



**THE DATASHEET OF  
BAT54-02LRH E6327**

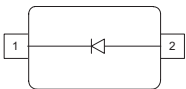


**Silicon Schottky Diodes**

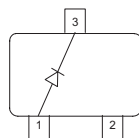
- For low-loss, fast-recovery, meter protection, bias isolation and clamping application
- Guard ring protected
- Low forward voltage
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101<sup>1)</sup>



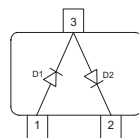
**BAT54-02LRH**  
**BAT54-02V**  
**BAT54-03W**



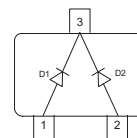
**BAT54**  
**BAT54W**



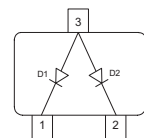
**BAT54-04**  
**BAT54-04W**



**BAT54-05**  
**BAT54-05W**



**BAT54-06**  
**BAT54-06W**



Type	Package	Configuration	$L_S$ (nH)	Marking
BAT54	SOT23	single	1.8	T
BAT54-02LRH*	TSLP-2-7	single	0.4	54
BAT54-02V	SC79	single	0.6	b
BAT54-03W	SOD323	single	1.8	blue 5
BAT54-04	SOT23	series	1.8	TS
BAT54-04W	SOT323	series	1.4	TS
BAT54-05	SOT23	common cathode	1.8	TC
BAT54-05W	SOT323	common cathode	1.4	TC
BAT54-06	SOT23	common anode	1.8	TA
BAT54-06W	SOT323	common anode	1.4	TA
BAT54W	SOT323	single	1.4	T5

<sup>1)</sup>BAT54-02LRH is not qualified according AEC Q101

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	30	V
Forward current	$I_F$	200	mA
Non-repetitive peak surge forward current ( $t \leq 10$ ms)	$I_{FSM}$	600	
Repetitive peak forward current <sup>1)</sup> $t_p \leq 1$ s, $\delta = 0.5$	$I_{FRM}$	300	mA
Total power dissipation BAT54, $T_S \leq 94$ °C BAT54-02LRH, $T_S \leq 135$ °C BAT54-02V, $T_S \leq 126$ °C BAT54-03W, $T_S \leq 122$ °C BAT54-04, $T_S \leq 71$ °C BAT54-04W, $T_S \leq 117$ °C BAT54-05, $T_S \leq 48$ °C BAT54-05W, $T_S \leq 110$ °C BAT54-06, $T_S \leq 71$ °C BAT54-06W, $T_S \leq 117$ °C BAT54W, $T_S \leq 125$ °C	$P_{tot}$	230 230 230 230 230 230 230 230 230 230 230	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-65 ... 150	

<sup>1)</sup>Device mounted on epoxy PCB 40 x 40 x 1.5 mm / 6 cm<sup>2</sup> Cu

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$		
BAT54		≤ 245	
BAT54-02LRH		≤ 65	
BAT54-02V		≤ 105	
BAT54-03W		≤ 120	
BAT54-04		≤ 345	
BAT54-04W		≤ 145	
BAT54-05		≤ 445	
BAT54-05W		≤ 175	
BAT54-06		≤ 345	
BAT54-06W		≤ 145	
BAT54W		≤ 110	

**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 <sup>2)</sup> $I_{(BR)} = 10 \mu\text{A}$	$V_{(BR)}$	30	-	-	V
Reverse current <sup>2)</sup> $V_R = 25 \text{ V}$	$I_R$	-	-	2	$\mu\text{A}$
Forward voltage <sup>2)</sup> $I_F = 0.1 \text{ mA}$ $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 30 \text{ mA}$ $I_F = 100 \text{ mA}$	$V_F$	-	-	240 320 400 500 800	mV

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

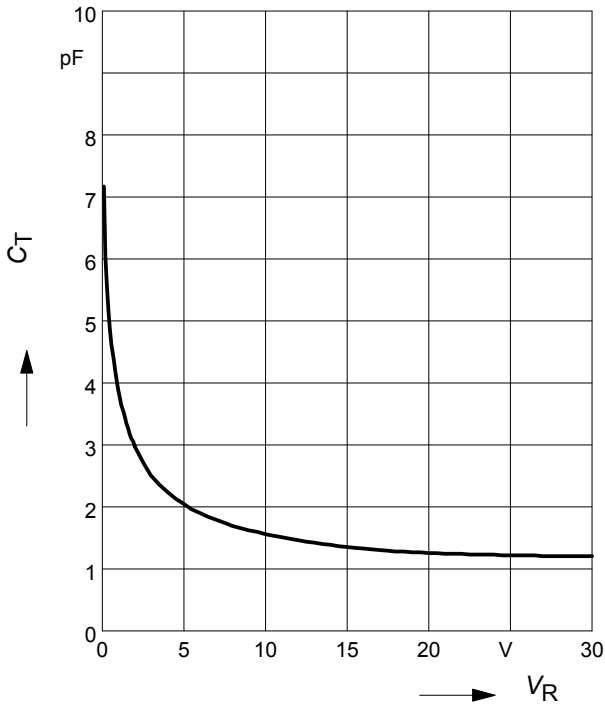
<sup>2)</sup>Pulsed test:  $t_p = 300 \mu\text{s}$ ;  $D = 0.01$

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>AC Characteristics</b>					
Diode capacitance $V_R = 1\text{ V}$ , $f = 1\text{ MHz}$	$C_T$	-	-	10	pF
Reverse recovery time $I_F = 10\text{ mA}$ , $I_R = 10\text{ mA}$ , measured $I_R = 1\text{ mA}$ , $R_L = 100\ \Omega$	$t_{rr}$	-	-	5	ns

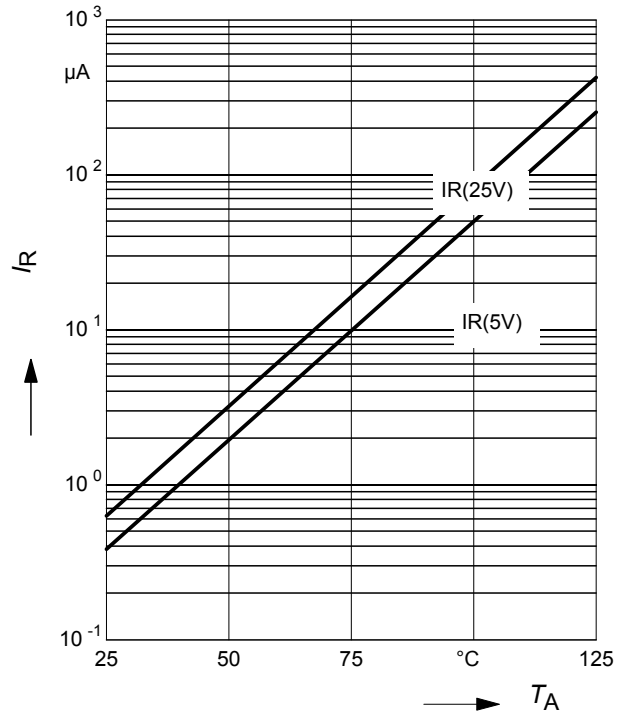
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



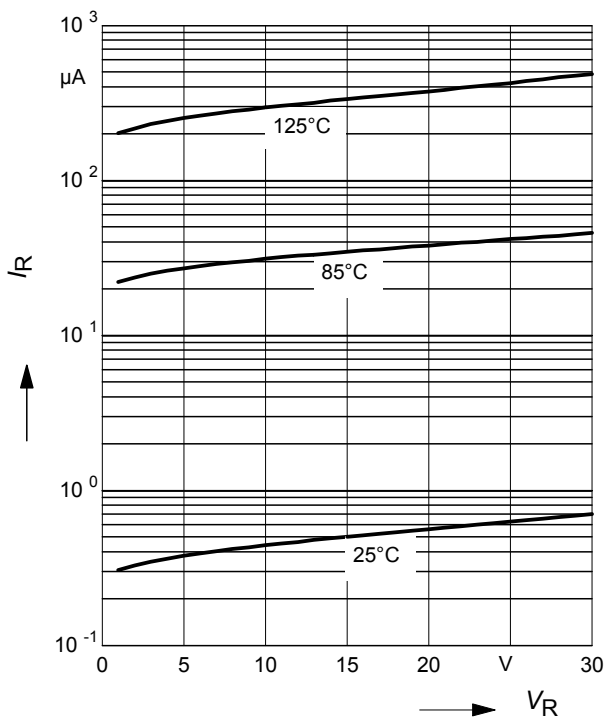
**Reverse current  $I_R = f(T_A)$**

$V_R = \text{Parameter}$



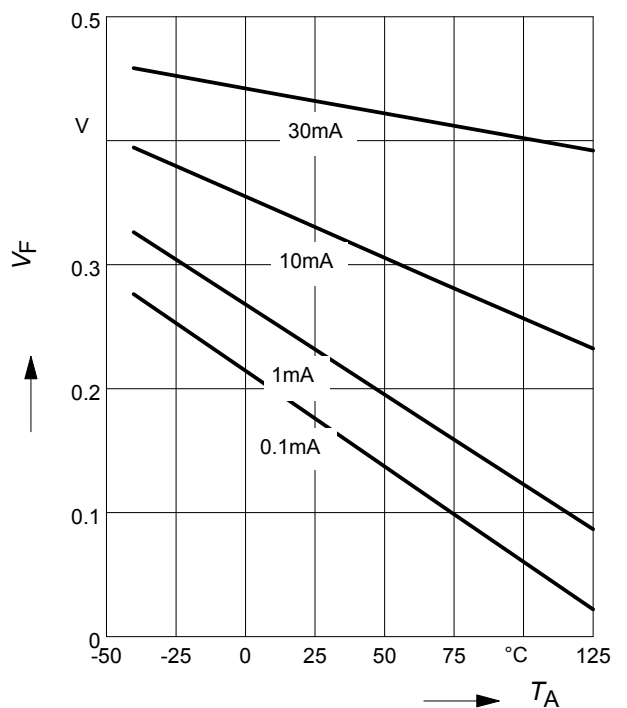
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



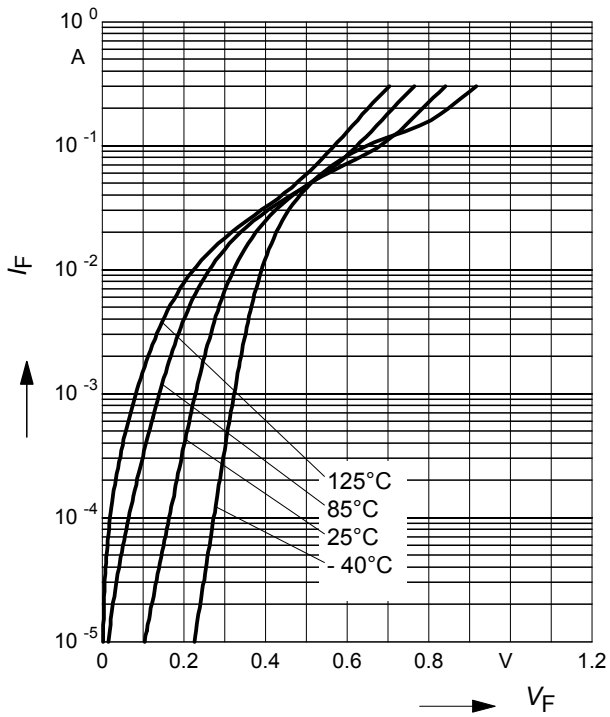
**Forward Voltage  $V_F = f(T_A)$**

$I_F = \text{Parameter}$



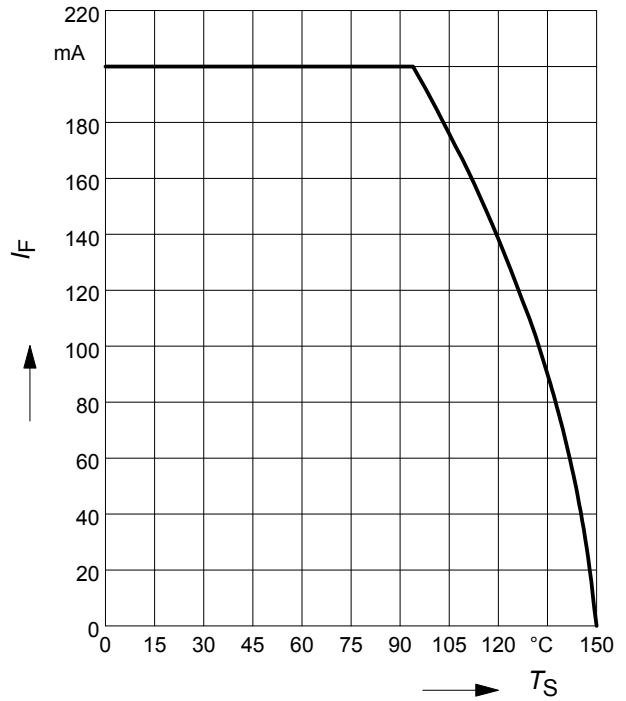
**Forward current  $I_F = f(V_F)$**

$T_A$  = Parameter



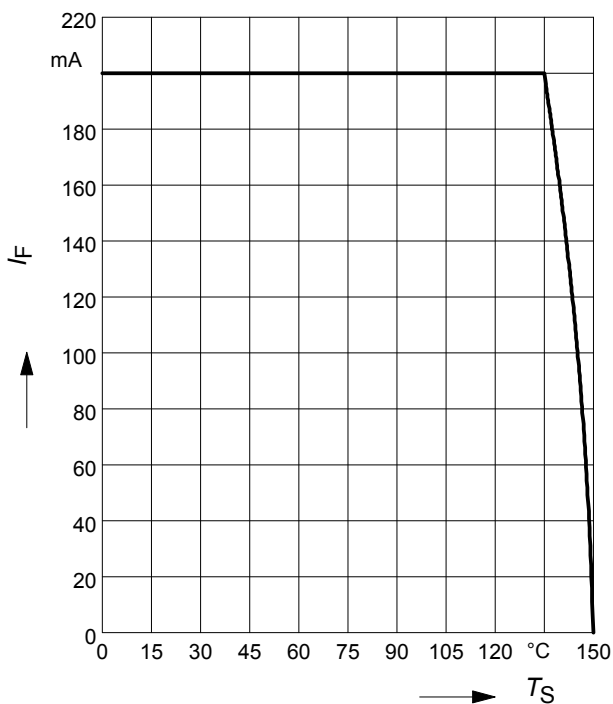
**Forward current  $I_F = f(T_S)$**

BAT54



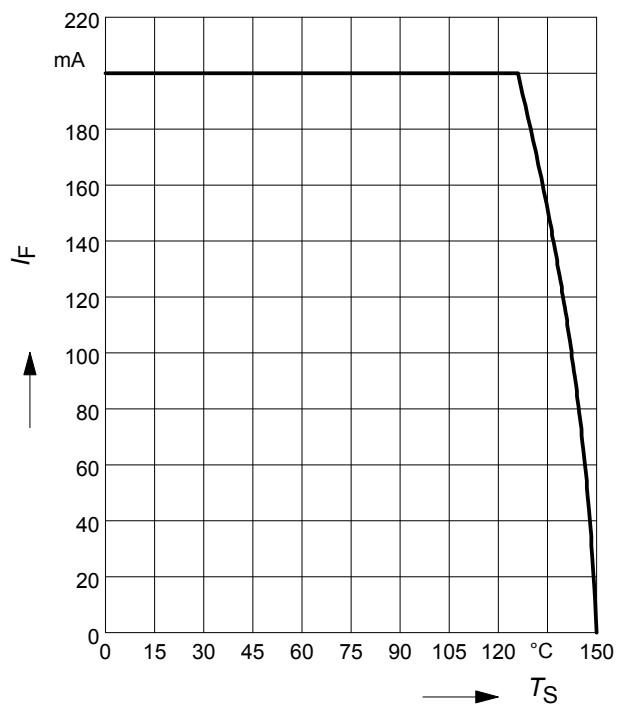
**Forward current  $I_F = f(T_S)$**

BAT54-02LRH



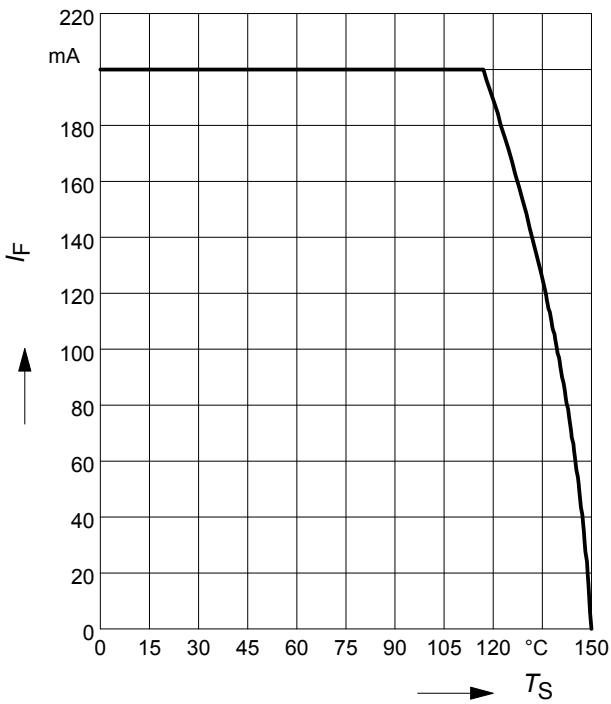
**Forward current  $I_F = f(T_S)$**

BAT54-02V



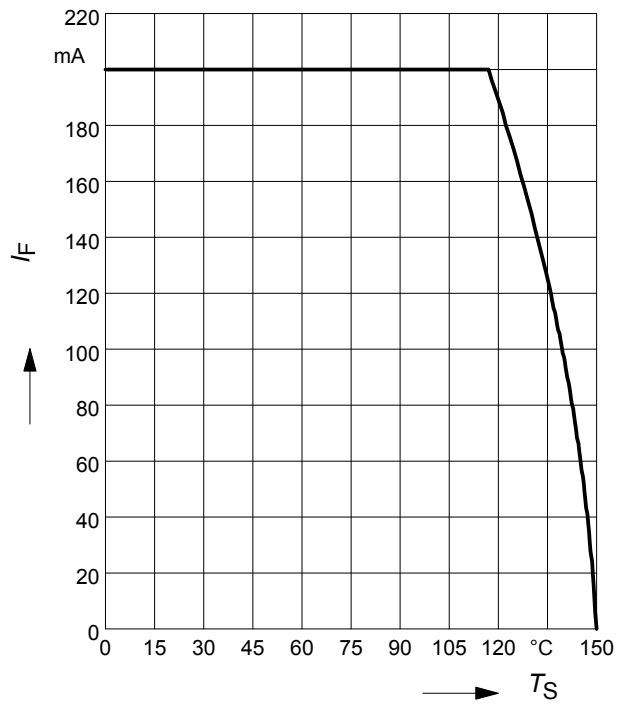
Forward current  $I_F = f(T_S)$

BAT54-04



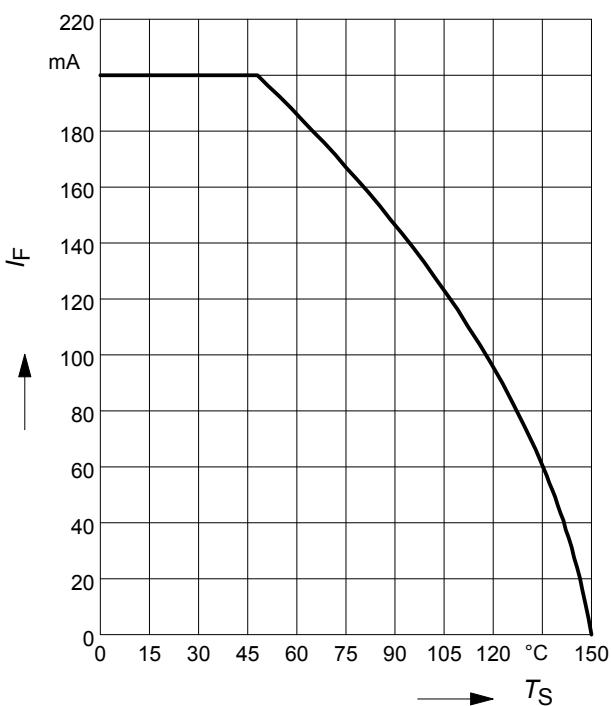
Forward current  $I_F = f(T_S)$

BAT54-04W



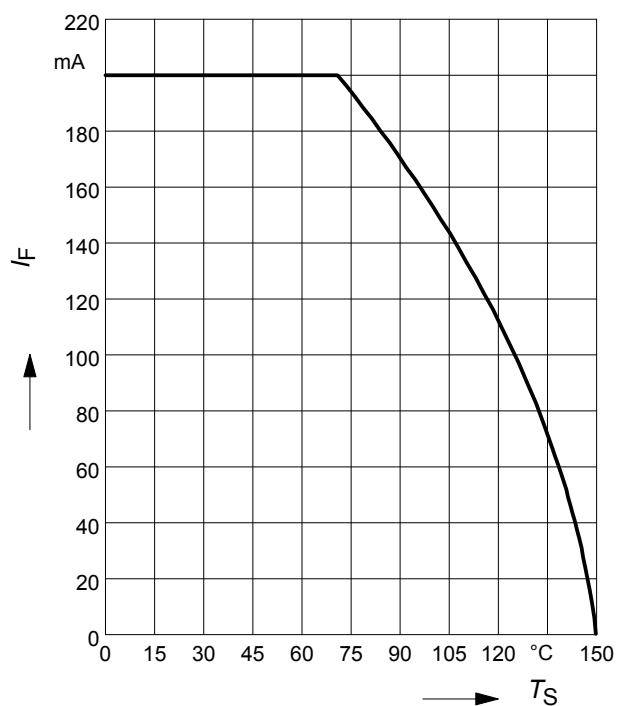
Forward current  $I_F = f(T_S)$

BAT54-05



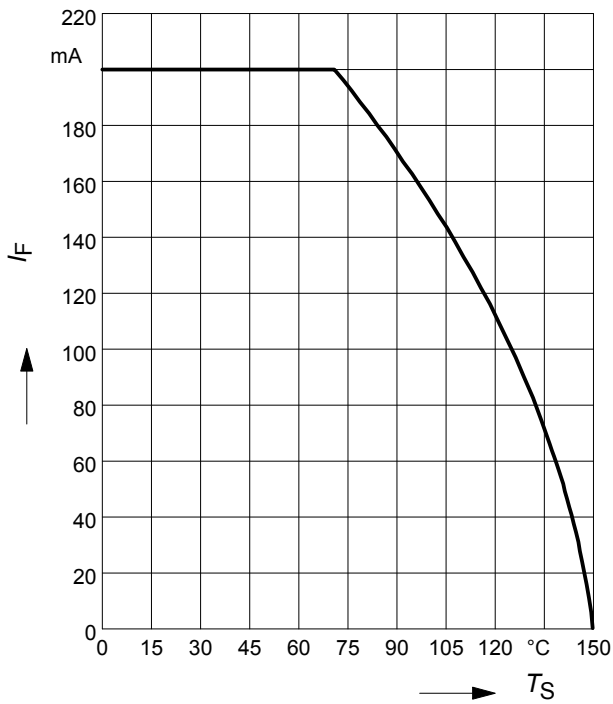
Forward current  $I_F = f(T_S)$

BAT54-05W



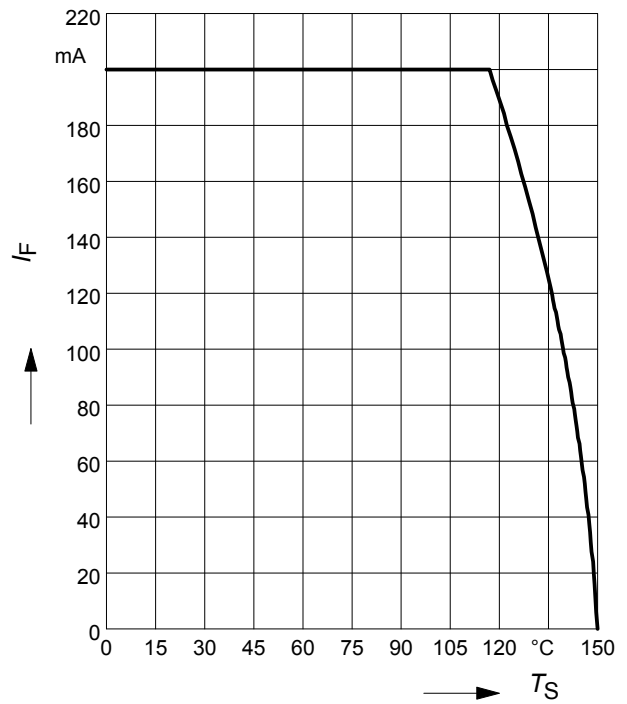
**Forward current  $I_F = f(T_S)$**

BAT54-06



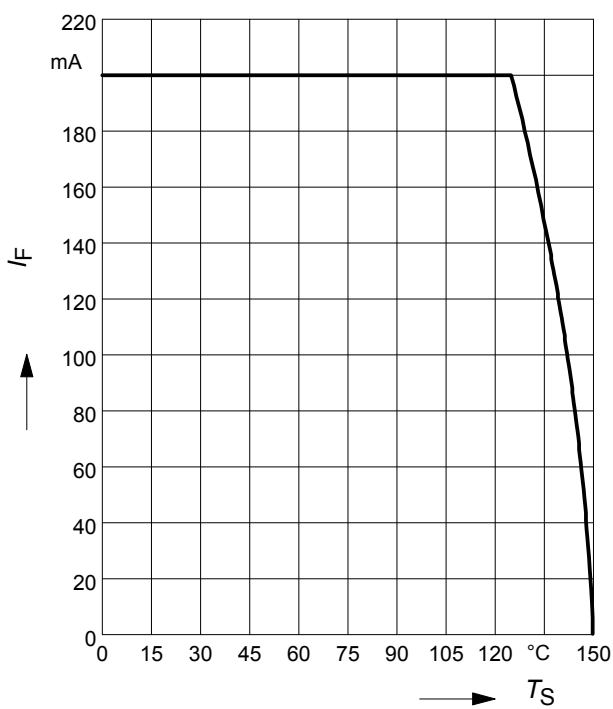
**Forward current  $I_F = f(T_S)$**

BAT54-06W



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

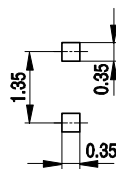
BAT54W



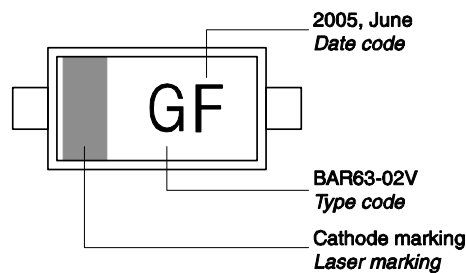
### Package Outline



### Foot Print

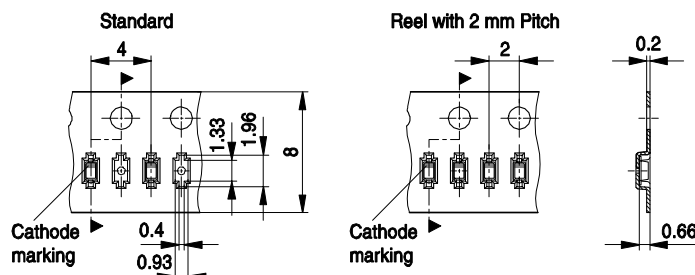


### Marking Layout (Example)



### 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

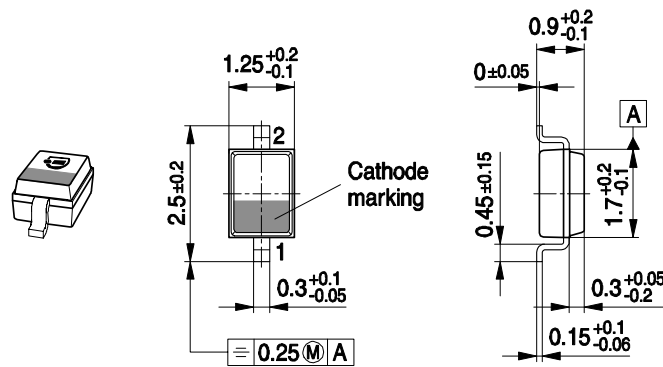


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

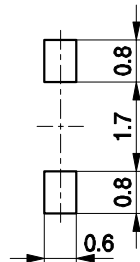
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

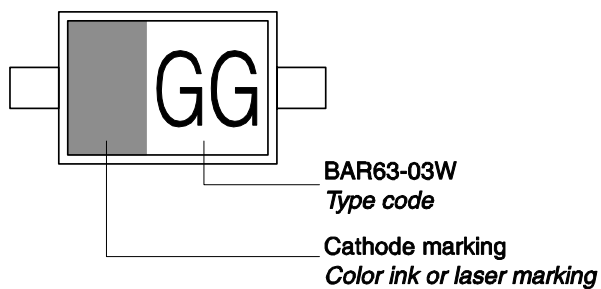
Package Outline



Foot Print

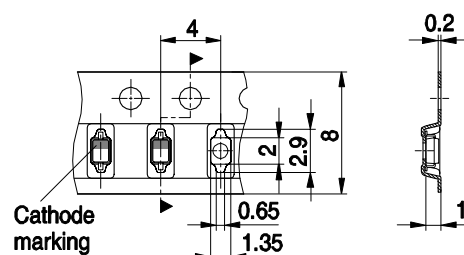


Marking Layout (Example)

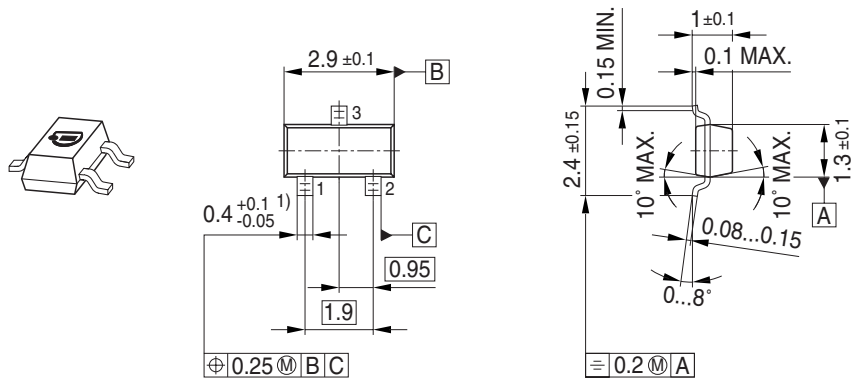


Standard Packing

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

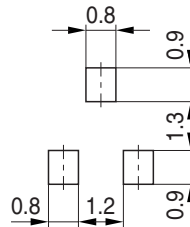


Package Outline

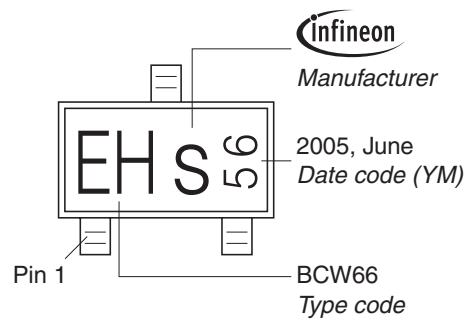


1) Lead width can be 0.6 max. in dambar area

Foot Print

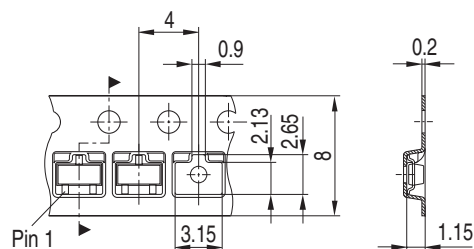


Marking Layout (Example)

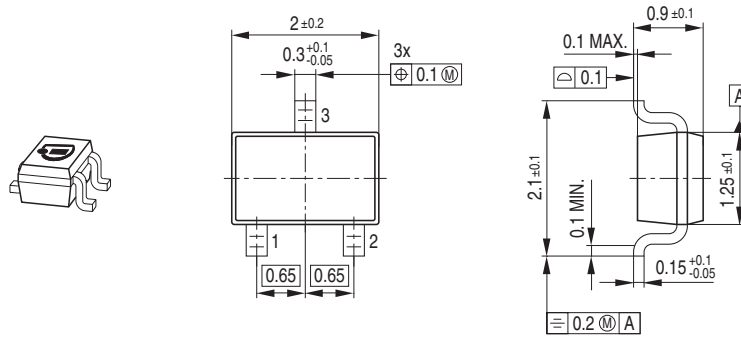


Standard Packing

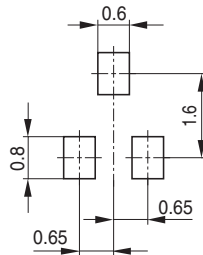
Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



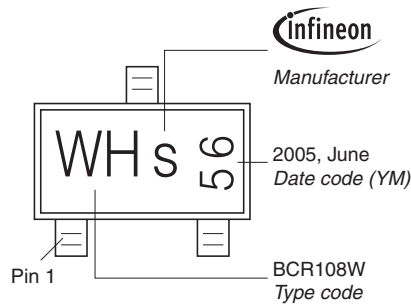
Package Outline



Foot Print

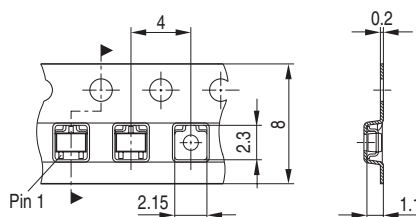


Marking Layout (Example)

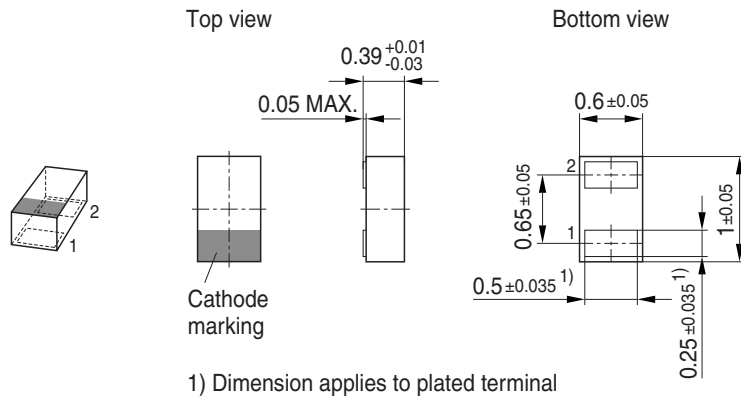


Standard Packing

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

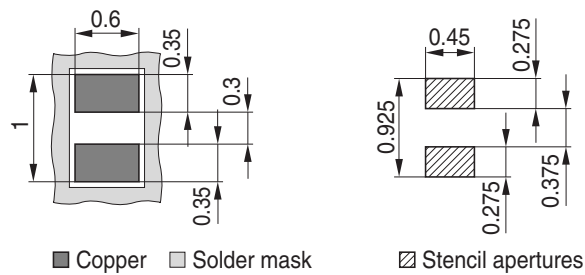


### Package Outline

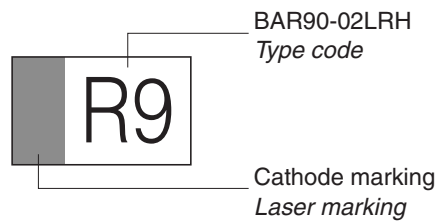


### Foot Print

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

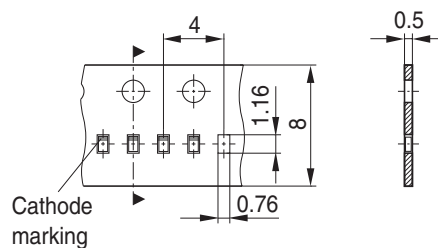


### Marking Layout (Example)



### Standard Packing

Reel  $\varnothing 180 \text{ mm}$  = 15.000 Pieces/Reel  
 Reel  $\varnothing 330 \text{ mm}$  = 50.000 Pieces/Reel (optional)



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