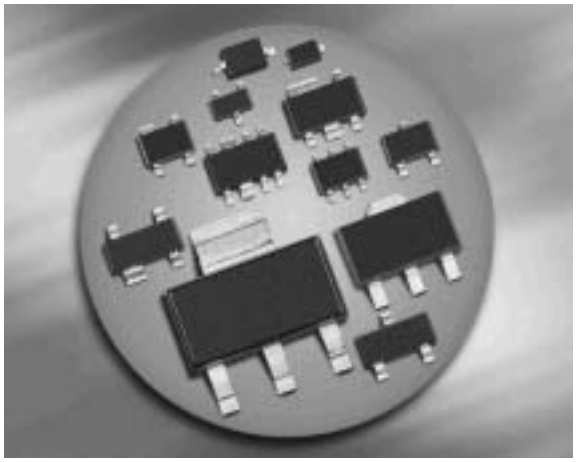
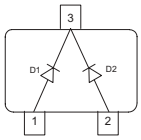
Silicon Switching Diode

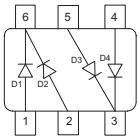
- For high-speed switching applications
- Common cathode configuration
- BAV70S / U: For orientation in reel see package information below



BAV70
BAV70T
BAV70W



BAV70S
BAV70U



Type	Package	Configuration	Marking
BAV70	SOT23	common cathode	A4s
BAV70S	SOT363	double common cathode	A4s
BAV70T	SC75	common cathode	A4
BAV70U	SC74	double common cathode	A4s
BAV70W	SOT323	common cathode	A4s

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, $T_S \leq$ 33°C		250	
BAV70S, $T_S \leq$ 85°C		250	
BAV70T, $T_S \leq$ 73°C		250	
BAV70U, $T_S \leq$ 90°C		250	
BAV70W, $T_S \leq$ 103°C		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

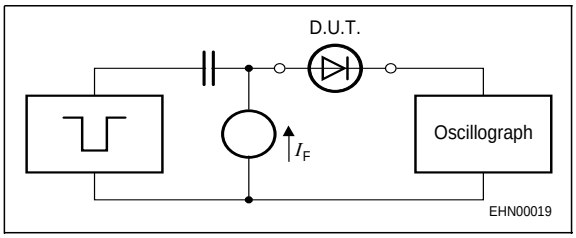
Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAV70		≤ 460	
BAV70S		≤ 260	
BAV70T		≤ 310	
BAV70U		≤ 240	
BAV70W		≤ 190	

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

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	I_R				µA
V_R = 70 V		-	-	0.15	
V_R = 25 V, T_A = 150 °C		-	-	30	
V_R = 70 V, T_A = 150 °C		-	-	50	
Forward voltage	V_F				mV
I_F = 1 mA		-	-	715	
I_F = 10 mA		-	-	855	
I_F = 50 mA		-	-	1000	
I_F = 100 mA		-	-	1200	
I_F = 150 mA		-	-	1250	
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 = 1mA , R_L = 100 Ω	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time

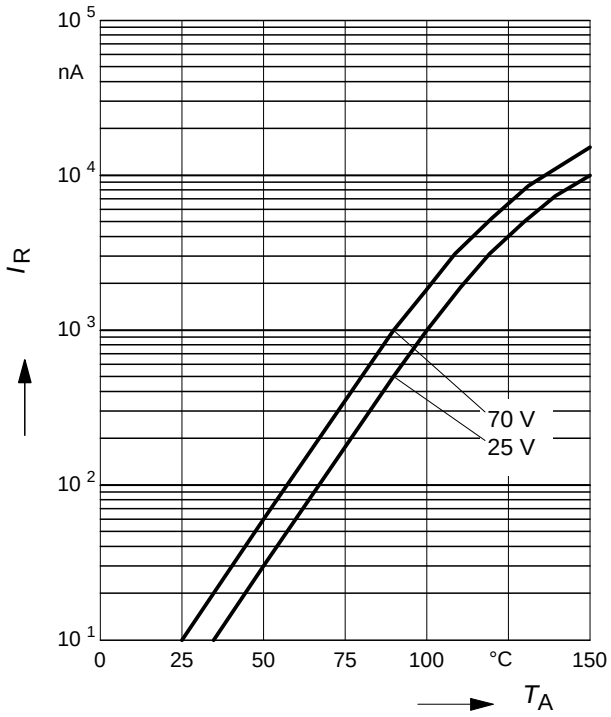


Pulse generator: t_p = 100ns, D = 0.05, t_r = 0.6ns, R_i = 50Ω

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

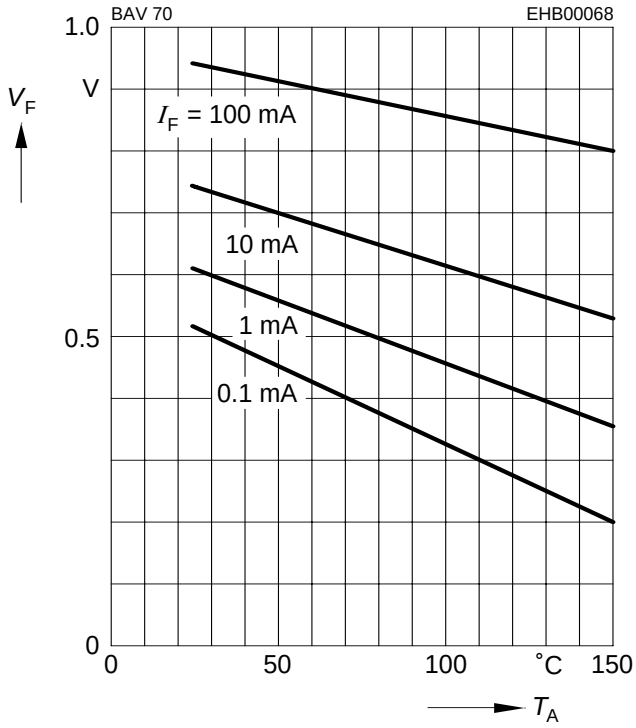
Reverse current $I_R = f(T_A)$

V_R = Parameter



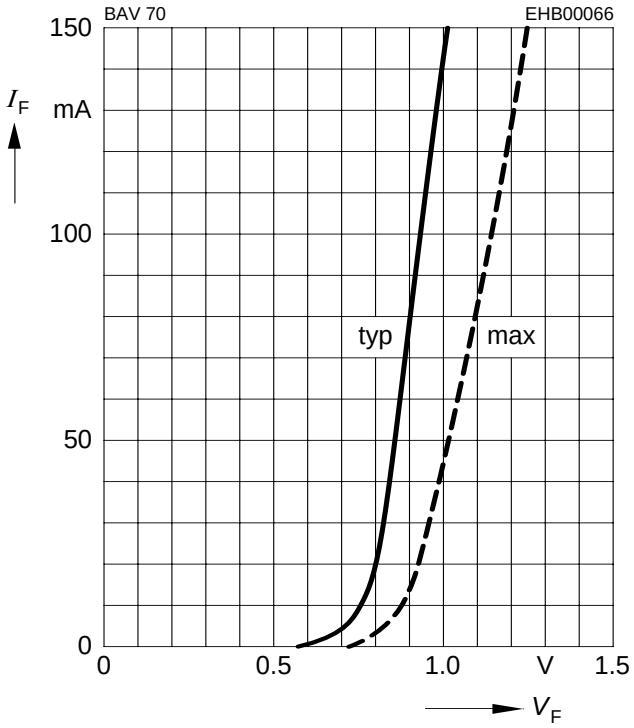
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



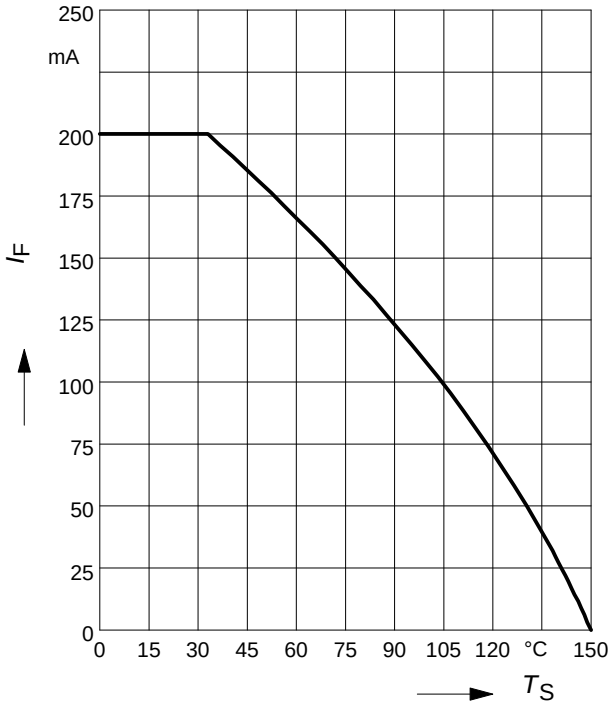
Forward current $I_F = f(V_F)$

T_A = 25°C



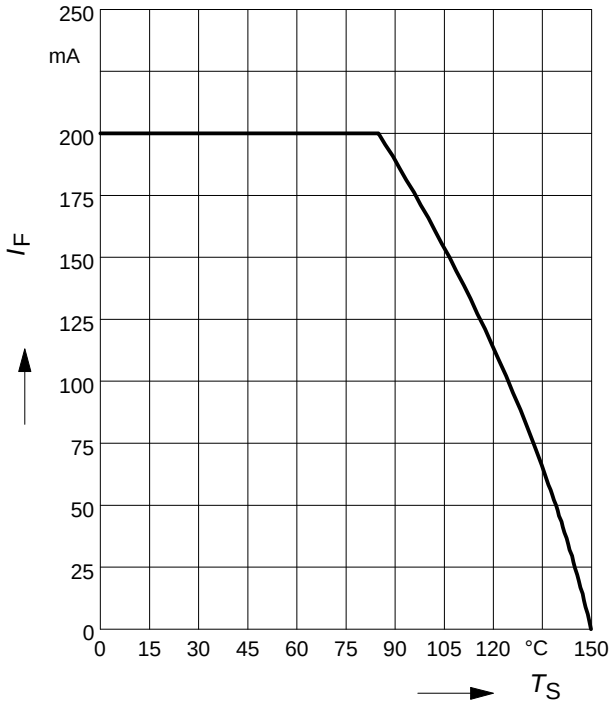
Forward current $I_F = f(T_S)$

BAV70



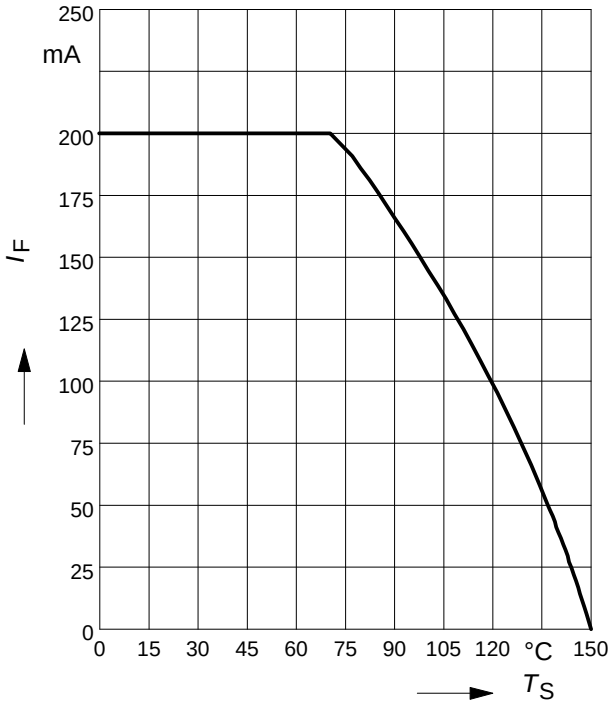
Forward current $I_F = f(T_S)$

BAV70S



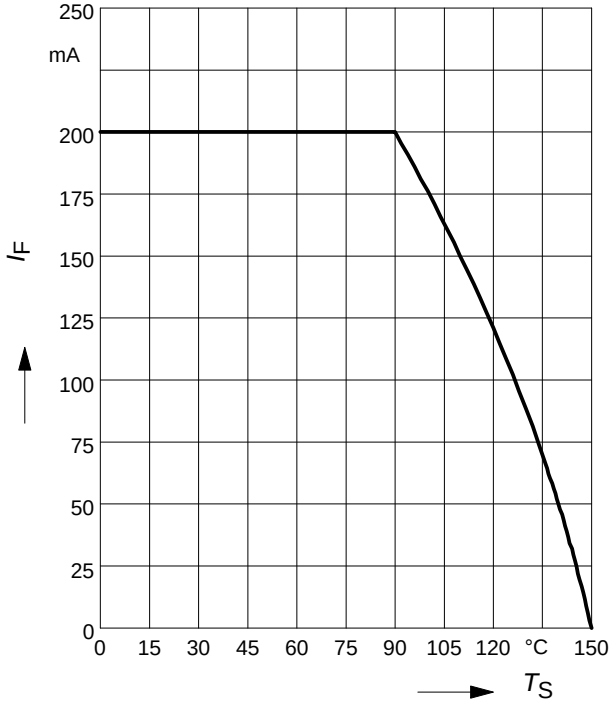
Forward current $I_F = f(T_S)$

BAV70T



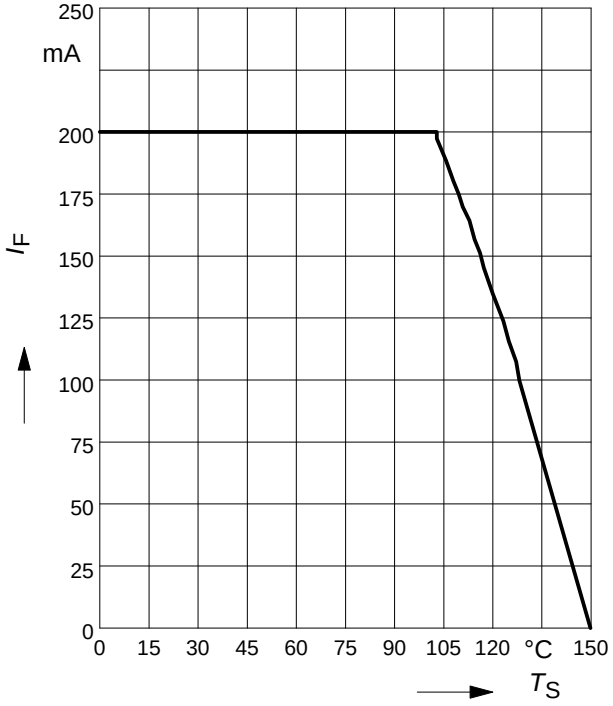
Forward current $I_F = f(T_S)$

BAV70U



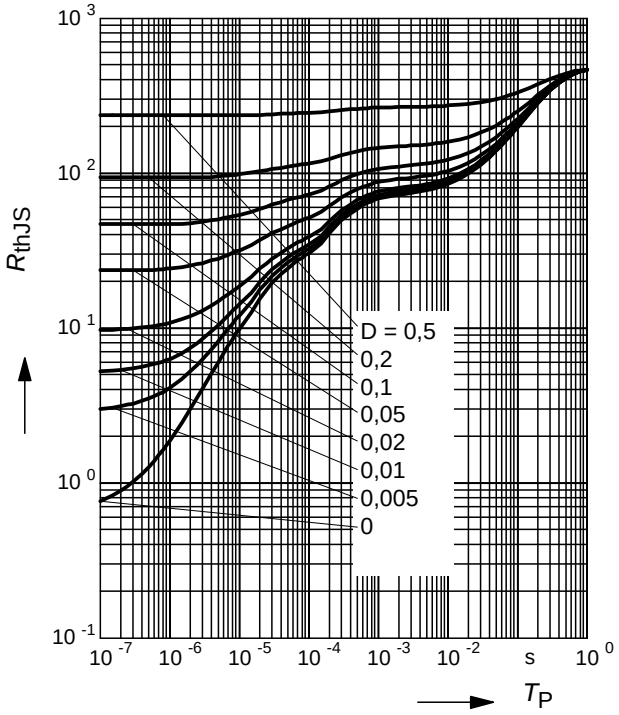
Forward current $I_F = f(T_S)$

BAV70W



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

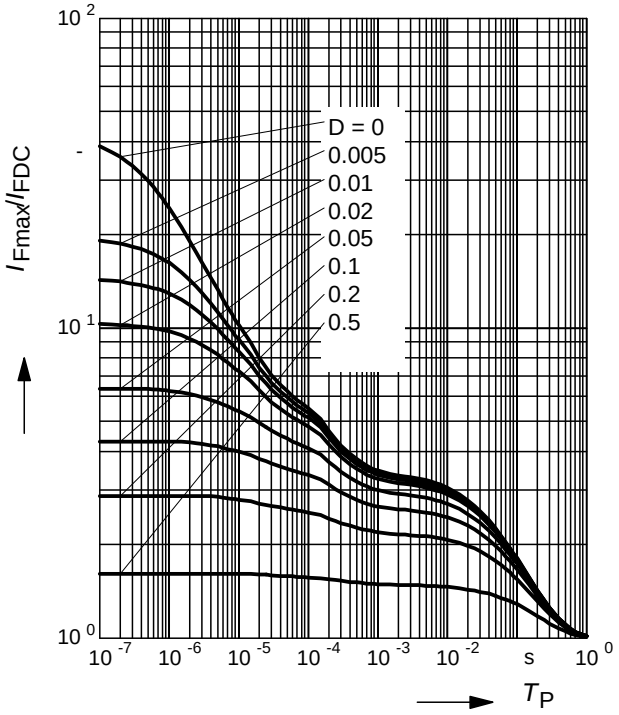
BAV70



Permissible Pulse Load

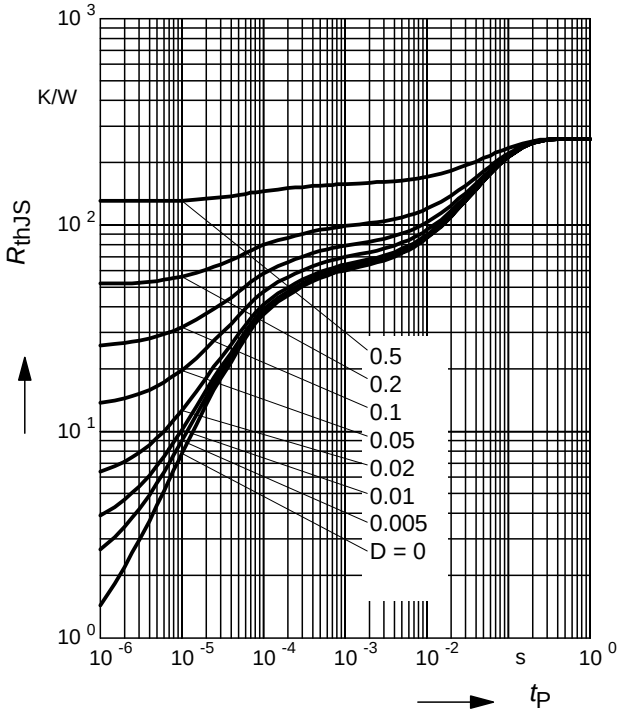
$I_{Fmax}/\ I_{FDC} = f\ (t_p)$

BAV70



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

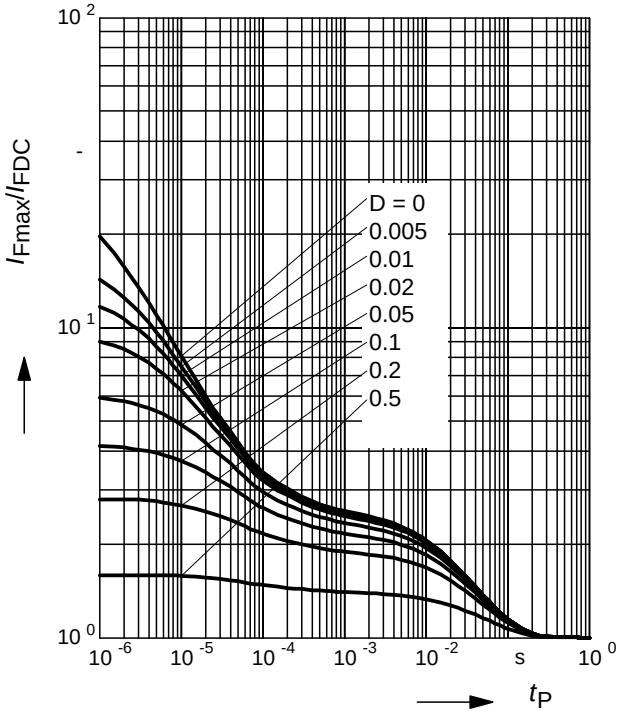
BAV70S



Permissible Pulse Load

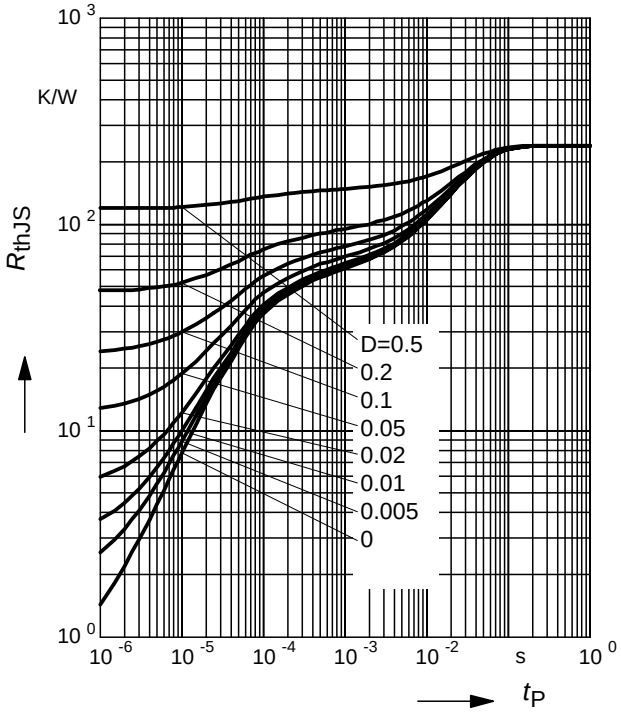
$I_{Fmax}/\ I_{FDC} = f\ (t_p)$

BAV70S



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

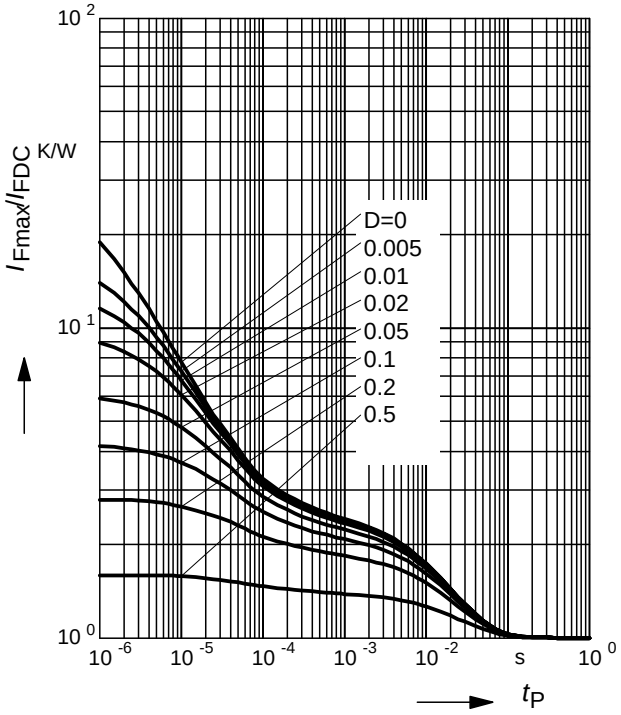
BAV70U



Permissible Pulse Load

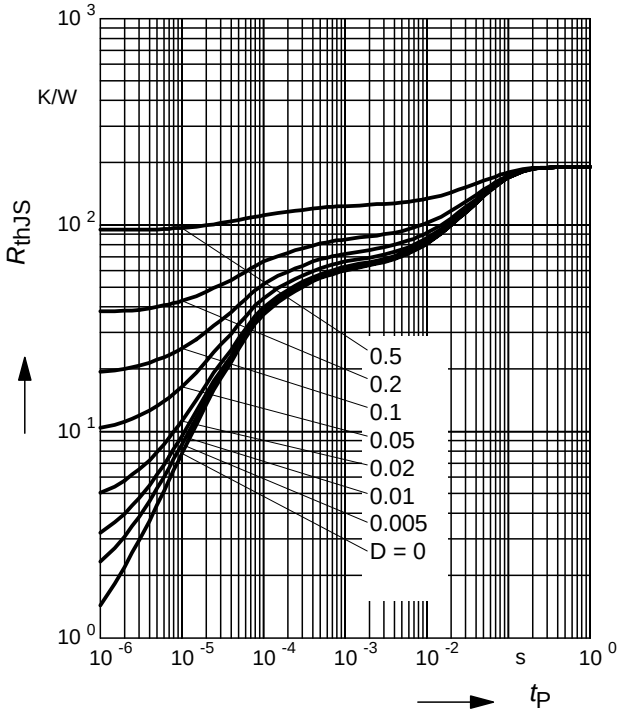
$I_{Fmax}/\ I_{FDC} = f\ (t_p)$

BAV70U



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

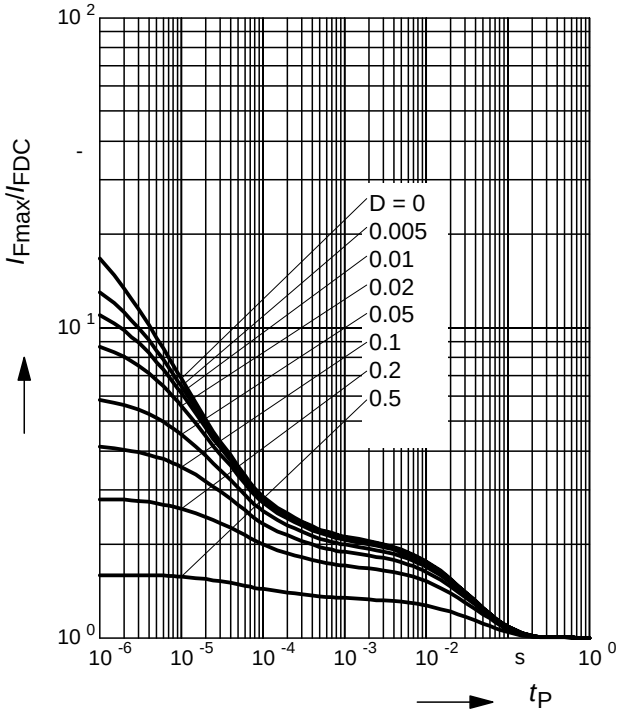
BAV70W



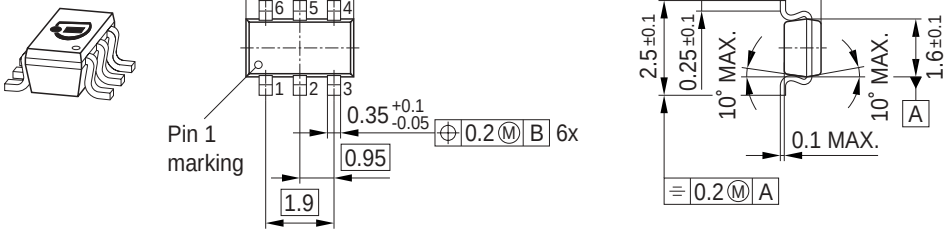
Permissible Pulse Load

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

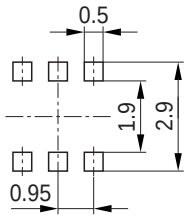
BAV70W



Package Outline

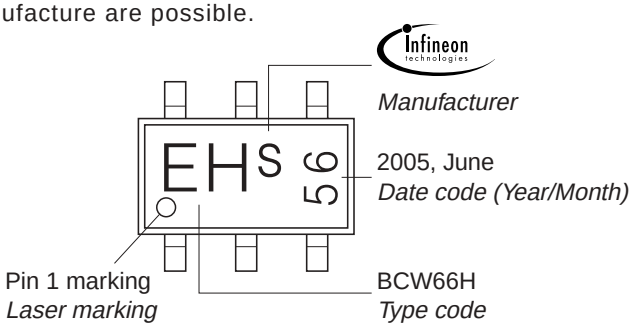


Foot Print



Marking Layout (Example)

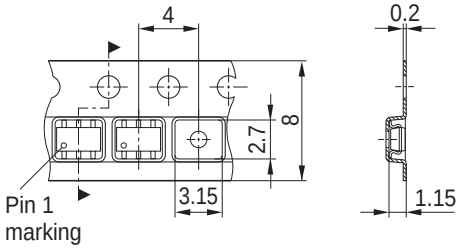
Small variations in positioning of
Date code, Type code and Manufacture are possible.



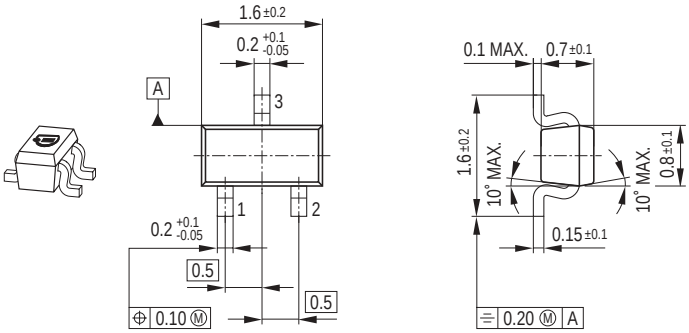
Standard Packing

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

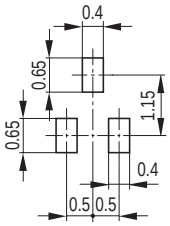
For symmetric types no defined Pin 1 orientation in reel.



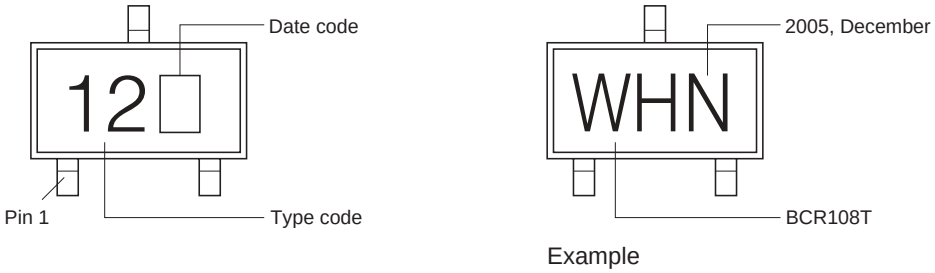
Package Outline



Foot Print



Marking Layout



Example

Standard Packing

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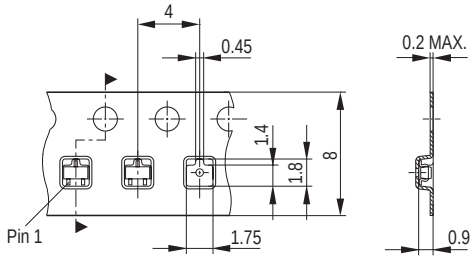
Reel ø330 mm = 10.000 Pieces/Reel

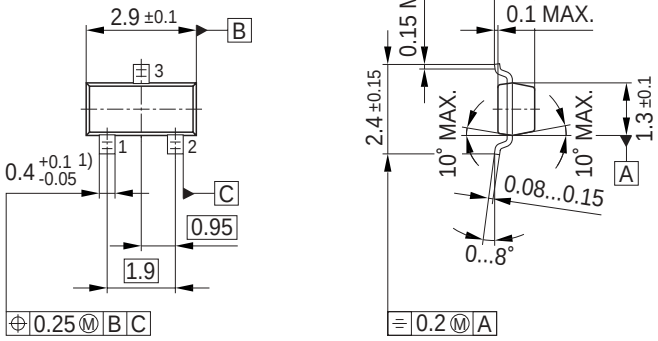


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1)]) CES-Code

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

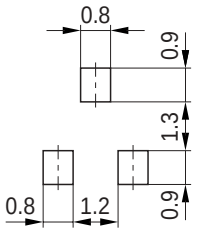
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

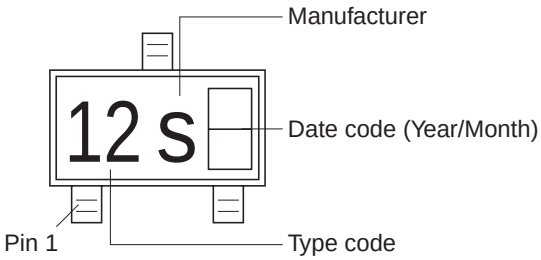


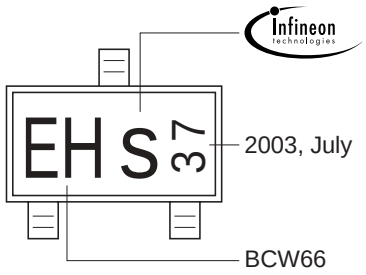
1) Lead width can be 0.6 max. in dambar area

Foot Print



Marking Layout





Example

Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
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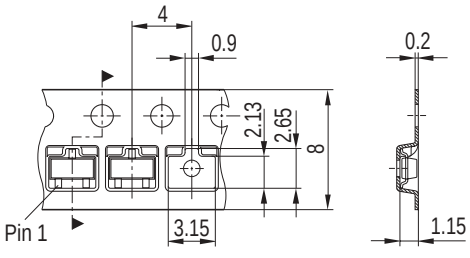
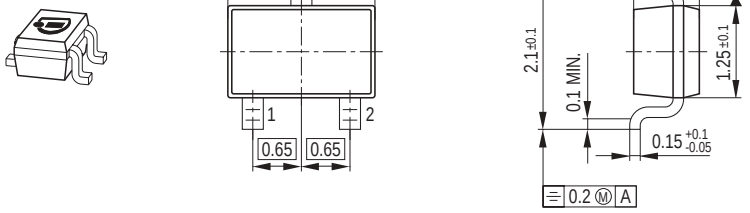


Package Outline



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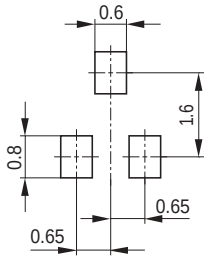
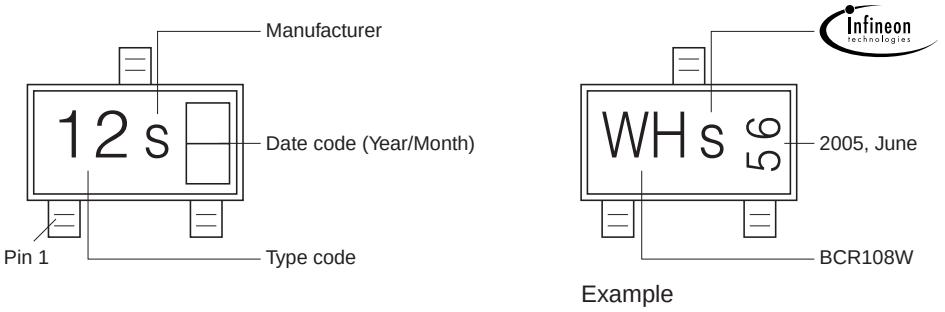


Marking Layout



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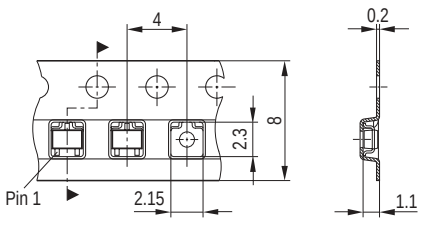
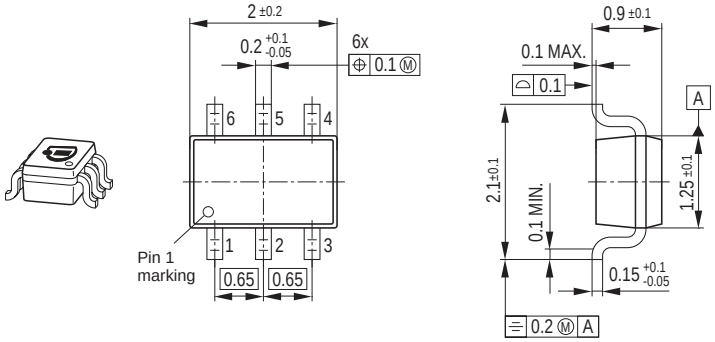
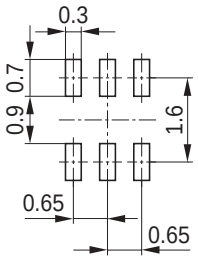


Package Outline



Foot Print



Marking Layout (Example)

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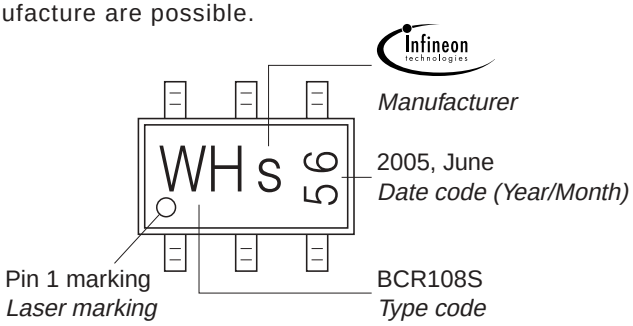

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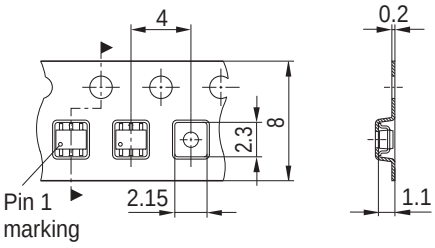

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