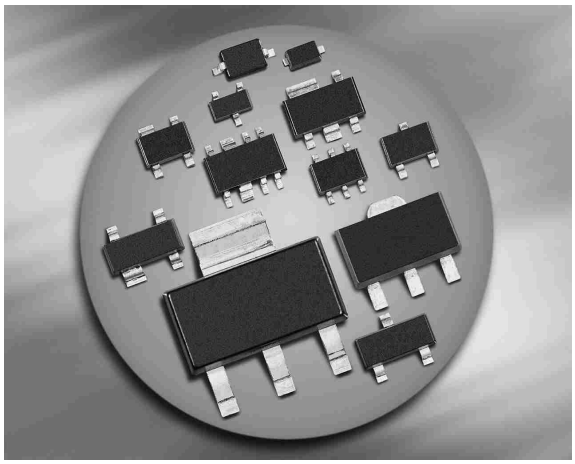
THE DATASHEET OF

BAT5406E6327HTSA1

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[1)]



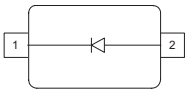
BAT54-02LRH
BAT54-02V
BAT54-03W

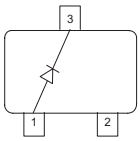
BAT54
BAT54W

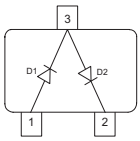
BAT54-04
BAT54-04W

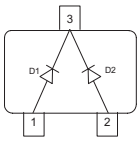
BAT54-05
BAT54-05W

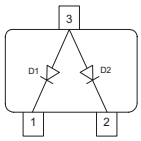
BAT54-06
BAT54-06W











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°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, $T_S \leq 94$ °C		230	
BAT54-02LRH, $T_S \leq 135$ °C		230	
BAT54-02V, $T_S \leq 126$ °C		230	
BAT54-03W, $T_S \leq 122$ °C		230	
BAT54-04, $T_S \leq 71$ °C		230	
BAT54-04W, $T_S \leq 117$ °C		230	
BAT54-05, $T_S \leq 48$ °C		230	
BAT54-05W, $T_S \leq 110$ °C		230	
BAT54-06, $T_S \leq 71$ °C		230	
BAT54-06W, $T_S \leq 117$ °C		230	
BAT54W, $T_S \leq 125$ °C		230	
Junction temperature	T_j	150	°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°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage[2)] $I_{(BR)}$ = 10 µA	$V_{(BR)}$	30	-	-	V
Reverse current[2)] V_R = 25 V	I_R	-	-	2	µA
Forward voltage[2)]	V_F				mV
I_F = 0.1 mA		-	-	240	
I_F = 1 mA		-	-	320	
I_F = 10 mA		-	-	400	
I_F = 30 mA		-	-	500	
I_F = 100 mA		-	-	800	

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

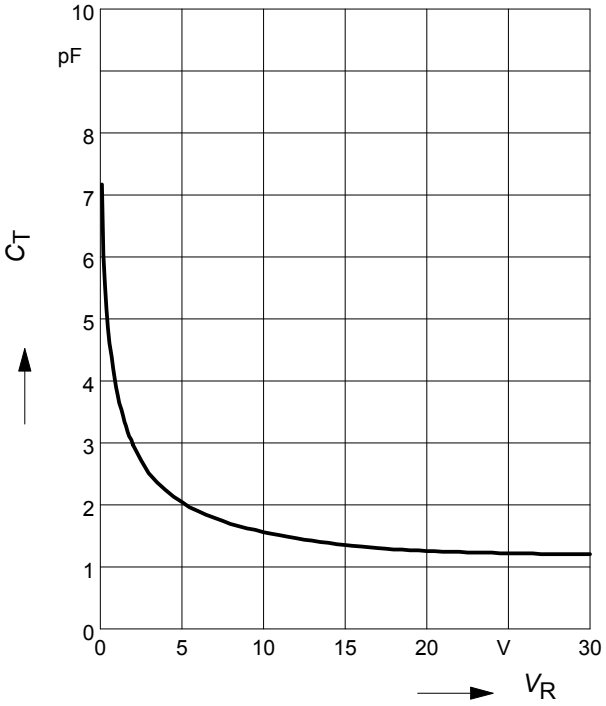
[2]Pulsed test: t_p = 300 µs; D = 0.01

Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance V_R = 1 V, f = 1 MHz	C_T	-	-	10	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

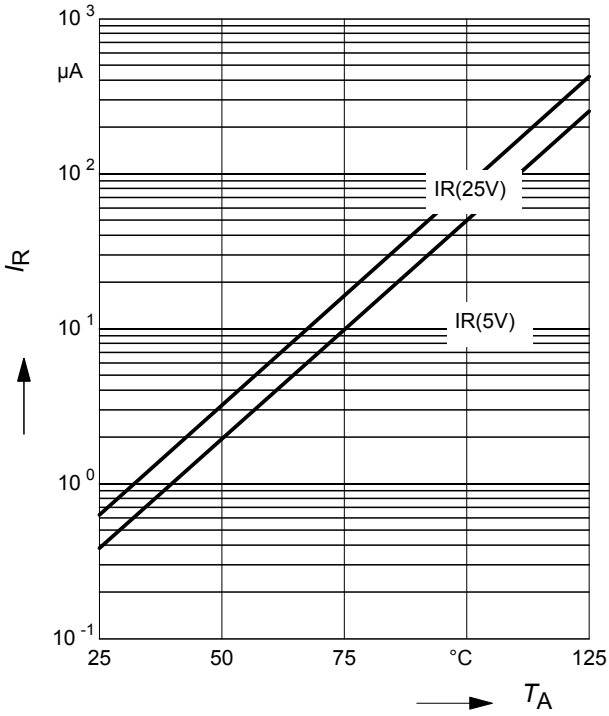
Diode capacitance $C_T = f(V_R)$

f = 1MHz



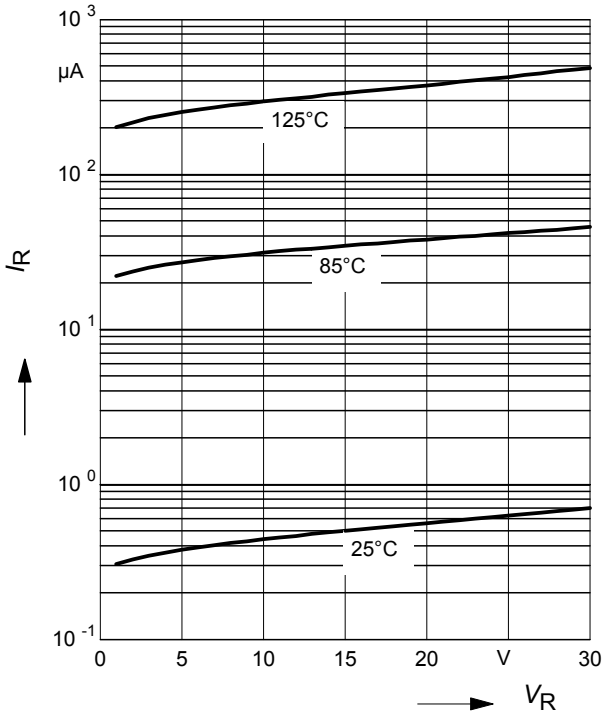
Reverse current $I_R = f(T_A)$

V_R = Parameter



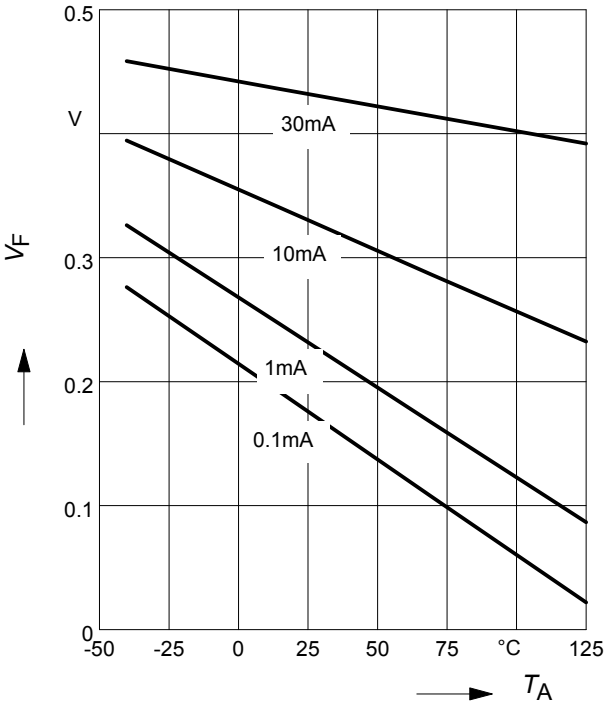
Reverse current $I_R = f(V_R)$

T_A = Parameter



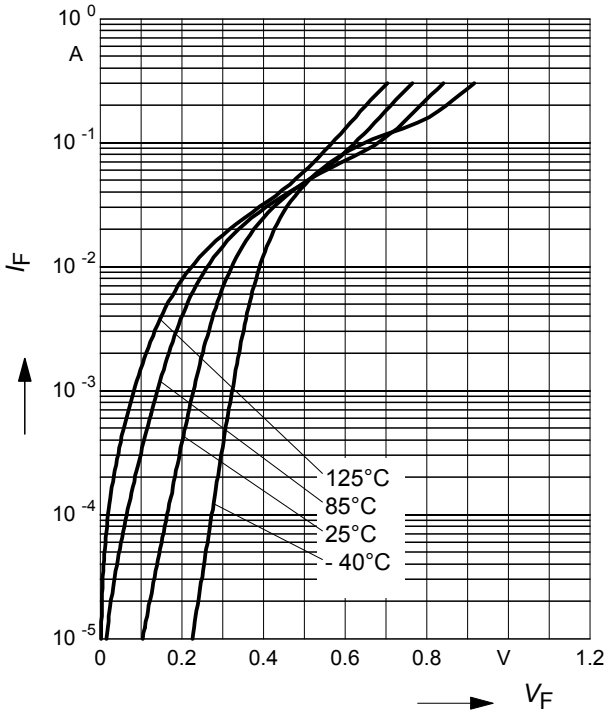
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



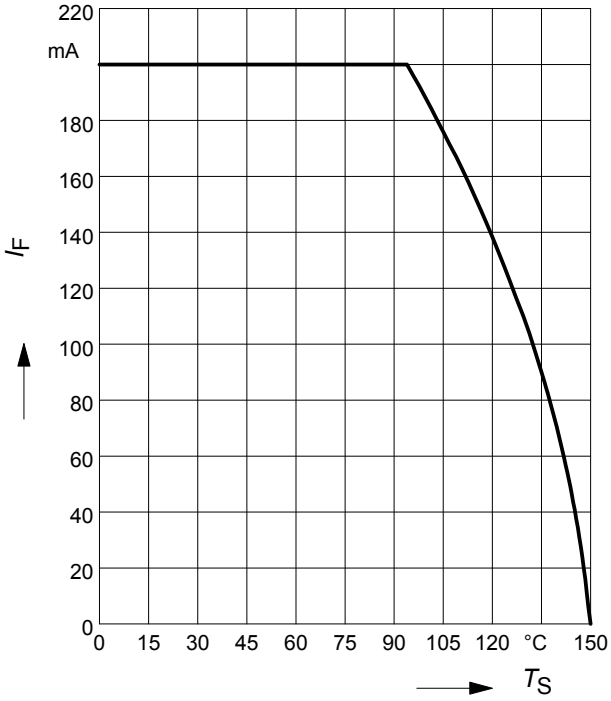
Forward current $I_F = f(V_F)$

T_A = Parameter



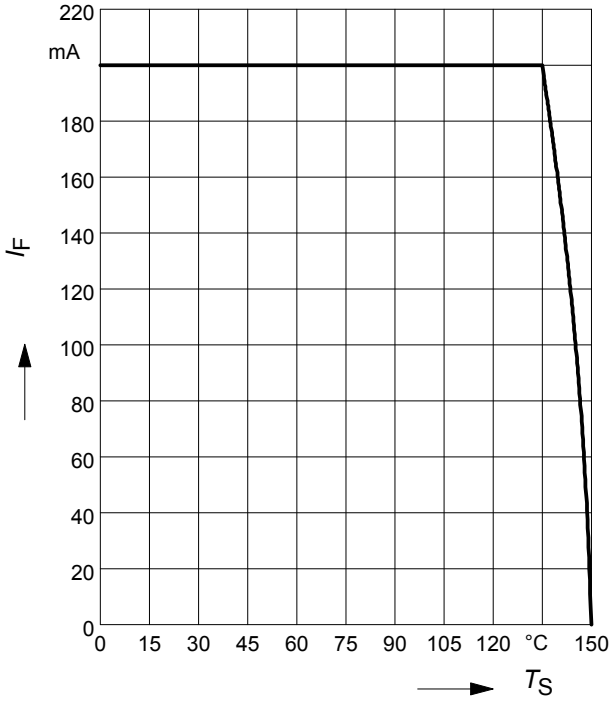
Forward current $I_F = f(T_S)$

BAT54



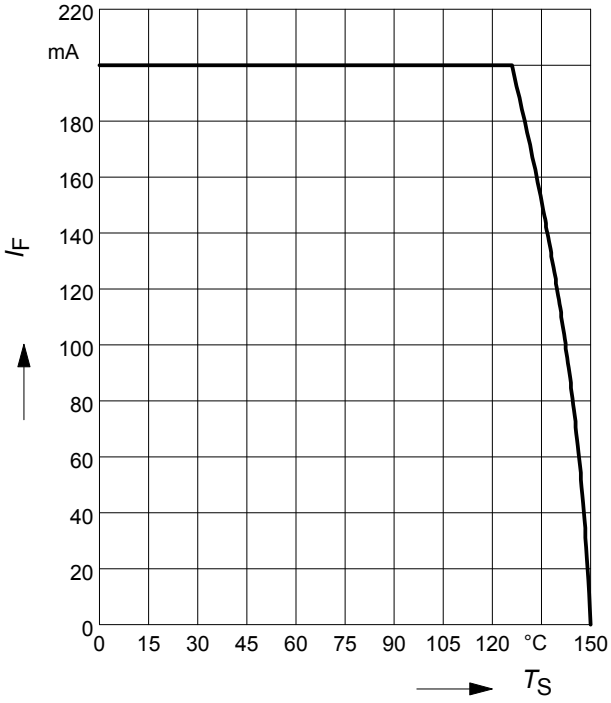
Forward current $I_F = f(T_S)$

BAT54-02LRH

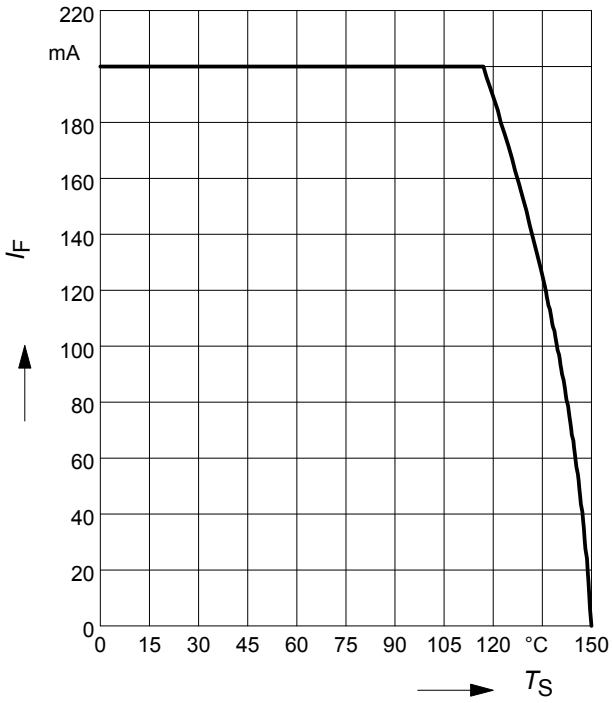


Forward current $I_F = f(T_S)$

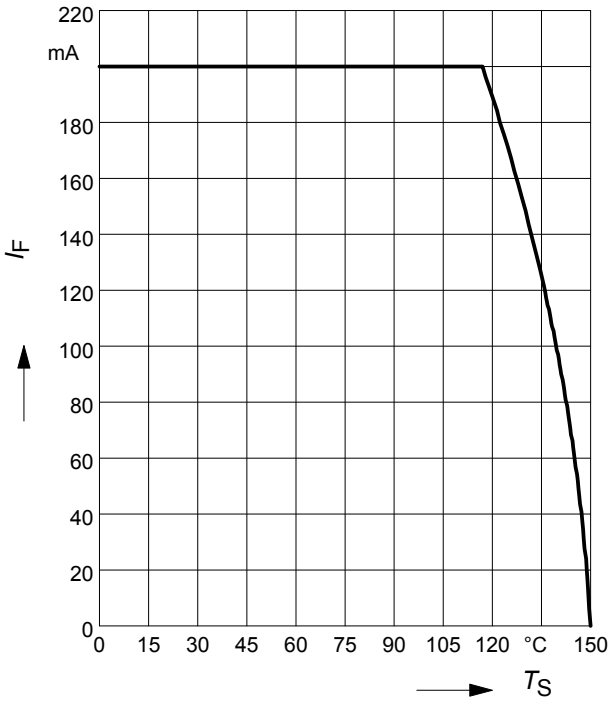
BAT54-02V



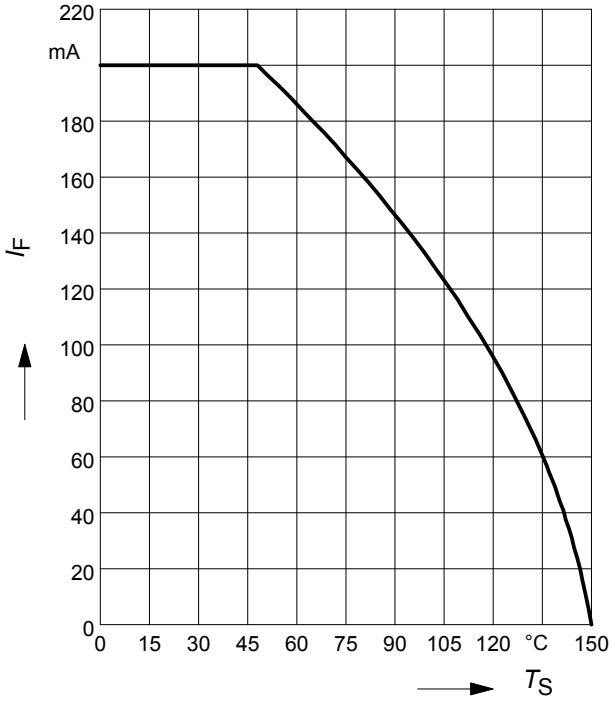
Forward current $I_F = f(T_S)$
BAT54-04



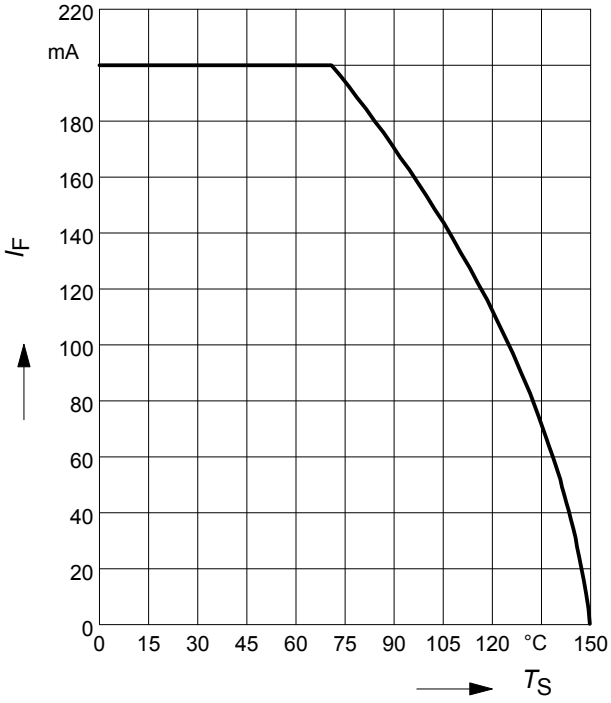
Forward current $I_F = f(T_S)$
BAT54-04W



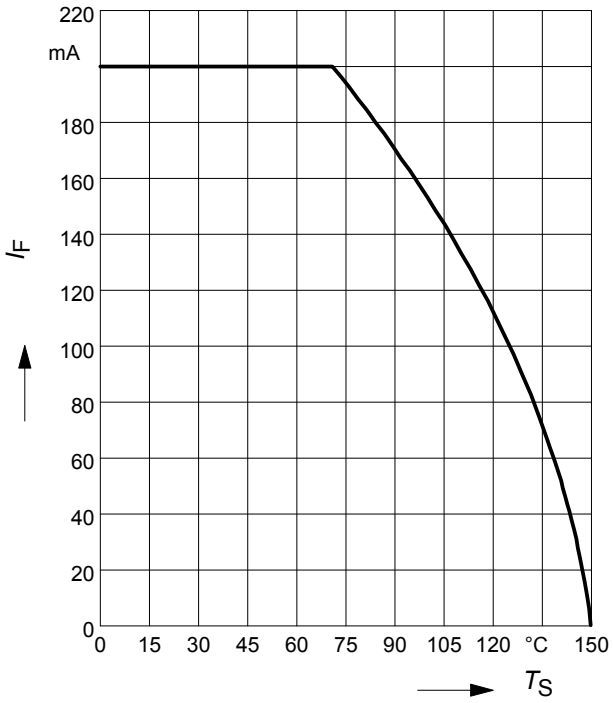
Forward current $I_F = f(T_S)$
BAT54-05



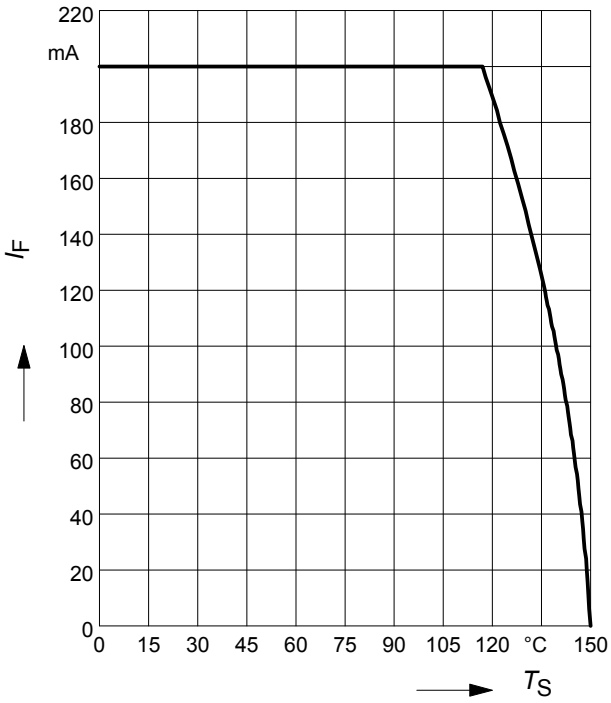
Forward current $I_F = f(T_S)$
BAT54-05W



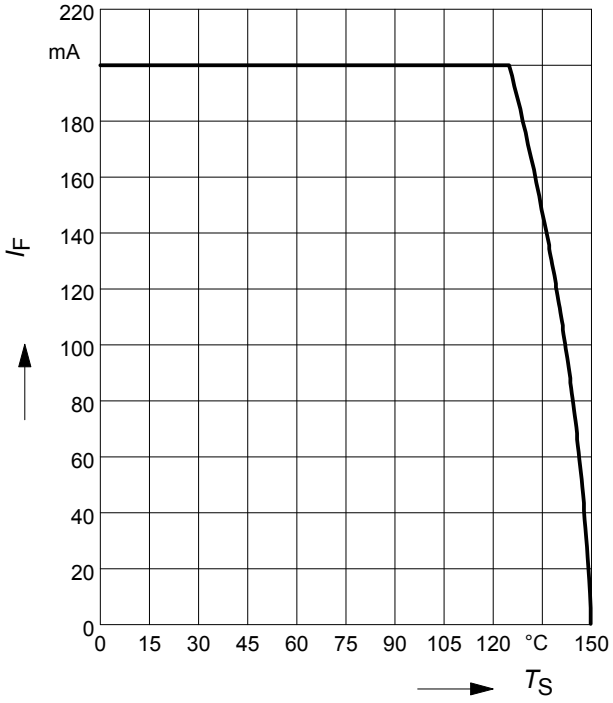
Forward current $I_F = f(T_S)$
BAT54-06



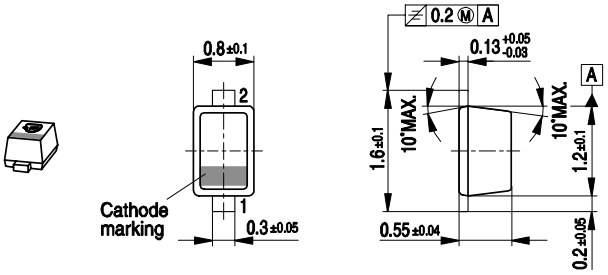
Forward current $I_F = f(T_S)$
BAT54-06W



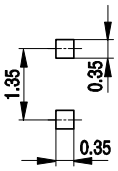
Forward current $I_F = f(T_S)$
BAT54W



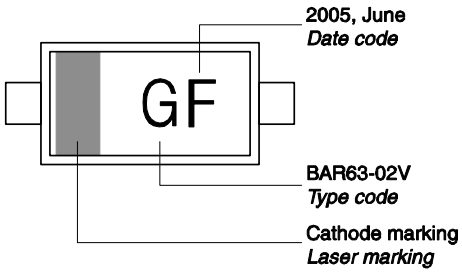
Package Outline



Foot Print

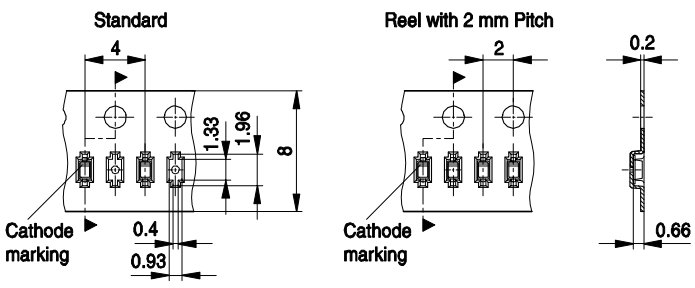


Marking Layout (Example)



Standard Packing

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

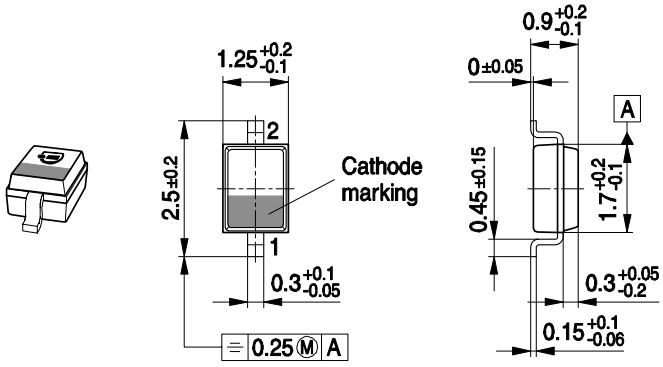


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1)]) CES-Code

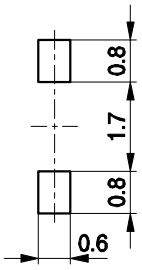
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

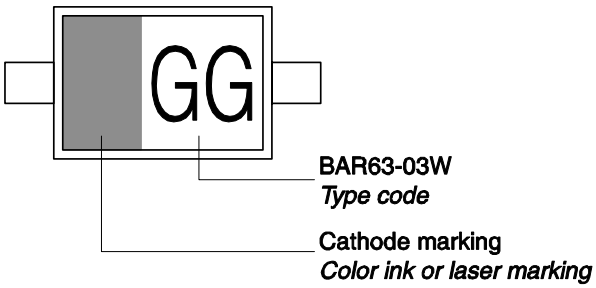
Package Outline



Foot Print

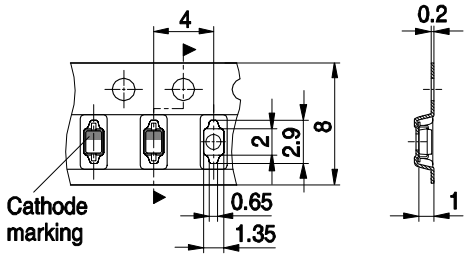


Marking Layout (Example)

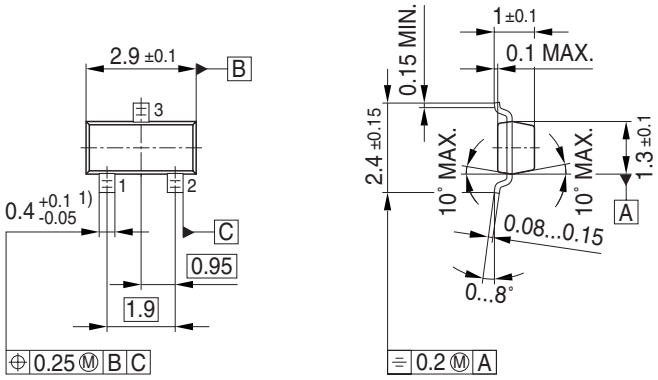


Standard Packing

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

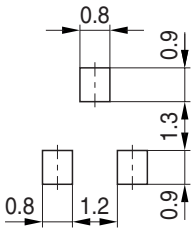


Package Outline

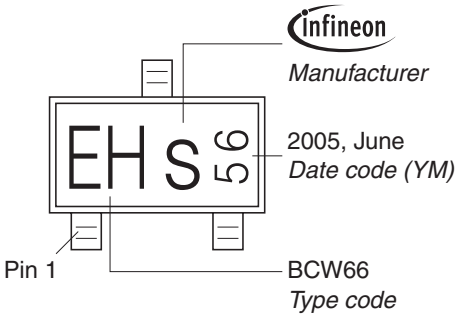


1) Lead width can be 0.6 max. in dambar area

Foot Print

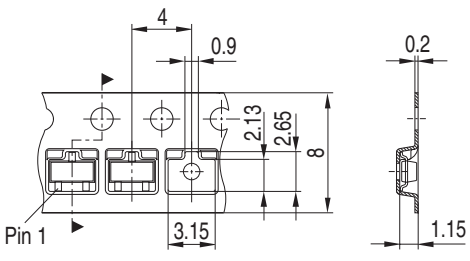


Marking Layout (Example)

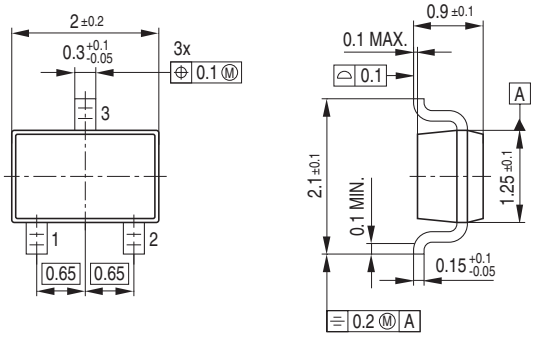


Standard Packing

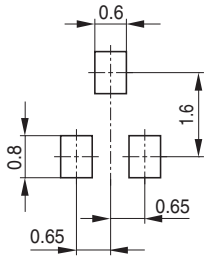
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



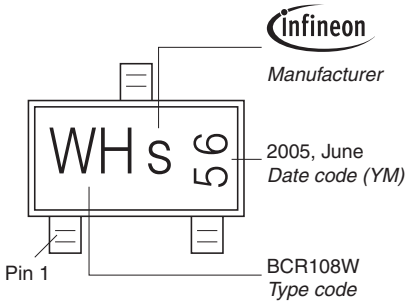
Package Outline



Foot Print

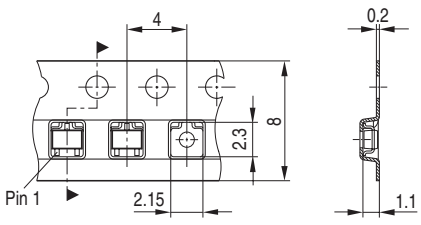


Marking Layout (Example)

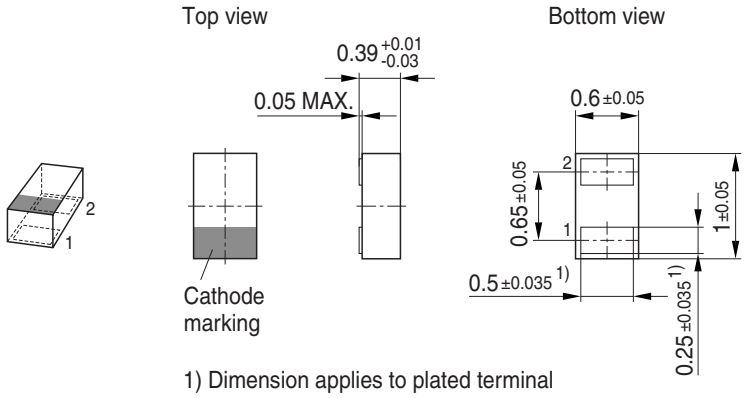


Standard Packing

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



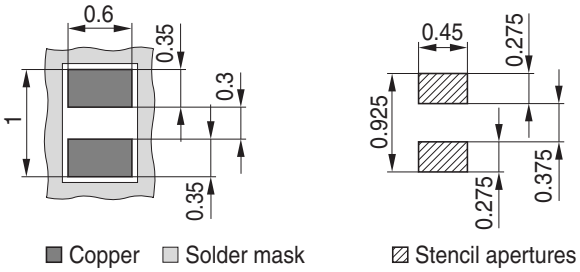
Package Outline



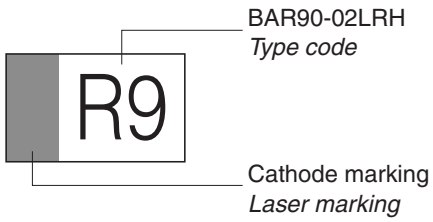
1) Dimension applies to plated terminal

Foot Print

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

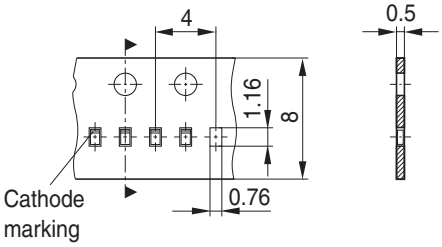


Marking Layout (Example)



Standard Packing

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



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Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.
Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

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