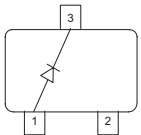
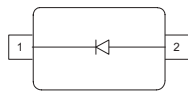
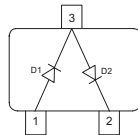
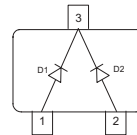
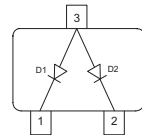


**Silicon Schottky Diodes**

- For low-loss, fast-recovery, meter protection, bias isolation and clamping application
- Integrated diffused guard ring
- Low forward voltage
- Pb-free (RoHS compliant) package <sup>1)</sup>
- Qualified according AEC Q101


**BAT64**

**BAT64-02W**

**BAT64-04  
BAT64-04W**

**BAT64-05  
BAT64-05W**

**BAT64-06  
BAT64-06W**

**ESD (Electrostatic discharge) sensitive device, observe handling precaution!**

Type	Package	Configuration	$L_S$ (nH)	Marking
BAT64	SOT23	single	1.8	63s
BAT64-02W	SCD80	single	0.6	64
BAT64-04	SOT23	series	1.8	64s
BAT64-04W	SOT323	series	1.4	64s
BAT64-05	SOT23	common cathode	1.8	65s
BAT64-05W	SOT323	common cathode	1.4	65s
BAT64-06	SOT23	common anode	1.8	66s
BAT64-06W	SOT323	common anode	1.4	66s

<sup>1</sup>Pb-containing package may be available upon special request

**Maximum Ratings at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	40	V
Forward current	$I_F$	250	mA
Non-repetitive peak surge forward current ( $t \leq 10\text{ms}$ )	$I_{FSM}$	800	
Average rectified forward current (50/60Hz, sinus)	$I_{FAV}$	120	
Total power dissipation	$P_{tot}$		mW
BAT64, $T_S \leq 86^\circ\text{C}$		250	
BAT64-02W, $T_S \leq 121^\circ\text{C}$		250	
BAT64-04, BAT64-06, $T_S \leq 61^\circ\text{C}$		250	
BAT64-04W, BAT64-06W, $T_S \leq 111^\circ\text{C}$		250	
BAT64-05, $T_S \leq 36^\circ\text{C}$		250	
BAT64-05W, $T_S \leq 104^\circ\text{C}$		250	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$		K/W
BAT64		$\leq 255$	
BAT64-02W		$\leq 115$	
BAT64-04, BAT64-06,		$\leq 355$	
BAT64-04W, BAT64-06W		$\leq 155$	
BAT64-05		$\leq 455$	
BAT64-05W		$\leq 185$	

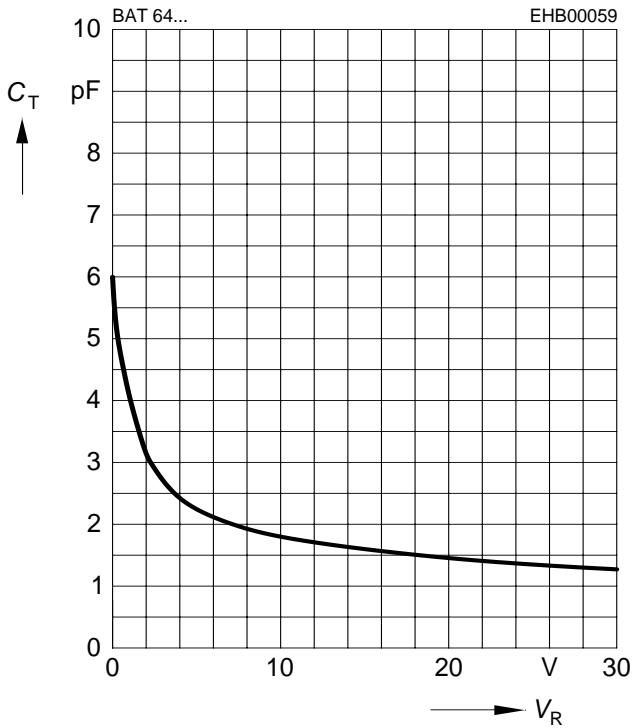
<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Breakdown voltage $I_{(BR)} = 10 \mu\text{A}$	$V_{(BR)}$	40	-	-	V
Reverse current $V_R = 30 \text{ V}$ $V_R = 30 \text{ V}, T_A = 85^\circ\text{C}$	$I_R$	- -	- -	2 200	$\mu\text{A}$
Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 30 \text{ mA}$ $I_F = 100 \text{ mA}$	$V_F$	270 310 370 500	320 385 440 570	350 430 520 750	mV
<b>AC Characteristics</b>					
Diode capacitance $V_R = 1 \text{ V}, f = 1 \text{ MHz}$	$C_T$	-	4	6	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, \text{measured } I_R = 1 \text{ mA},$ $R_L = 100 \Omega$	$t_{rr}$	-	-	5	ns

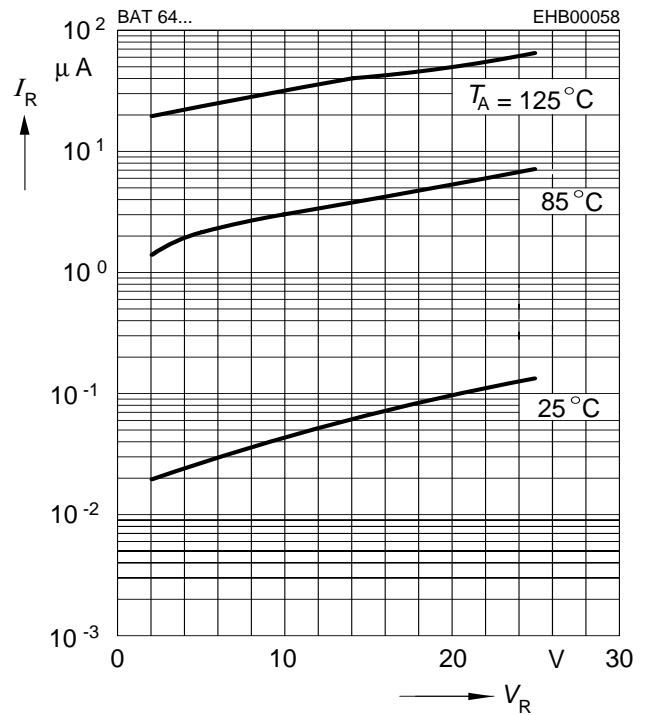
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



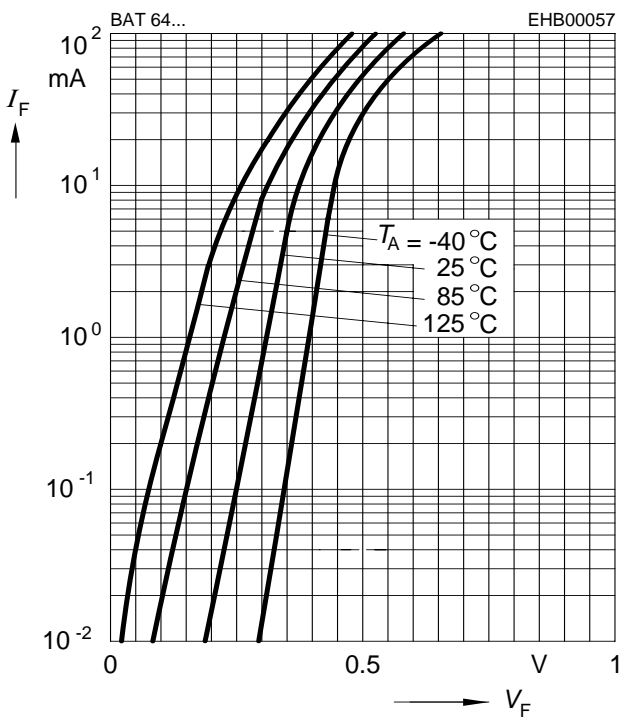
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



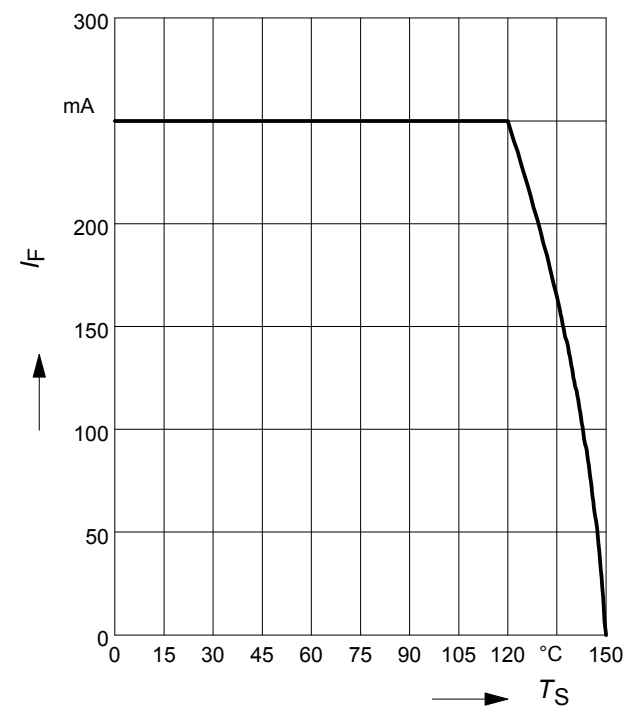
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



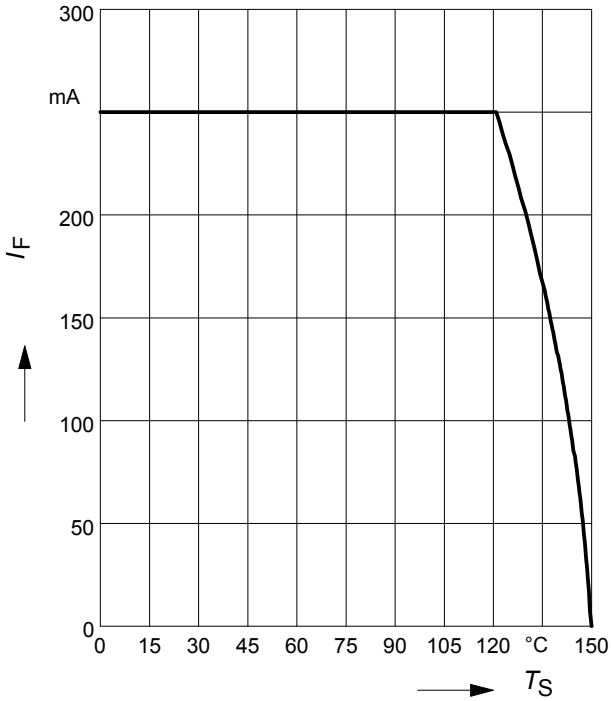
**Forward current  $I_F = f(T_S)$**

BAT64W



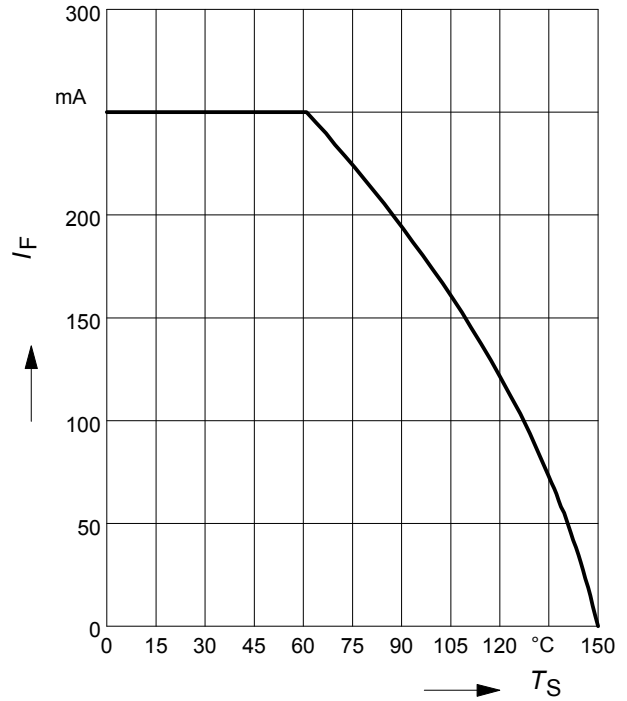
Forward current  $I_F = f(T_S)$

BAT64-02W



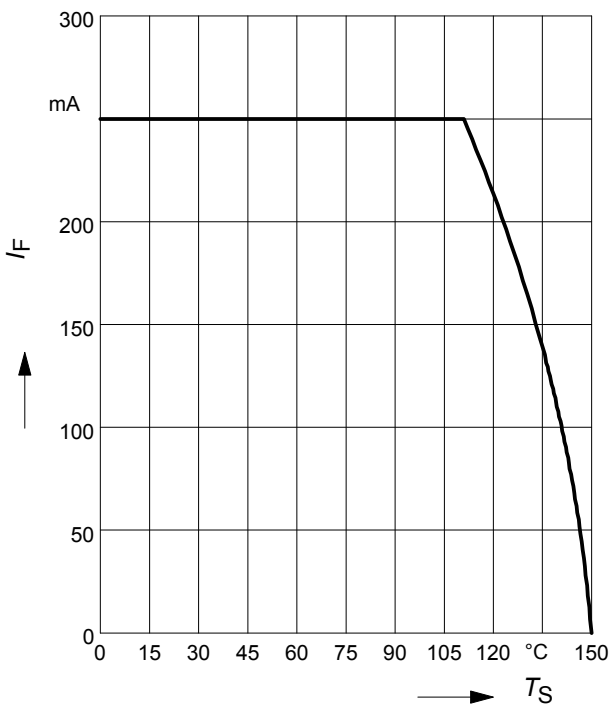
Forward current  $I_F = f(T_S)$

BAT64-04, BAT64-06



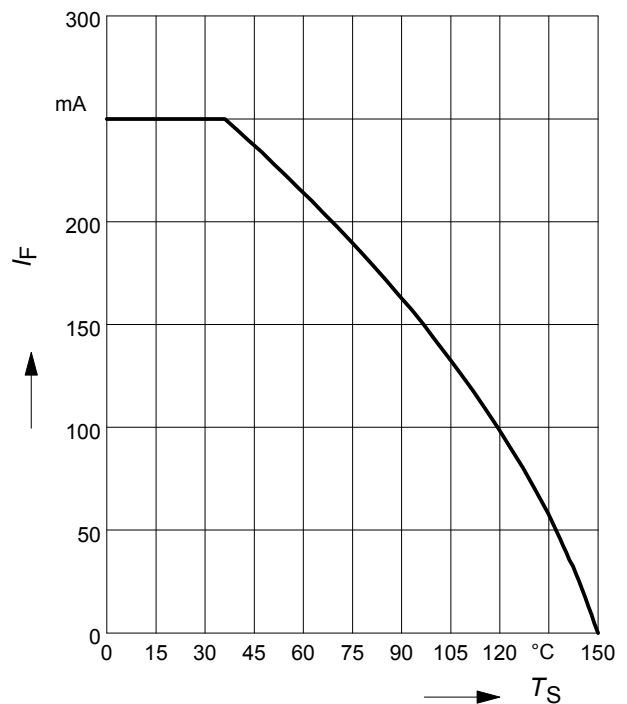
Forward current  $I_F = f(T_S)$

BAT64-04W, BAT64-06W



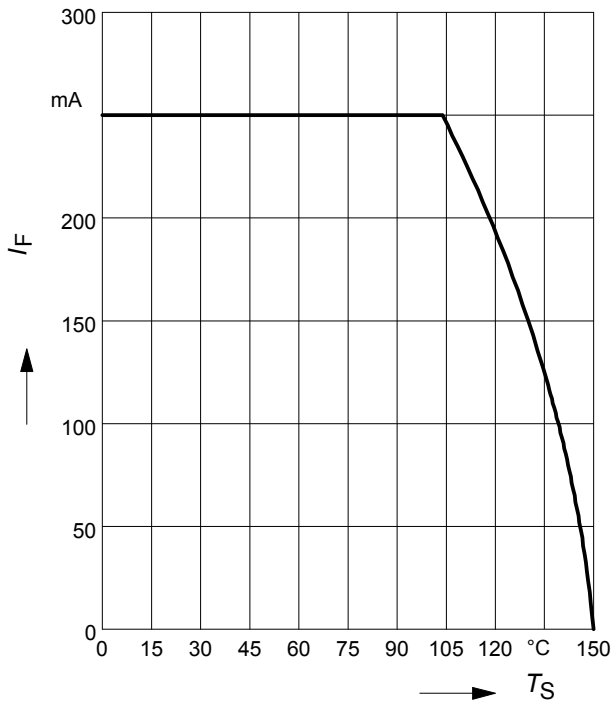
Forward current  $I_F = f(T_S)$

BAT64-05



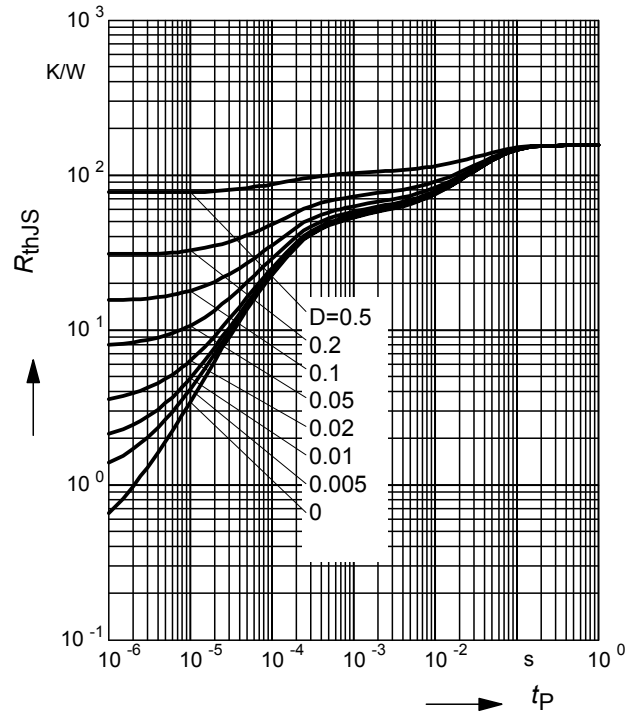
**Forward current  $I_F = f(T_S)$**

BAT64-05W



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

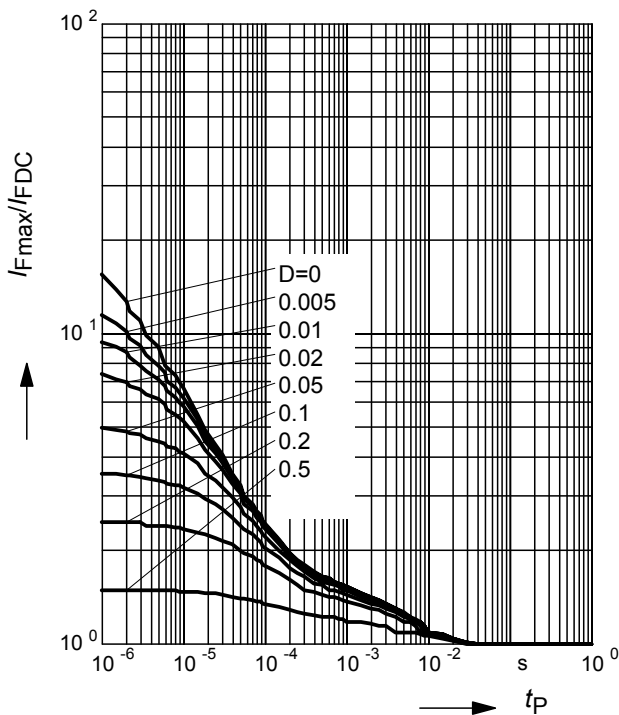
BAT64-02W



**Permissible Pulse Load**

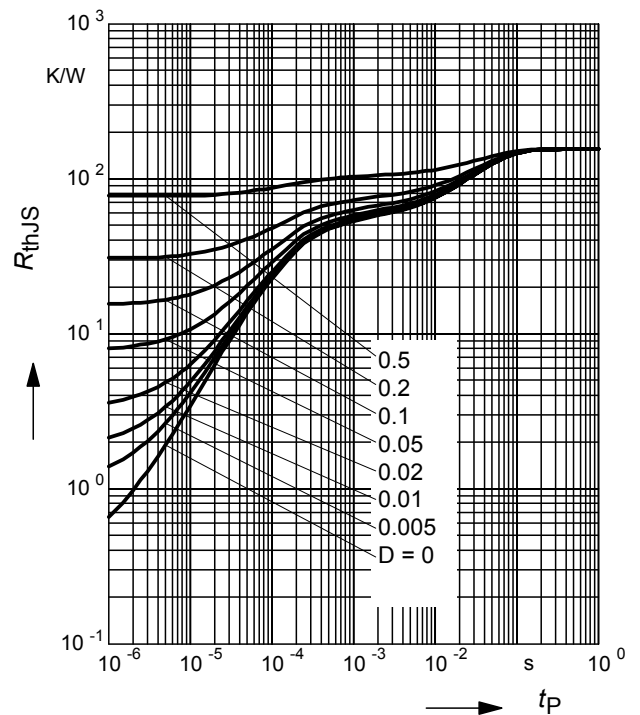
$I_{Fmax} / I_{FDC} = f(t_p)$

BAT64-02W



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

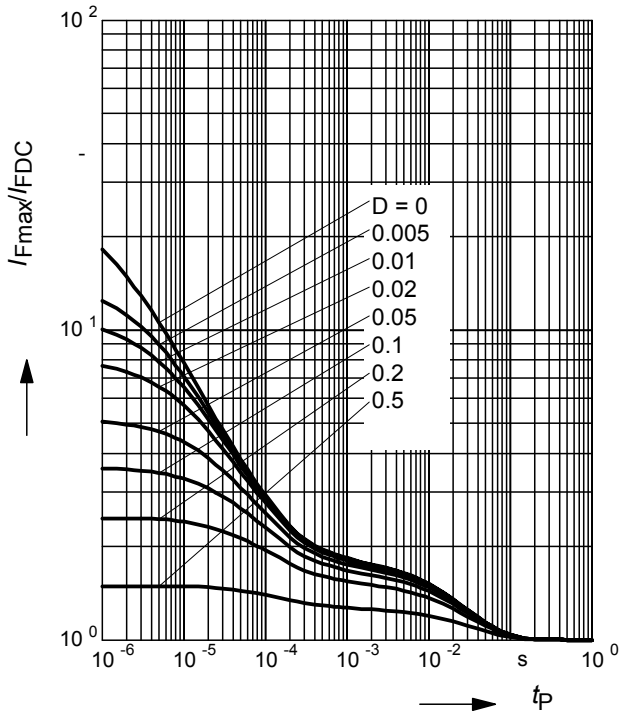
BAT64-04W, BAT64-06W



**Permissible Pulse Load**

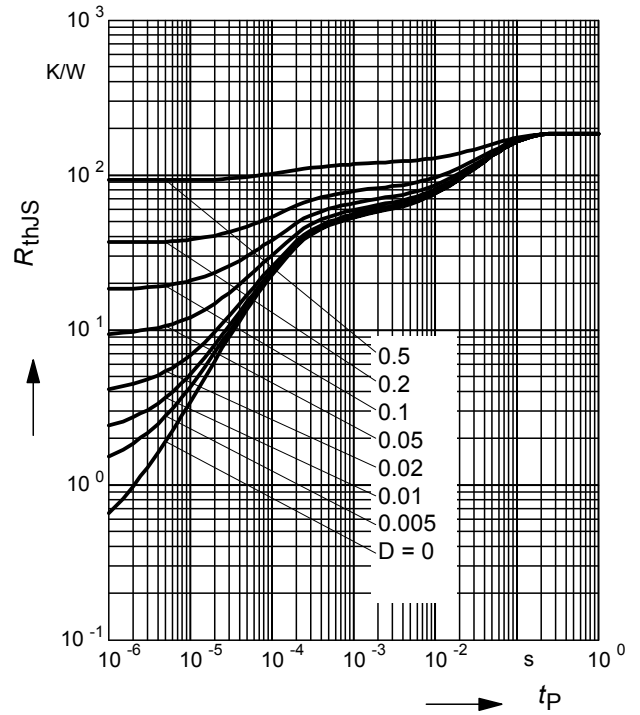
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAT64-04W, BAT64-06W



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

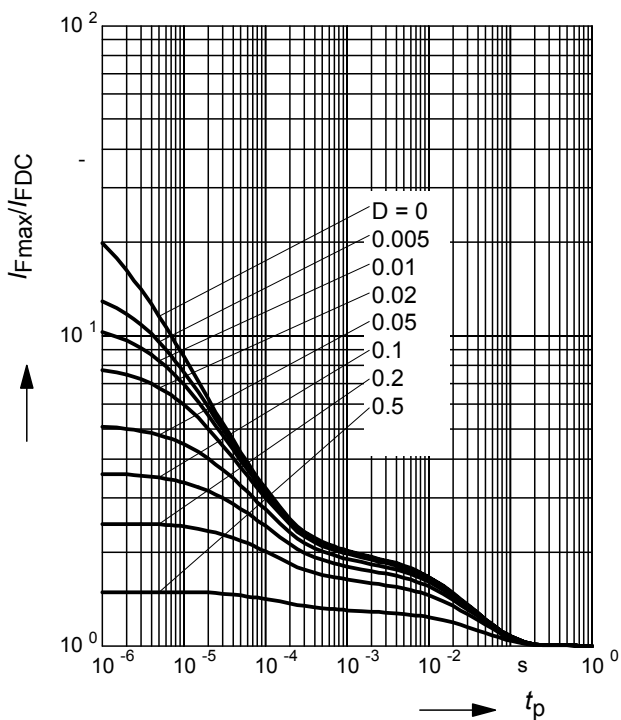
BAT64-05W



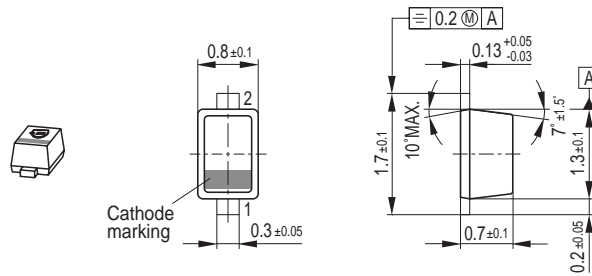
**Permissible Pulse Load**

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

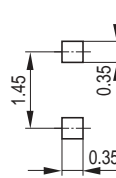
BAT64-05W



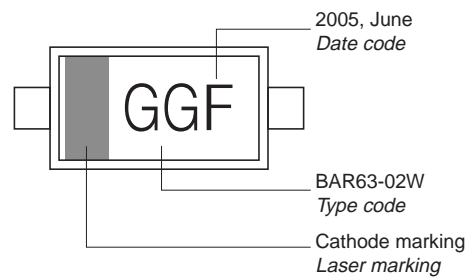
Package Outline



Foot Print

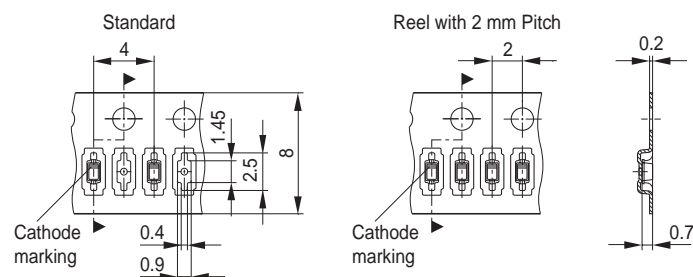


Marking Layout (Example)



Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel





Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) 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

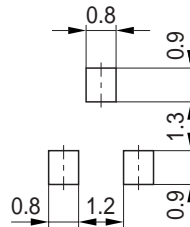
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

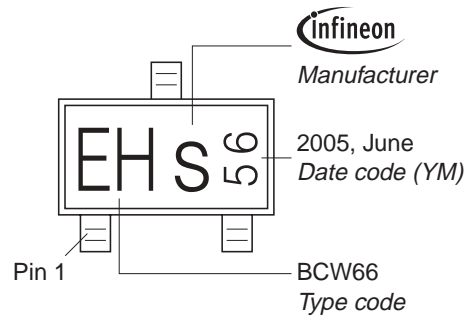


1) Lead width can be 0.6 max. in dambar area

Foot Print

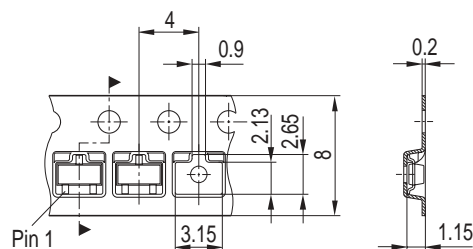


Marking Layout (Example)

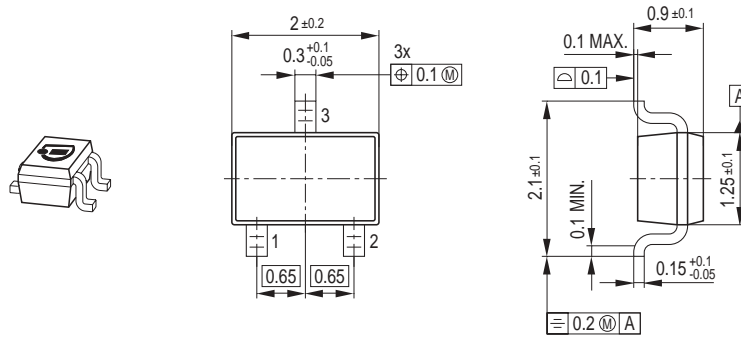


Standard Packing

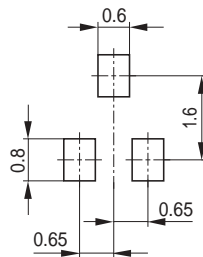
Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



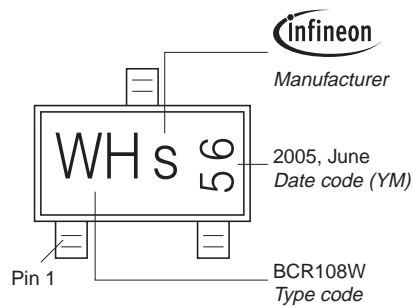
Package Outline



Foot Print

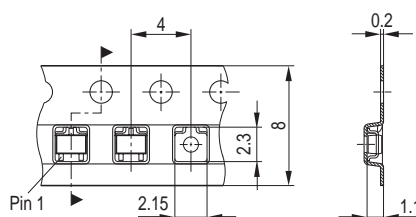


Marking Layout (Example)



Standard Packing

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



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