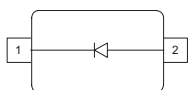


Silicon Schottky Diodes

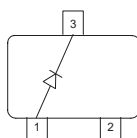
- For low-loss, fast-recovery, meter protection, bias isolation and clamping application
- Guard ring protected
- Low forward voltage
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101¹⁾



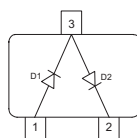
BAT54-02LRH
BAT54-02V
BAT54-03W



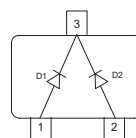
BAT54
BAT54W



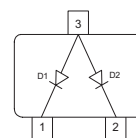
BAT54-04
BAT54-04W



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

¹⁾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 ¹⁾ $t_p \leq 1$ s, $\delta = 0.5$	I_{FRM}	300	mA
Total power dissipation	P_{tot}		mW
BAT54, $T_S \leq 94^\circ\text{C}$		230	
BAT54-02LRH, $T_S \leq 135^\circ\text{C}$		230	
BAT54-02V, $T_S \leq 126^\circ\text{C}$		230	
BAT54-03W, $T_S \leq 122^\circ\text{C}$		230	
BAT54-04, $T_S \leq 71^\circ\text{C}$		230	
BAT54-04W, $T_S \leq 117^\circ\text{C}$		230	
BAT54-05, $T_S \leq 48^\circ\text{C}$		230	
BAT54-05W, $T_S \leq 110^\circ\text{C}$		230	
BAT54-06, $T_S \leq 71^\circ\text{C}$		230	
BAT54-06W, $T_S \leq 117^\circ\text{C}$		230	
BAT54W, $T_S \leq 125^\circ\text{C}$		230	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

¹⁾Device mounted on epoxy PCB 40 x 40 x 1.5 mm / 6 cm² Cu

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	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.	
DC Characteristics					
Breakdown voltage ²⁾ <i>I</i> _(BR) = 10 μA	<i>V</i> _(BR)	30	-	-	V
Reverse current ²⁾ <i>V</i> _R = 25 V	<i>I</i> _R	-	-	2	μA
Forward voltage ²⁾ <i>I</i> _F = 0.1 mA <i>I</i> _F = 1 mA <i>I</i> _F = 10 mA <i>I</i> _F = 30 mA <i>I</i> _F = 100 mA	<i>V</i> _F	- - - - -	- - - - -	240 320 400 500 800	mV

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

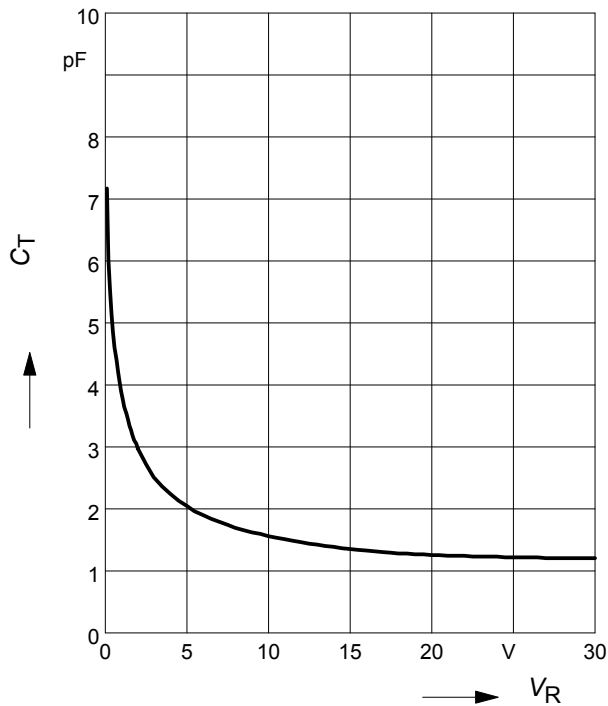
²⁾Pulsed test: $t_p = 300 \mu\text{s}$; $D = 0.01$

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
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 $I_R = 1\text{ mA}$, $R_L = 100\text{ }\Omega$	t_{rr}	-	-	5	ns

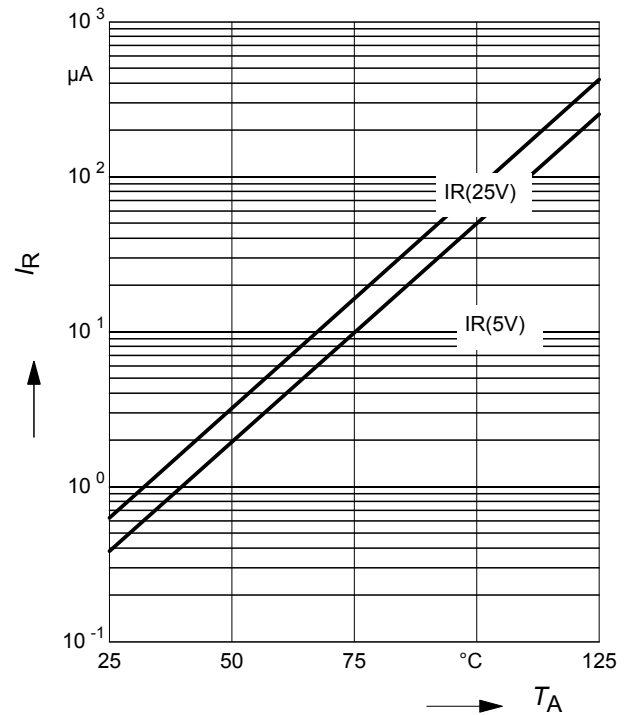
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



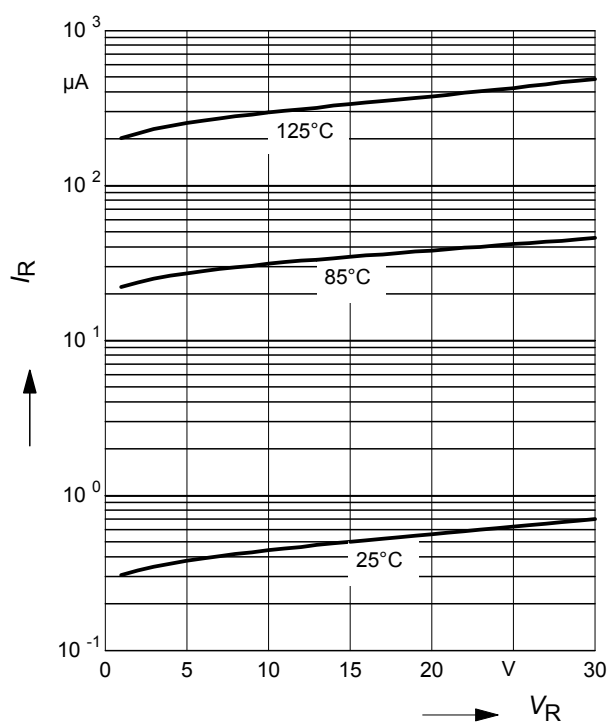
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



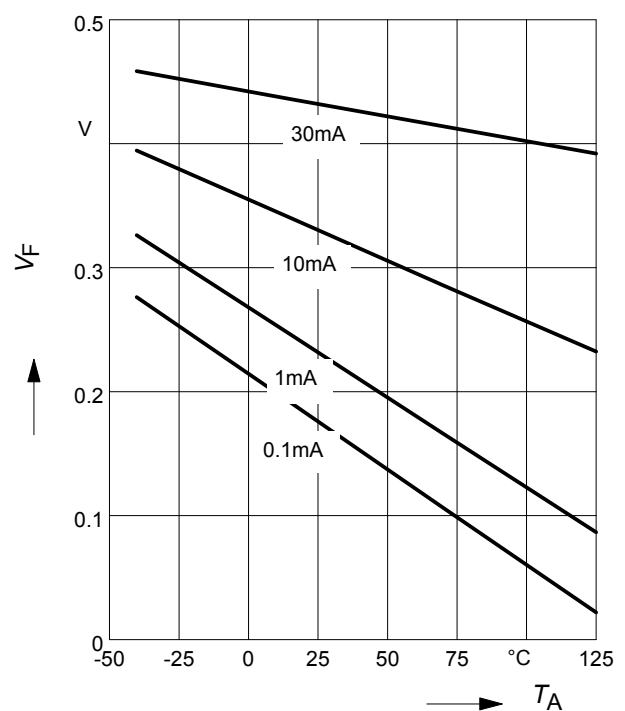
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



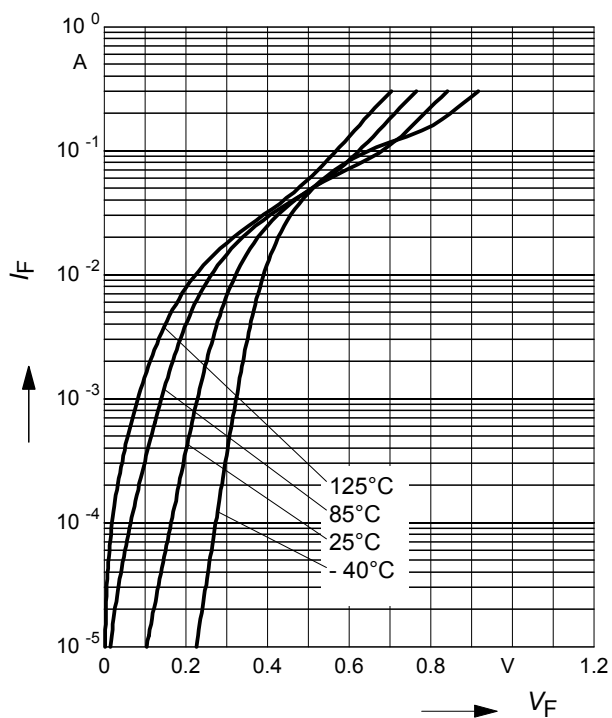
Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



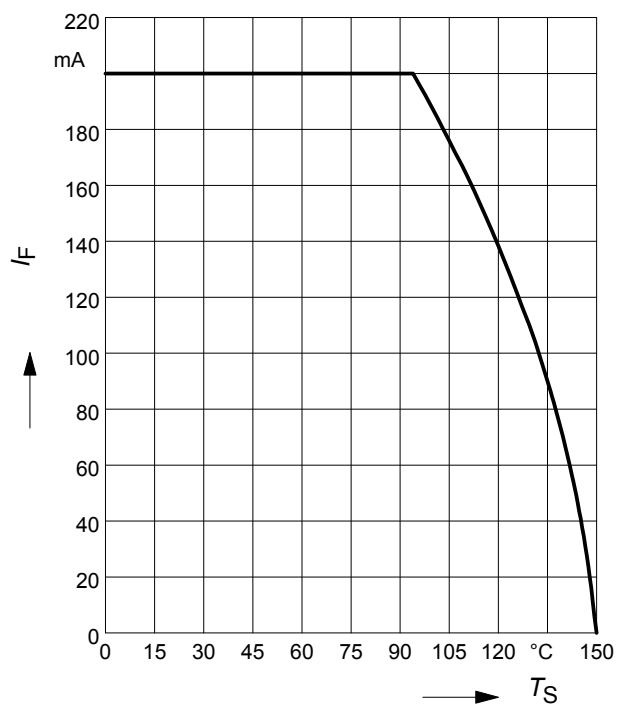
Forward current $I_F = f(V_F)$

T_A = Parameter



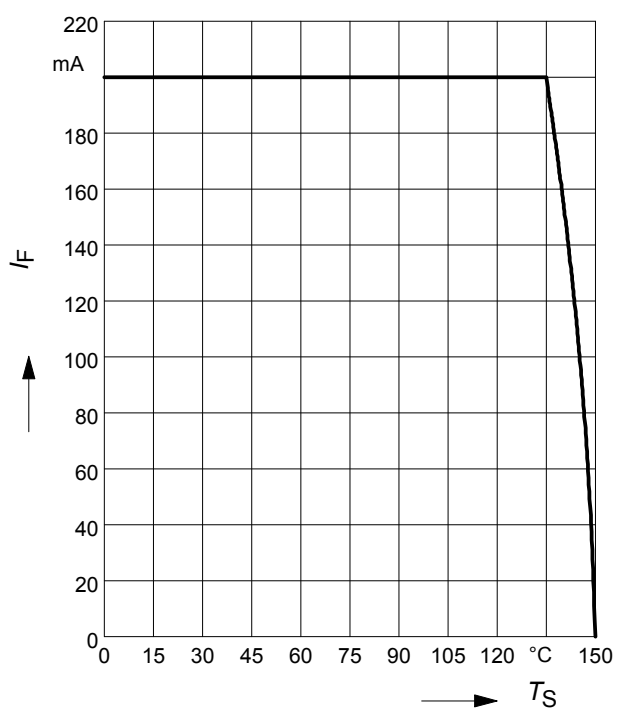
Forward current $I_F = f(T_S)$

BAT54



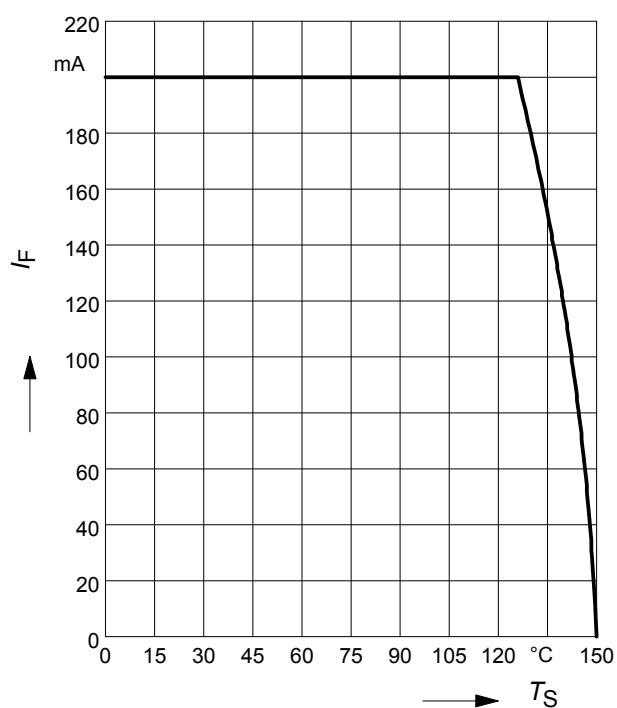
Forward current $I_F = f(T_S)$

BAT54-02LRH



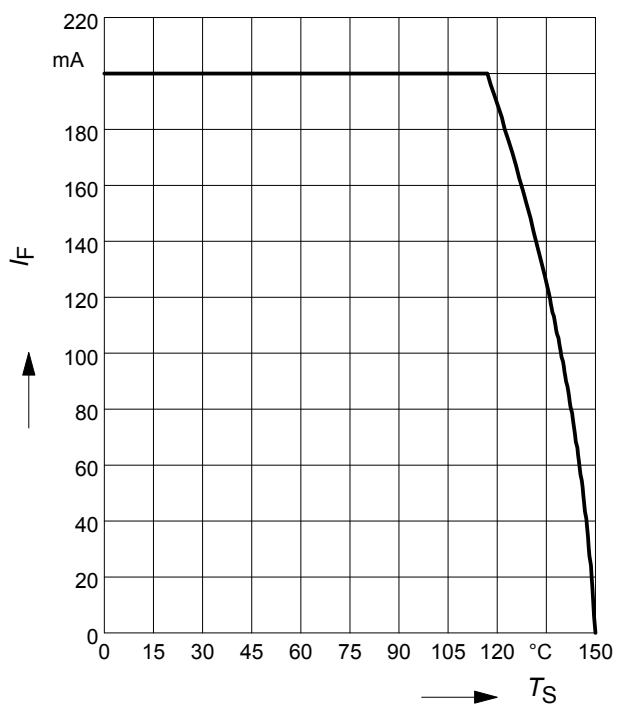
Forward current $I_F = f(T_S)$

BAT54-02V



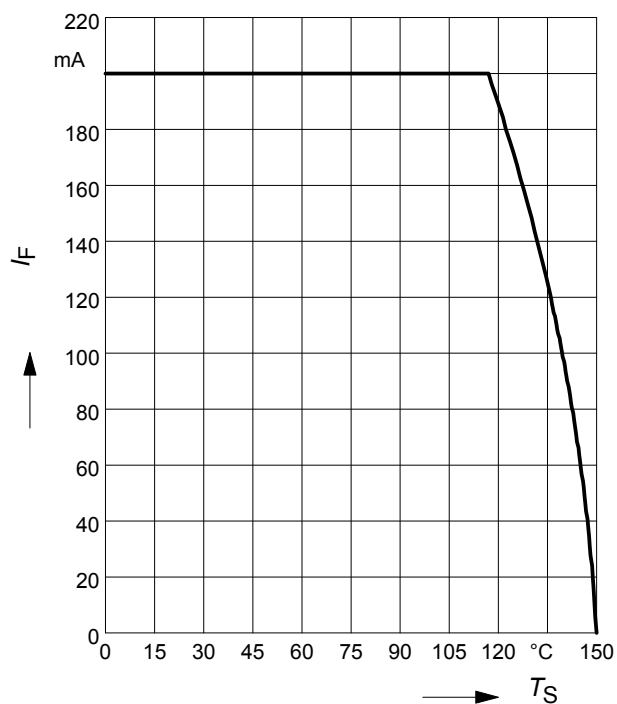
Forward current $I_F = f(T_S)$

BAT54-04



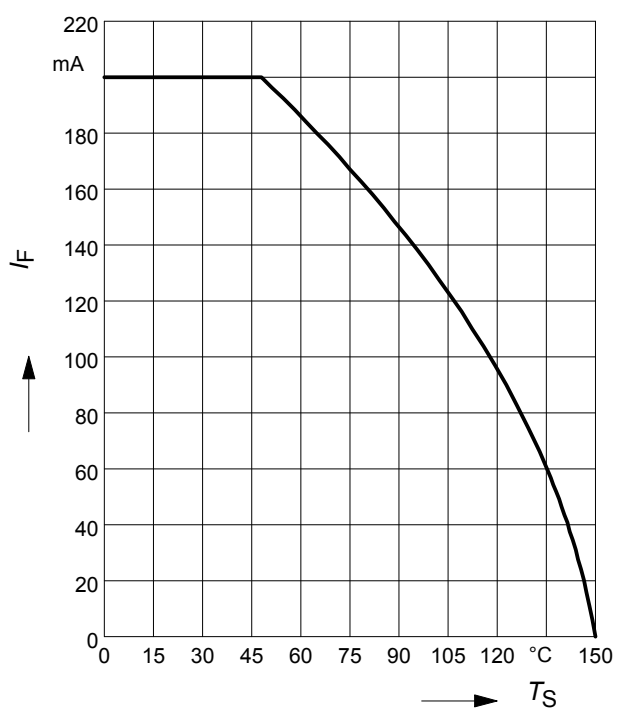
Forward current $I_F = f(T_S)$

BAT54-04W



Forward current $I_F = f(T_S)$

BAT54-05



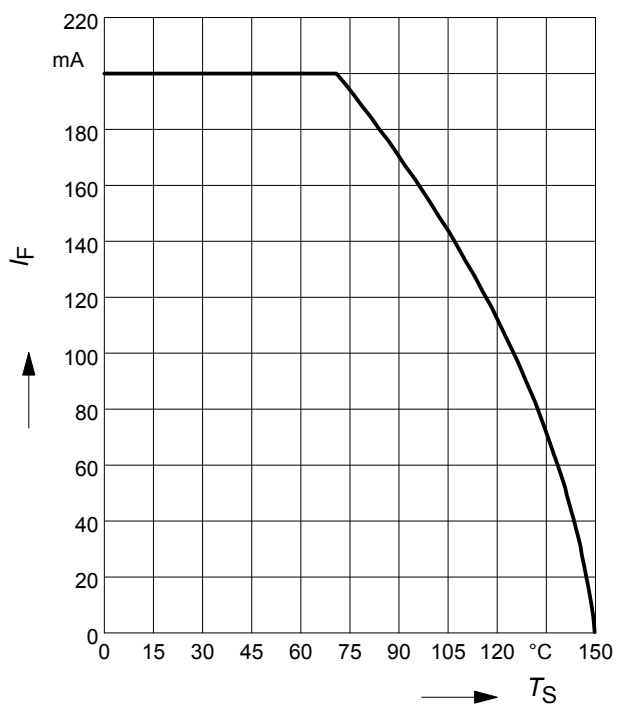
Forward current $I_F = f(T_S)$

BAT54-05W



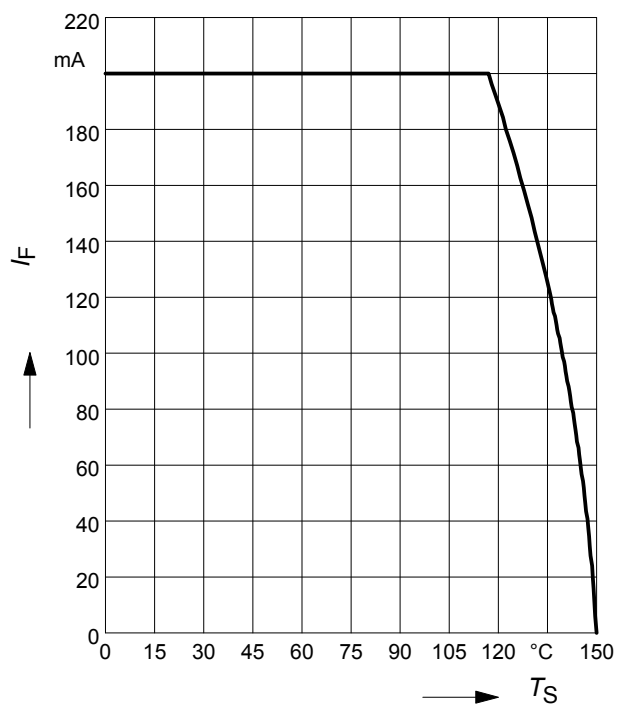
Forward current $I_F = f(T_S)$

BAT54-06



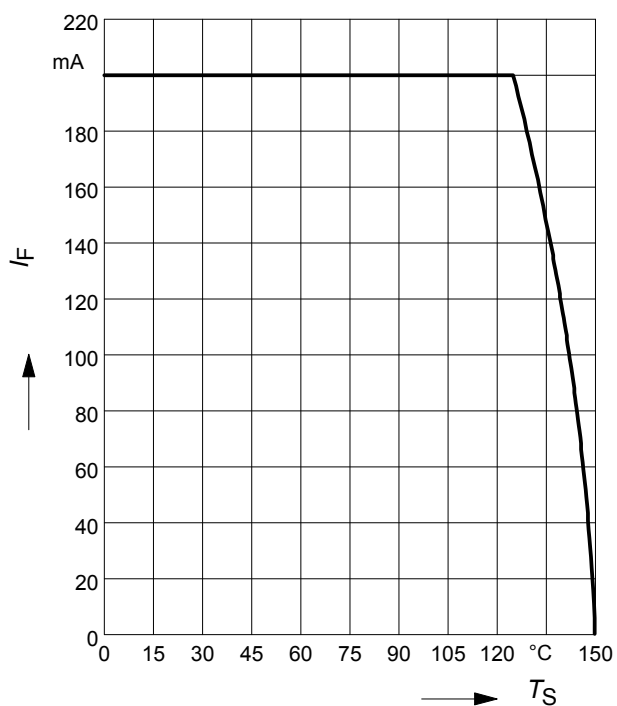
Forward current $I_F = f(T_S)$

BAT54-06W



Forward current $I_F = f(T_S)$

BAT54W



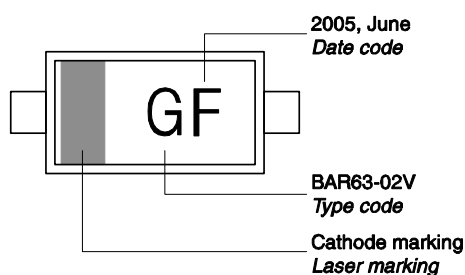
Package Outline



Foot Print

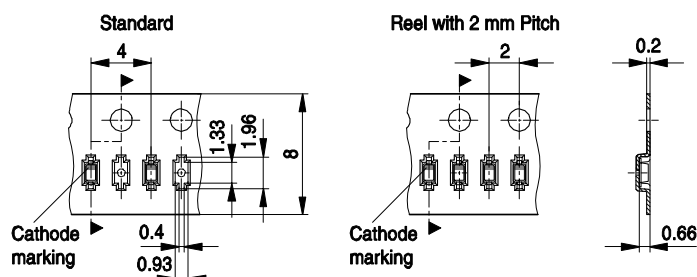


Marking Layout (Example)



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

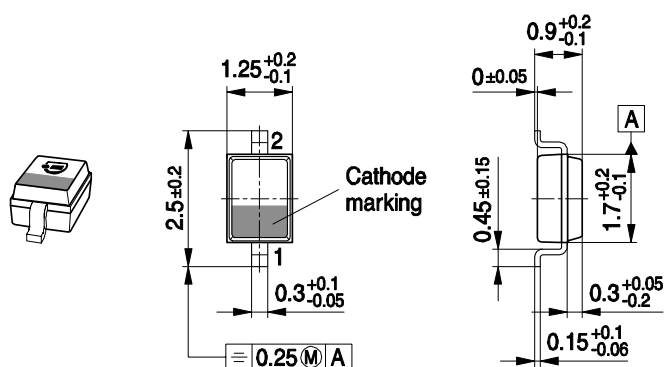


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75¹⁾) CES-Code

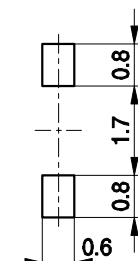
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

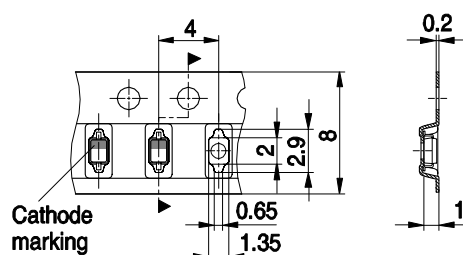


Marking Layout (Example)



Standard Packing

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

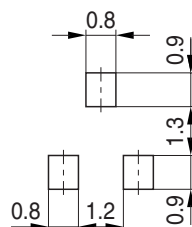


Package Outline

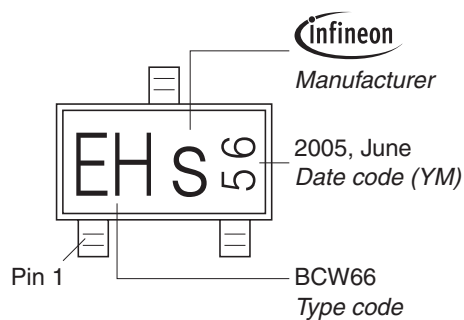


1) Lead width can be 0.6 max. in dambar area

Foot Print



Marking Layout (Example)

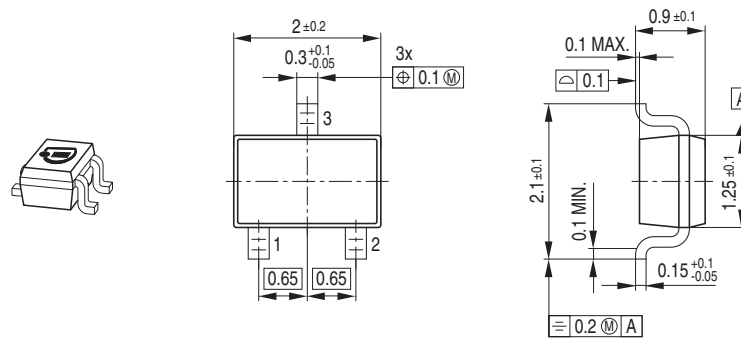


Standard Packing

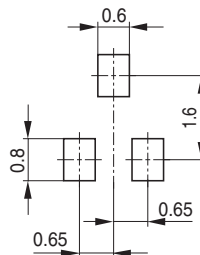
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



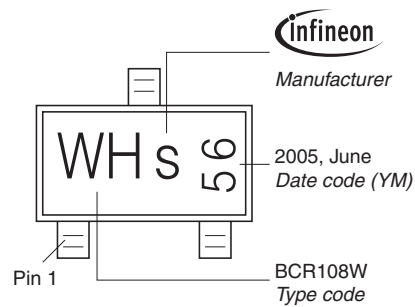
Package Outline



Foot Print

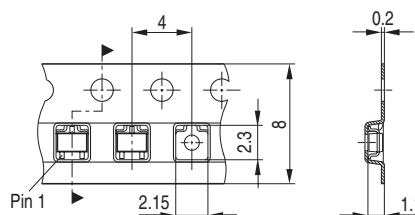


Marking Layout (Example)

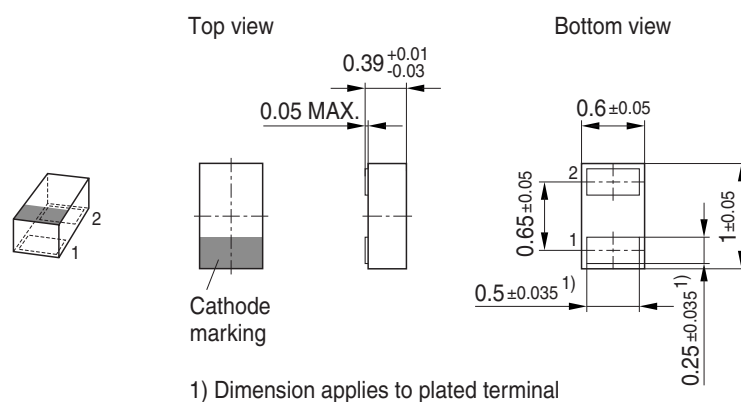


Standard Packing

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

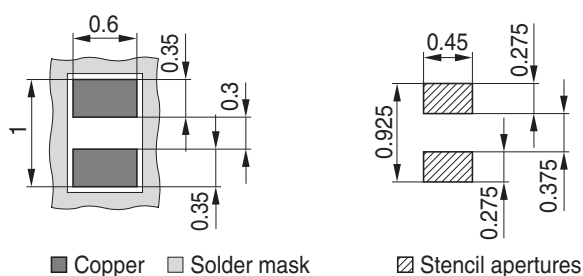


Package Outline

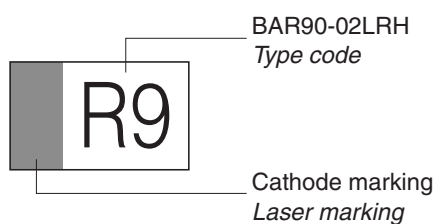


Foot Print

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

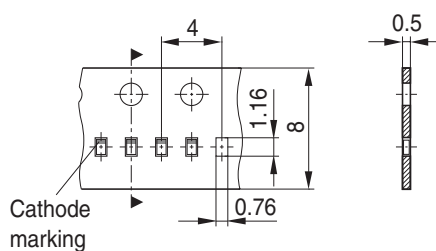


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel
Reel ø330 mm = 50.000 Pieces/Reel (optional)



Edition 2009-11-16

**Published by
Infineon Technologies AG
81726 Munich, Germany**

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