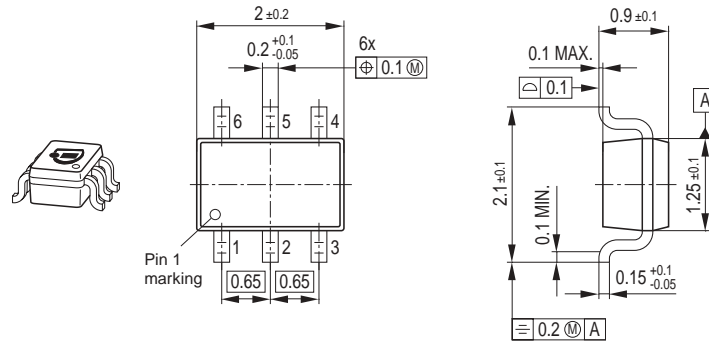


Standard Packing

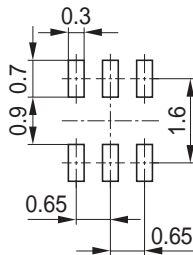
Reel ø180 mm = 3.000 Pieces/Reel
 Reel ø330 mm = 10.000 Pieces/Reel



Package Outline

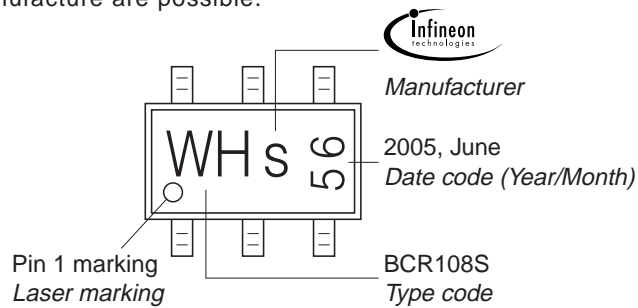


Foot Print



Marking Layout (Example)

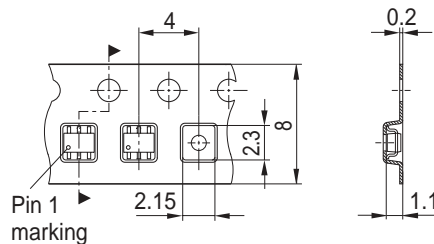
Small variations in positioning of Date code, Type code and Manufacture are possible.



Standard Packing

Reel \varnothing 180 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

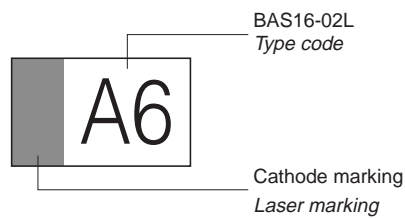
For board assembly information please refer to Infineon website "Packages"



■ Copper □ Solder mask

▨ Stencil apertures

Marking Layout (Example)

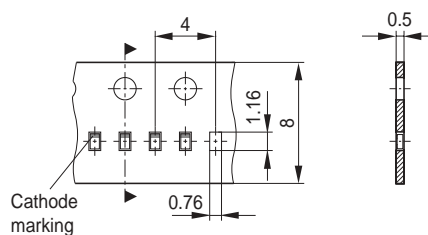


BAS16-02L
Type code

Cathode marking
Laser marking

Standard Packing

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



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JONHON

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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А