

Silicon Schottky Diodes

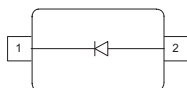
- For low-loss, fast-recovery, meter protection, bias isolation and clamping application
- Integrated diffused guard ring
- Low forward voltage
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101



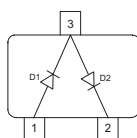
BAT64



BAT64-02W BAT64-02V



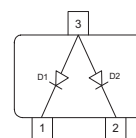
BAT64-04 BAT64-04W



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
BAT64-02V	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 $T_A = 25\text{ °C}$, 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, $T_S \leq 86\text{°C}$		250	
BAT64-02W, -02V $T_S \leq 121\text{°C}$		250	
BAT64-04, BAT64-06, $T_S \leq 61\text{°C}$		250	
BAT64-04W, BAT64-06W, $T_S \leq 111\text{°C}$		250	
BAT64-05, $T_S \leq 36\text{°C}$		250	
BAT64-05W, $T_S \leq 104\text{°C}$		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 $T_A = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 10\text{ }\mu\text{A}$	$V_{(BR)}$	40	-	-	V
Reverse current $V_R = 30\text{ V}$ $V_R = 30\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$	I_R	- -	- -	2 200	μA
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
AC Characteristics					
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$	C_T	-	4	6	pF
Reverse recovery time $I_F = 10\text{ mA}, I_R = 10\text{ mA}$, 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 $I_R = f(V_R)$

$T_A = \text{Parameter}$



Forward current $I_F = f(V_F)$

$T_A = \text{Parameter}$



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 $R_{thJS} = f(t_p)$

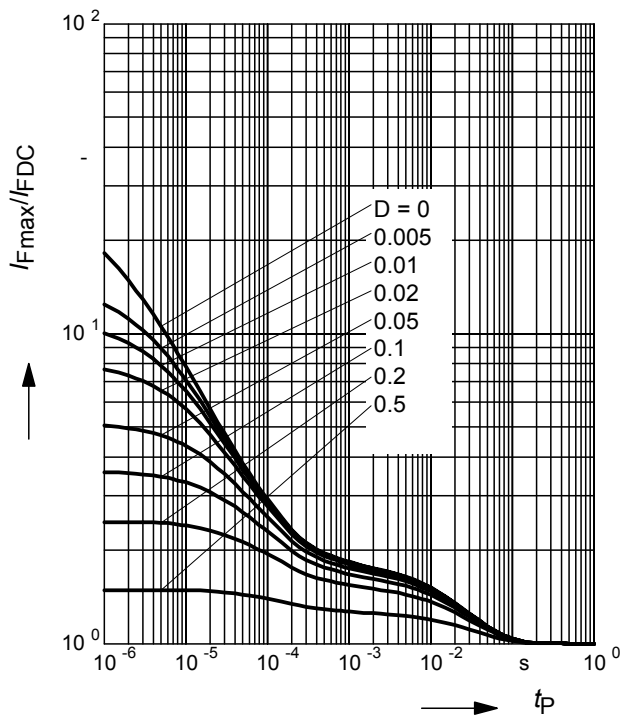
BAT64-04W, BAT64-06W



Permissible Pulse Load

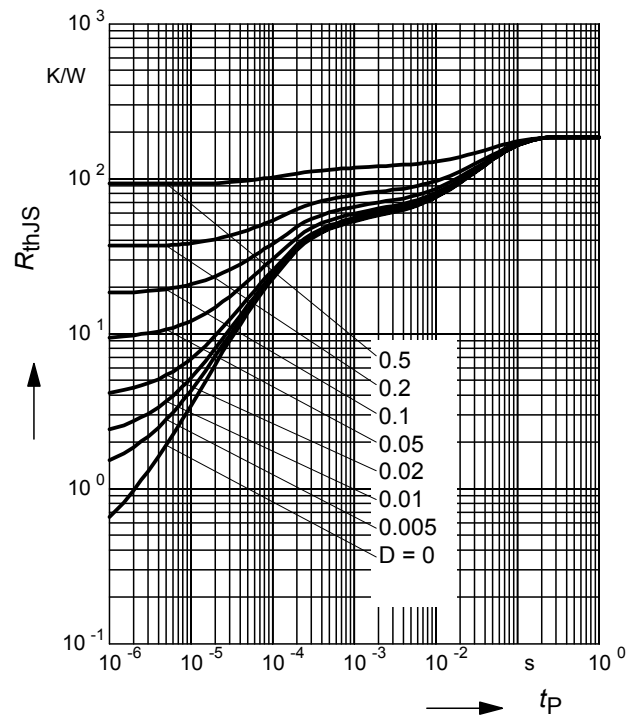
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT64-04W, BAT64-06W



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

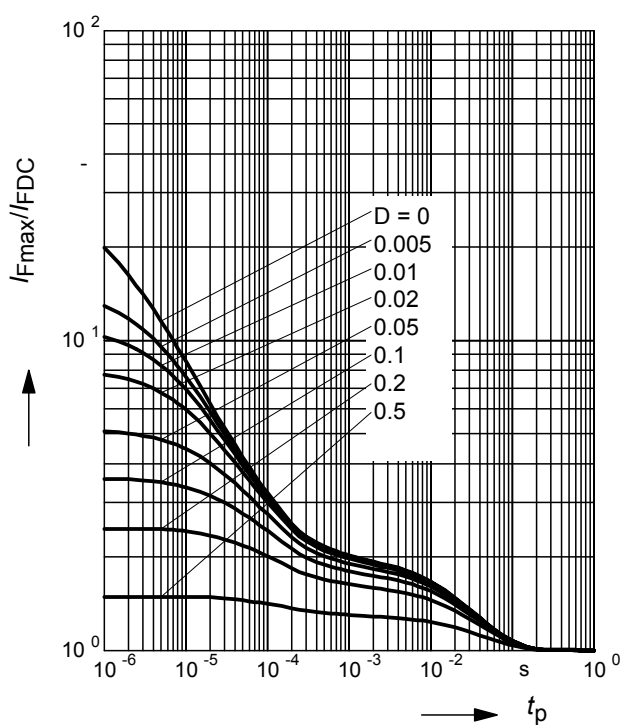
BAT64-05W



Permissible Pulse Load

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

BAT64-05W



2005, June
Date code

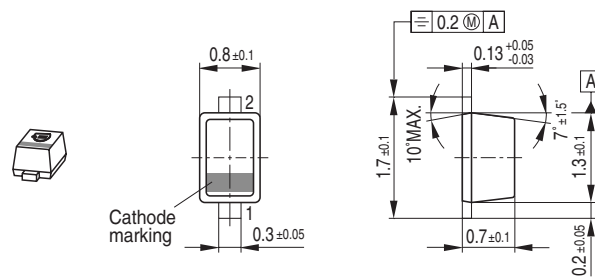
GF

BAR63-02V
Type code

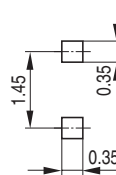
Cathode marking
Laser marking

The image contains three technical drawings of cathode marking components. The first drawing, labeled 'Standard', shows a top view of a component with a width of 8 and a height of 4. It features two circular cathode markings, each with a diameter of 1.33. The distance between the centers of the markings is 1.96. The distance from the left edge to the center of the first marking is 0.4, and the distance from the center of the first marking to the right edge is 0.93. The second drawing, labeled 'Reel with 2 mm Pitch', shows a top view of a component with a width of 2. It features two circular cathode markings, each with a diameter of 1.33. The distance between the centers of the markings is 1.96. The distance from the left edge to the center of the first marking is 0.4, and the distance from the center of the first marking to the right edge is 0.93. The third drawing shows a side view of the component with a height of 0.66 and a width of 0.2.

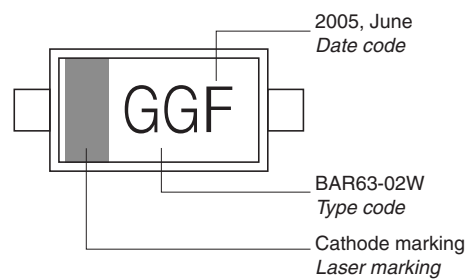
Package Outline



Foot Print

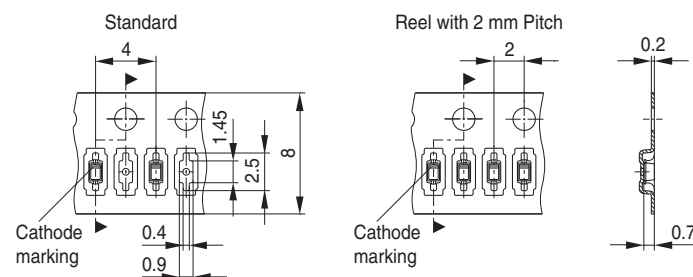


Marking Layout (Example)



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

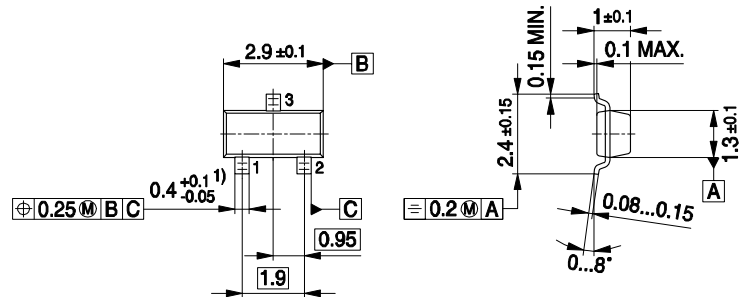
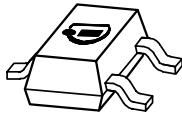


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75¹⁾) CES-Code

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.

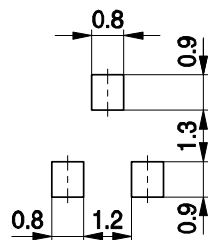
Package Outline



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

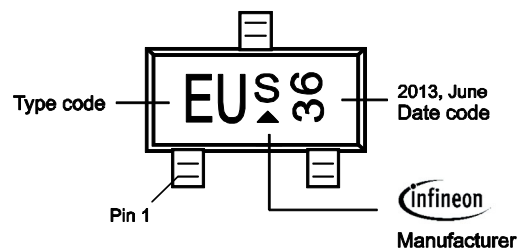
SOT23-PO V08

Foot Print



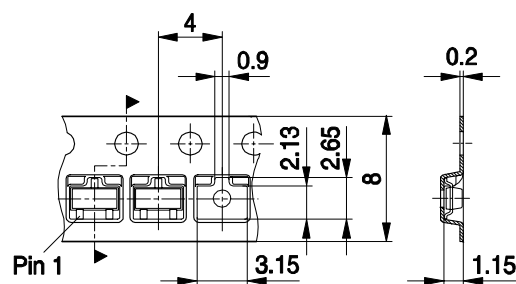
SOT23-FPR V08

Marking Layout



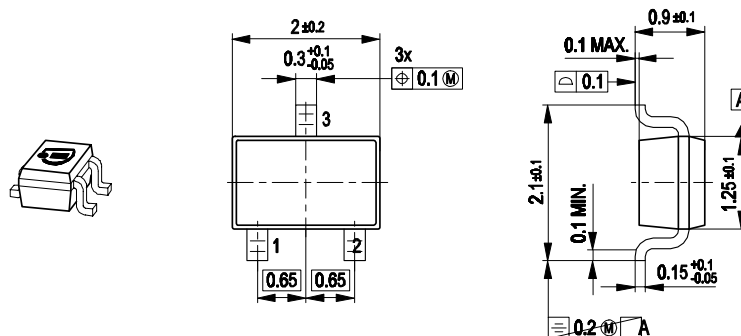
Standard Packing

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

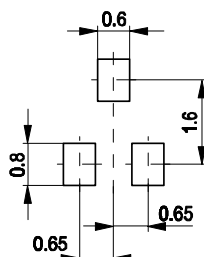


SOT23-TP V02

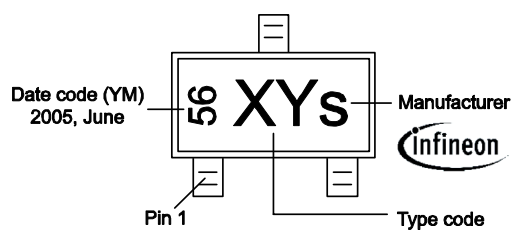
Package Outline



Foot Print

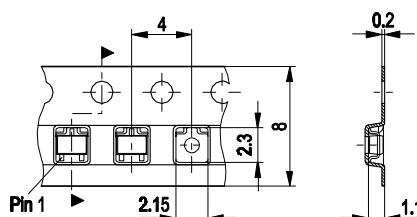


Marking Layout (Example)



Standard Packing

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



Edition 2009-11-16

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

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