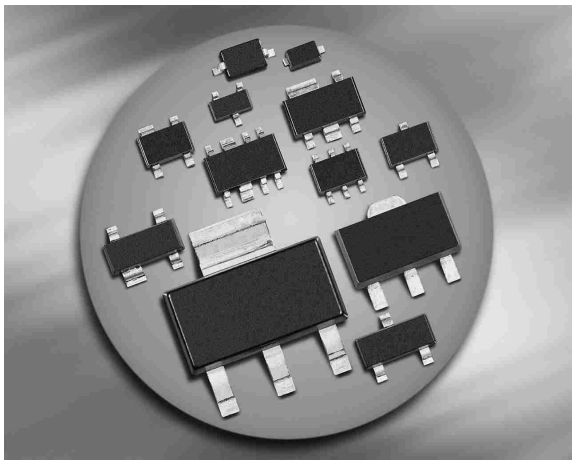
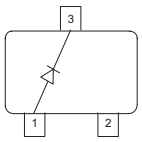
Silicon Schottky Diodes

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

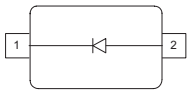


AEC Qualified RoHS

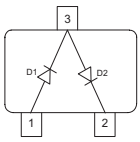
BAT64



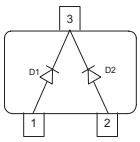
BAT64-02W
BAT64-02V



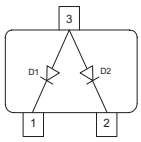
BAT64-04
BAT64-04W



BAT64-05
BAT64-05W



BAT64-06
BAT64-06W



ESD (**E**lectro**s**tatic **d**ischarge) sensitive device, observe handling precaution!

Type	Package	Configuration	L_S(nH)	Marking
BAT64	SOT23	single	1.8	63s
BAT64-02V	SC79	single	0.6	t
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

* Not for new design

Maximum Ratings at T_A = 25 °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 ($t \leq 10$ms)	I_{FSM}	800	
Average rectified forward current (50/60Hz, sinus)	I_{FAV}	120	
Total power dissipation	P_{tot}		mW
BAT64, $T_S \leq 86$°C		250	
BAT64-02W, -02V $T_S \leq 121$°C		250	
BAT64-04, BAT64-06, $T_S \leq 61$°C		250	
BAT64-04W, BAT64-06W, $T_S \leq 111$°C		250	
BAT64-05, $T_S \leq 36$°C		250	
BAT64-05W, $T_S \leq 104$°C		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAT64		≤ 255	
BAT64-02W, -02V		≤ 115	
BAT64-04, BAT64-06,		≤ 355	
BAT64-04W, BAT64-06W		≤ 155	
BAT64-05		≤ 455	
BAT64-05W		≤ 185	

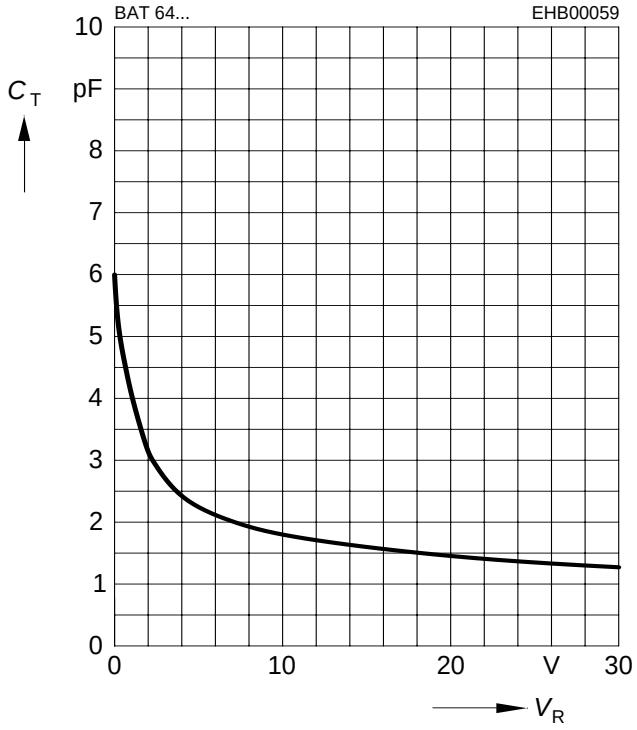
[1]For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

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	$V_{(BR)}$	40	-	-	V
Reverse current	I_R				µA
V_R = 30 V		-	-	2	
V_R = 30 V, T_A = 85 °C		-	-	200	
Forward voltage	V_F				mV
I_F = 1 mA		270	320	350	
I_F = 10 mA		310	385	430	
I_F = 30 mA		370	440	520	
I_F = 100 mA		500	570	750	
AC Characteristics					
Diode capacitance V_R = 1 V, f = 1 MHz	C_T	-	4	6	pF
Reverse recovery time I_F = 10 mA, I_R = 10 mA, measured I_R = 1 mA , R_L = 100 Ω	t_{rr}	-	-	5	ns

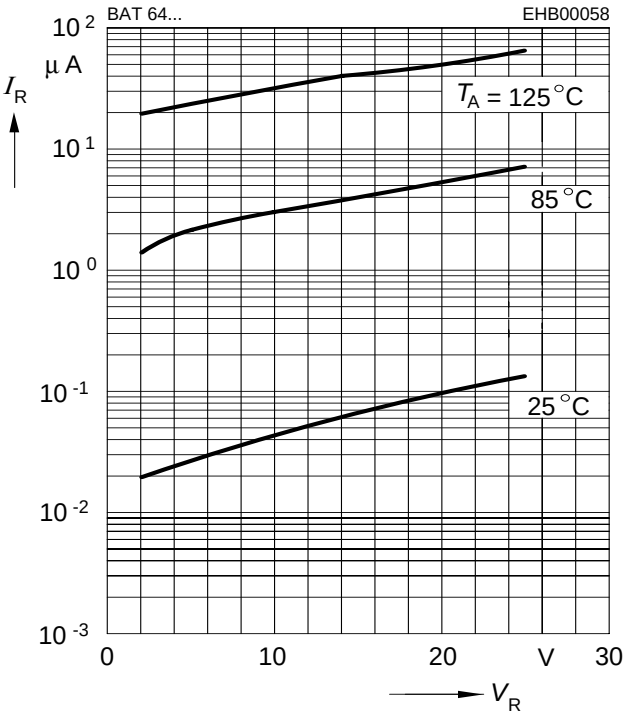
Diode capacitance $C_T = f(V_R)$

f = 1MHz



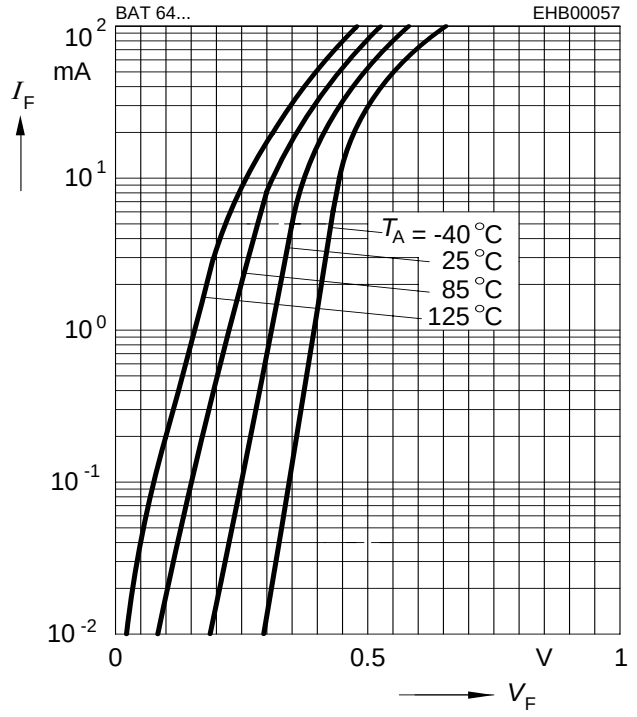
Reverse current $I_R = f(V_R)$

T_A = Parameter



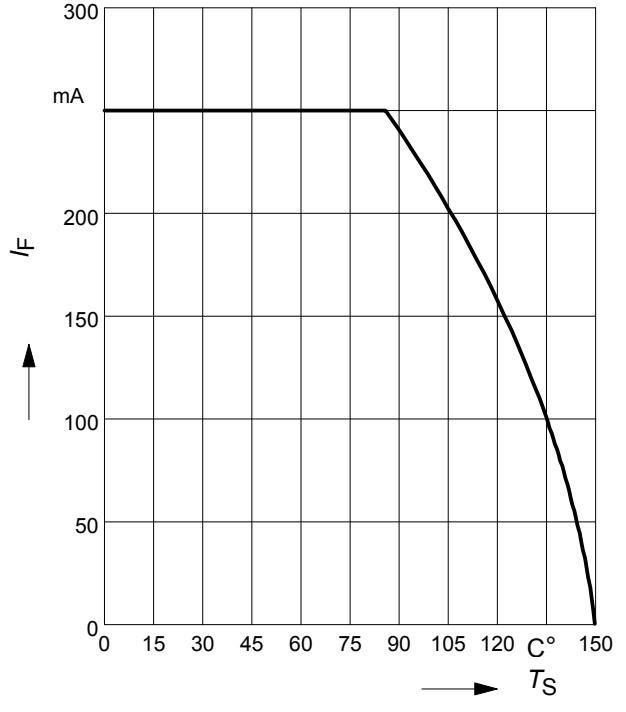
Forward current $I_F = f(V_F)$

T_A = Parameter

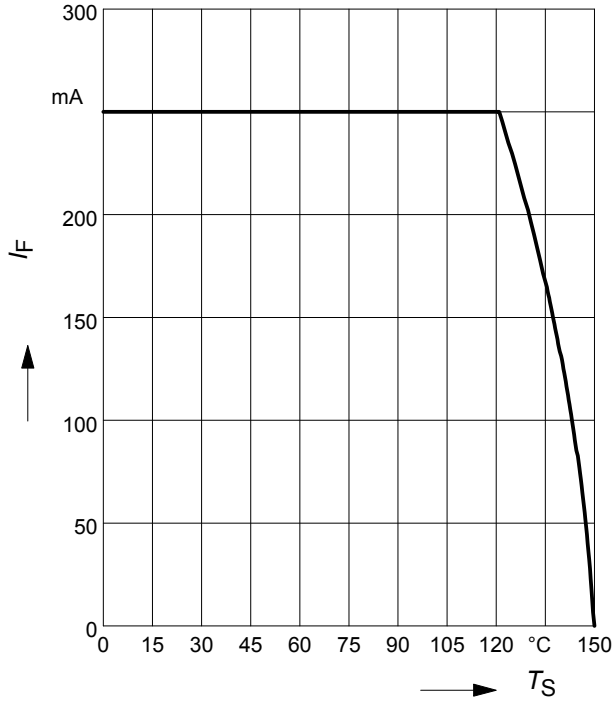


Forward current $I_F = f(T_S)$

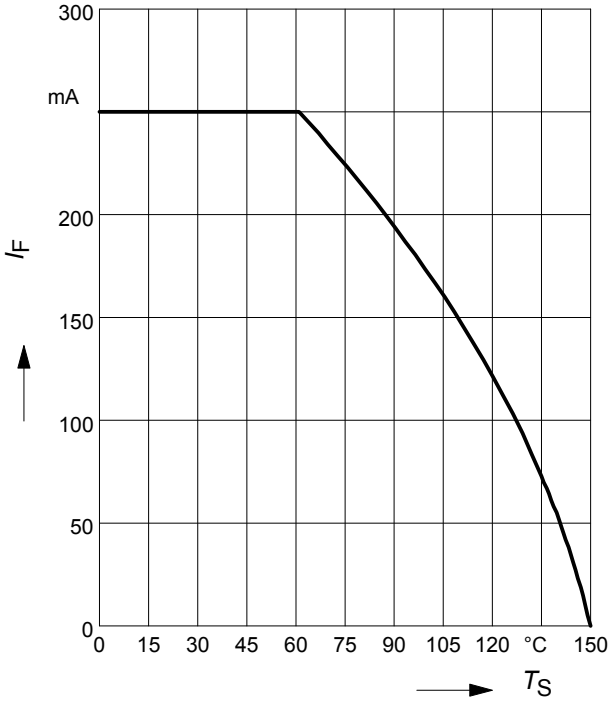
BAT64



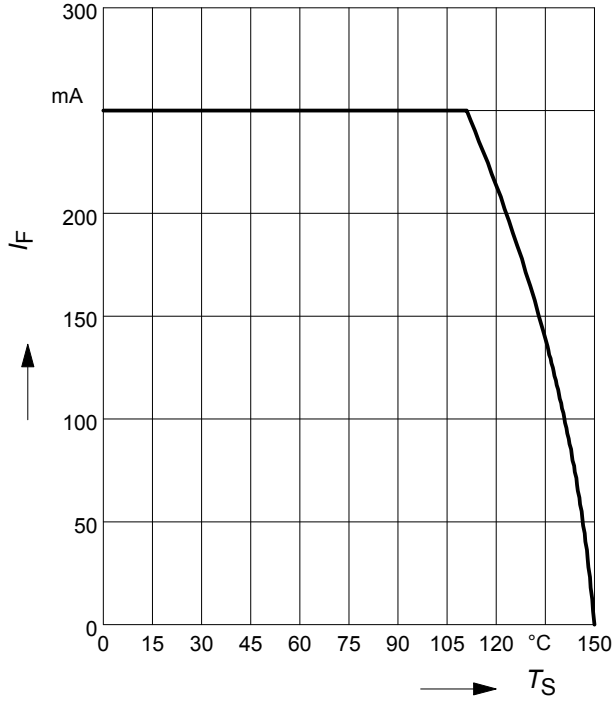
Forward current $I_F = f(T_S)$
BAT64-02W, -02V



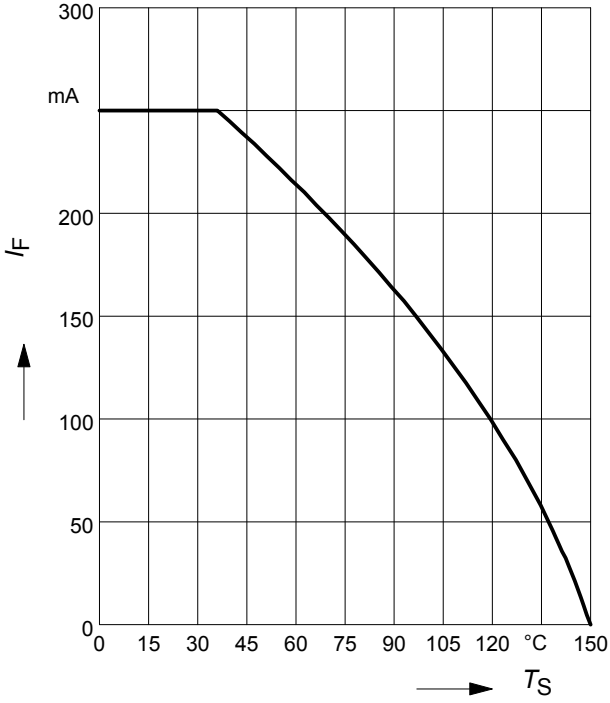
Forward current $I_F = f(T_S)$
BAT64-04, BAT64-06



Forward current $I_F = f(T_S)$
BAT64-04W, BAT64-06W

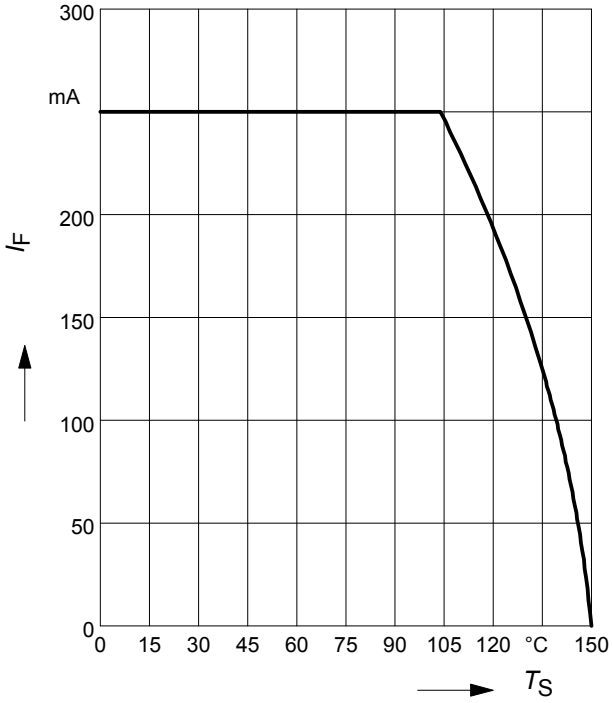


Forward current $I_F = f(T_S)$
BAT64-05



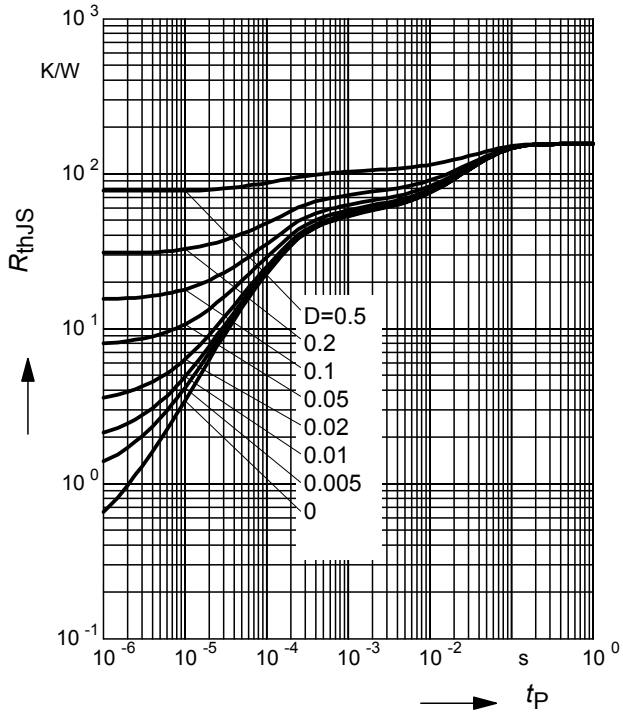
Forward current $I_F = f(T_S)$

BAT64-05W



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

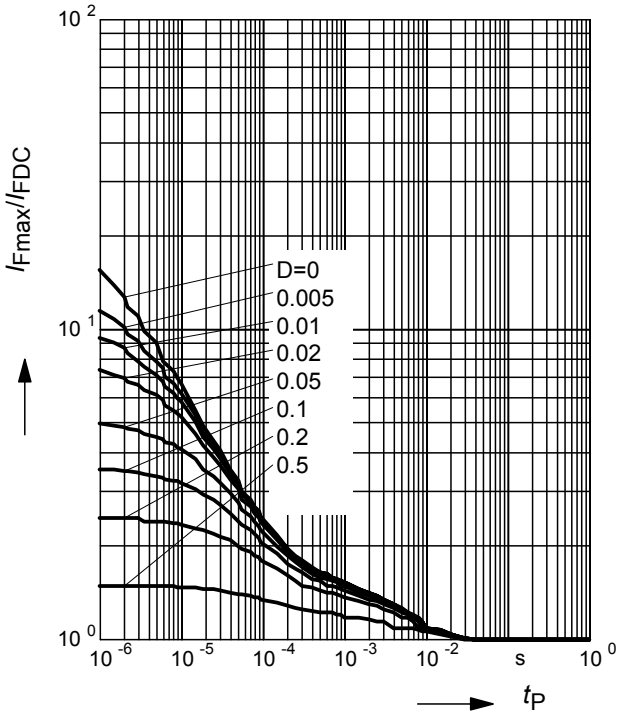
BAT64-02W, -02V



Permissible Pulse Load

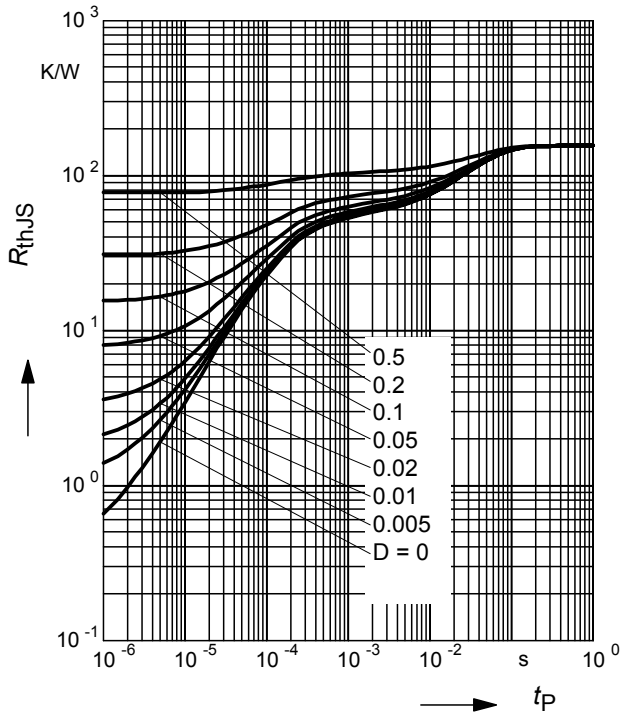
$I_{Fmax}/I_{FDC} = f(t_p)$

BAT64-02W, -02V



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

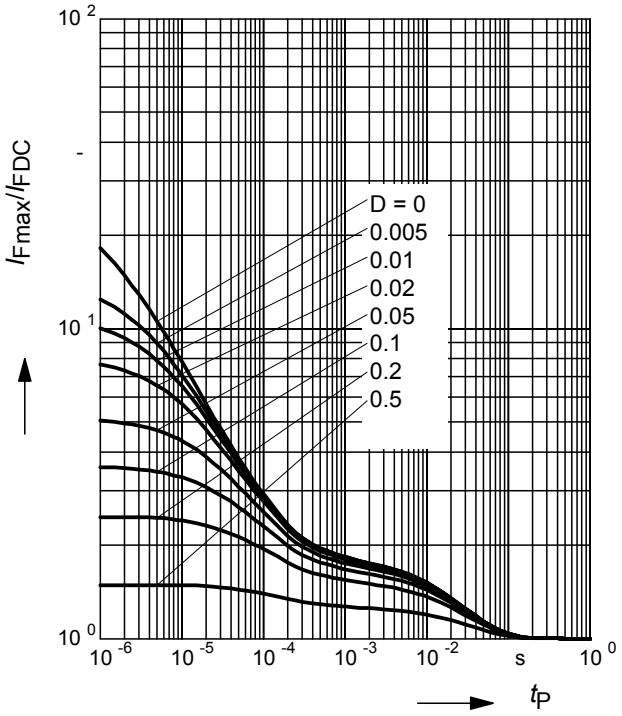
BAT64-04W, BAT64-06W



Permissible Pulse Load

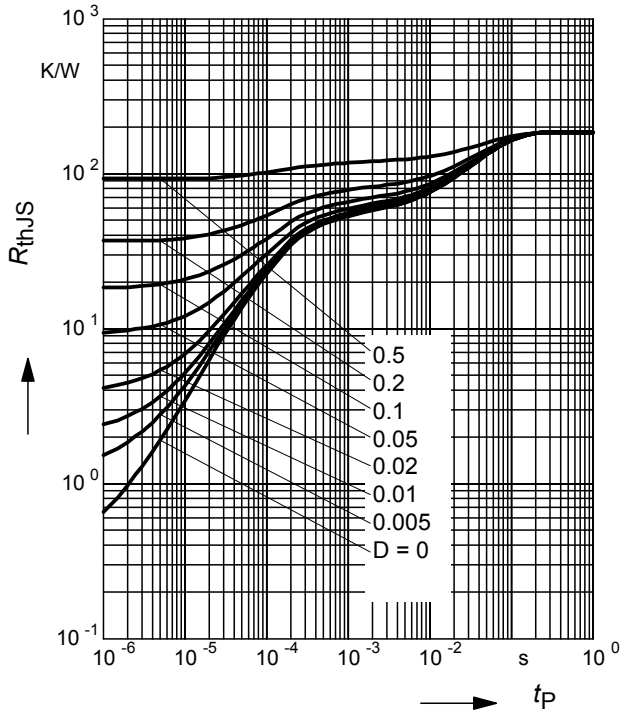
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAT64-04W, BAT64-06W



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

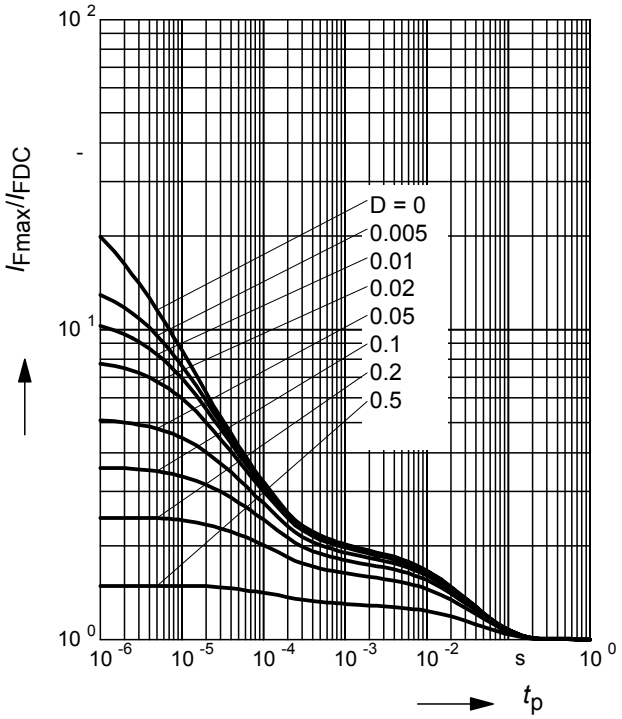
BAT64-05W



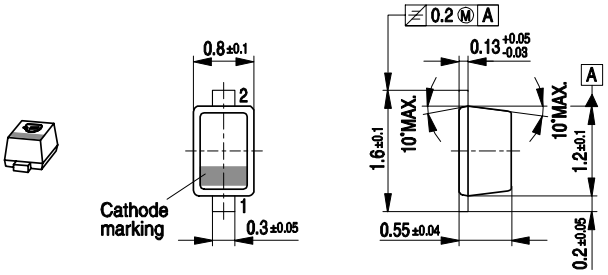
Permissible Pulse Load

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

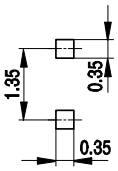
BAT64-05W



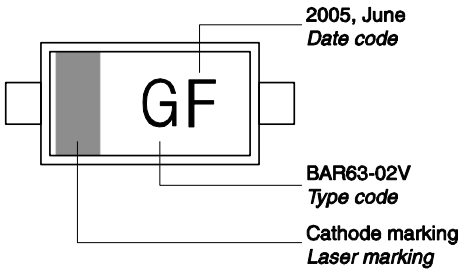
Package Outline



Foot Print

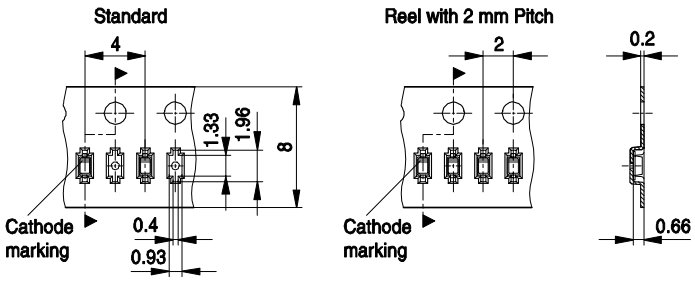


Marking Layout (Example)

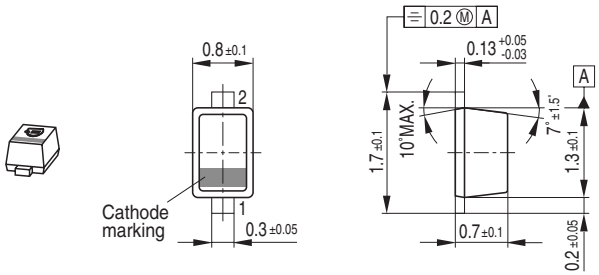


Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)
Reel ø330 mm = 10.000 Pieces/Reel



Package Outline



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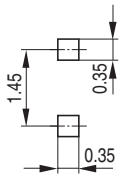
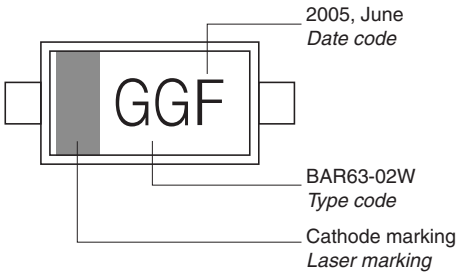


Marking Layout (Example)



Standard Packing

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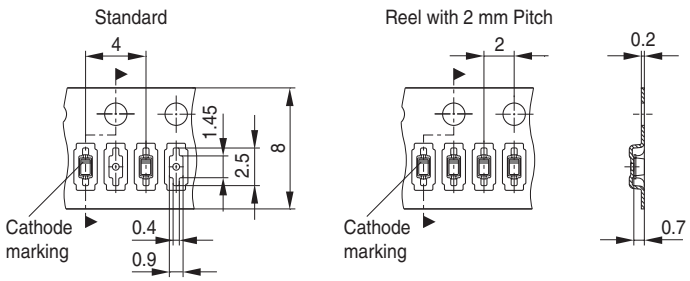
Reel ø330 mm = 10.000 Pieces/Reel

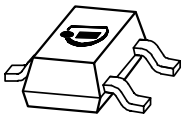


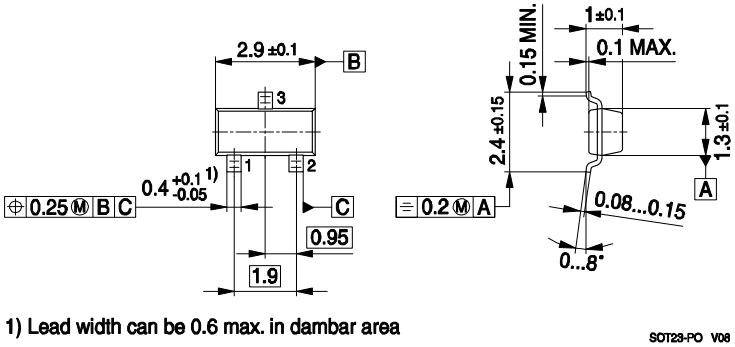
Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1]) CES-Code

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.

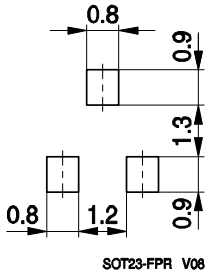
Package Outline



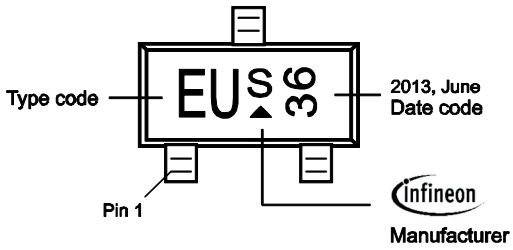


1) Lead width can be 0.6 max. in dambar area

Foot Print

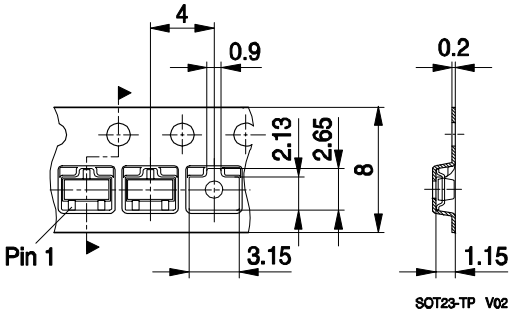


Marking Layout

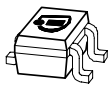


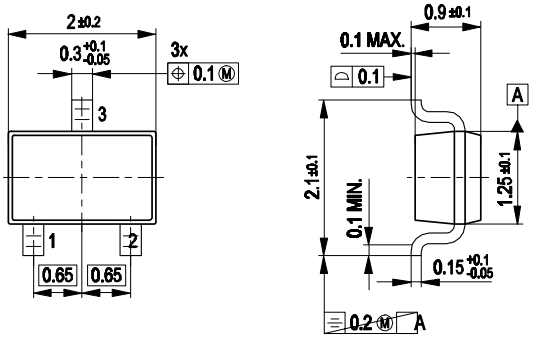
Standard Packing

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

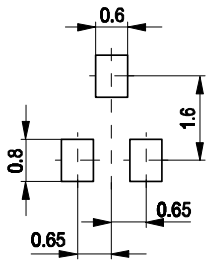


Package Outline

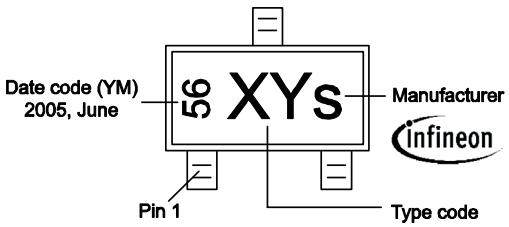




Foot Print

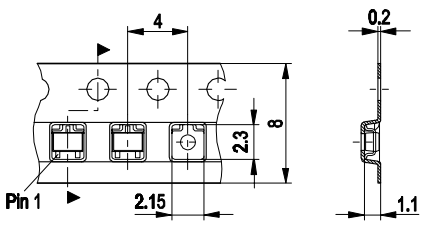


Marking Layout (Example)



Standard Packing

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



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