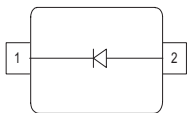


### Silicon Schottky Diode

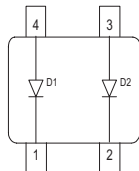
- Low barrier diode for detectors up to GHz frequencies
- For high-speed applications
- Zero bias detector diode
- Pb-free (RoHS compliant) package



#### BAT63-02V



#### BAT63-07W



**ESD (Electrostatic discharge) sensitive device, observe handling precaution!**

Type	Package	Configuration	$L_S$ (nH)	Marking
BAT63-02V	SC79	single	0.6	d
BAT63-07W	SOT343	parallel pair	1.6	63s

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	3	V
Forward current	$I_F$	100	mA
Total power dissipation	$P_{\text{tot}}$		mW
$T_S \leq 120^\circ\text{C}$ , BAT63-02V		100	
$T_S \leq 114^\circ\text{C}$ , BAT63-07W		100	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 ... 150	

#### Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{\text{thJS}}$		K/W
BAT63-02V		$\leq 295$	
BAT63-07W		$\leq 355$	

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

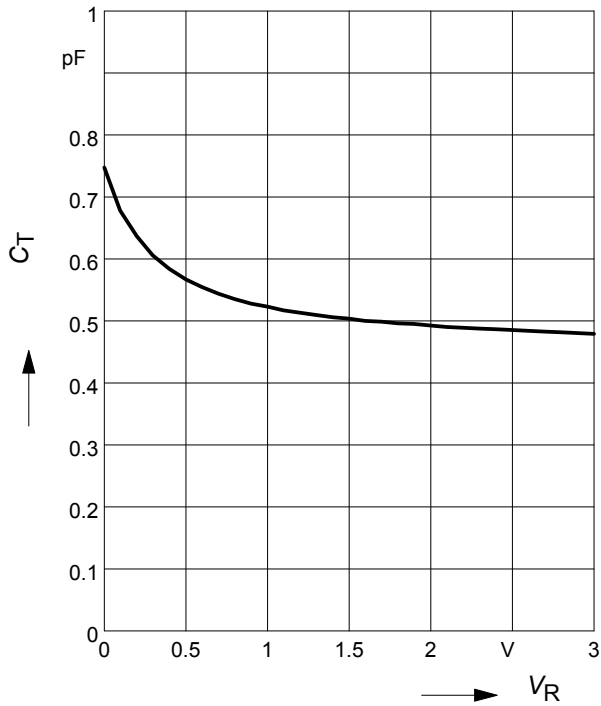
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current $V_R = 3\text{ V}$	$I_R$	-	-	10	$\mu\text{A}$
Forward voltage $I_F = 1\text{ mA}$	$V_F$	-	190	300	mV
Forward voltage matching <sup>2)</sup> $I_F = 1\text{ mA}$	$\Delta V_F$	-	-	20	
<b>AC Characteristics</b>					
Diode capacitance $V_R = 0.2\text{ V}, f = 1\text{ MHz}$	$C_T$	-	0.65	0.85	pF
Differential resistance $V_R = 0, f = 10\text{ kHz}$	$R_0$	-	30	-	k $\Omega$

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

<sup>2</sup> $\Delta V_F$  is the difference between lowest and highest  $V_F$  in a multiple diode component.

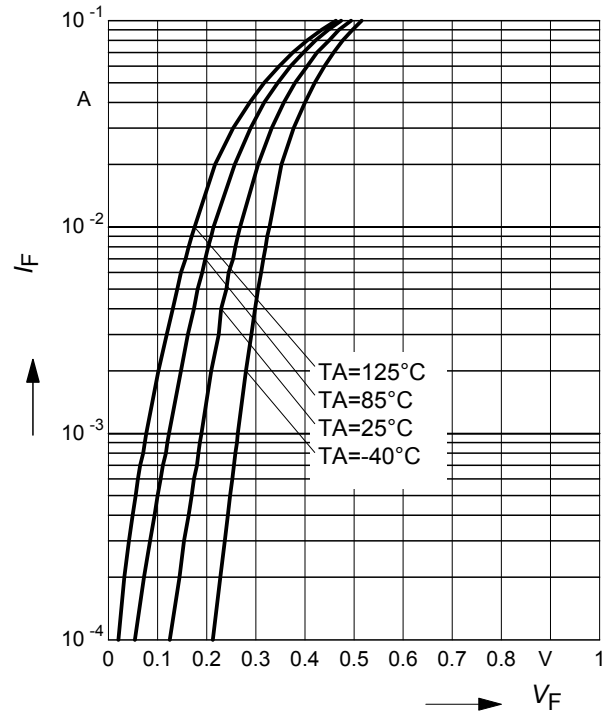
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



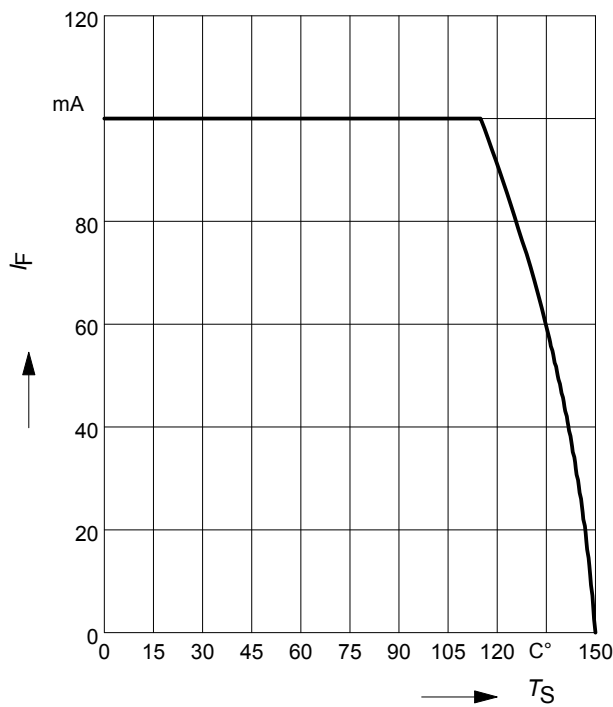
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



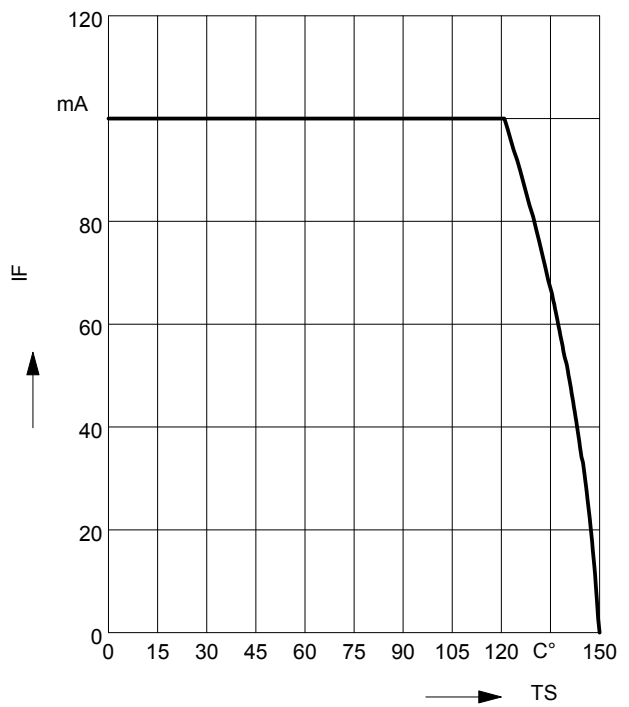
**Forward current  $I_F = f(T_S)$**

BAT63-07W



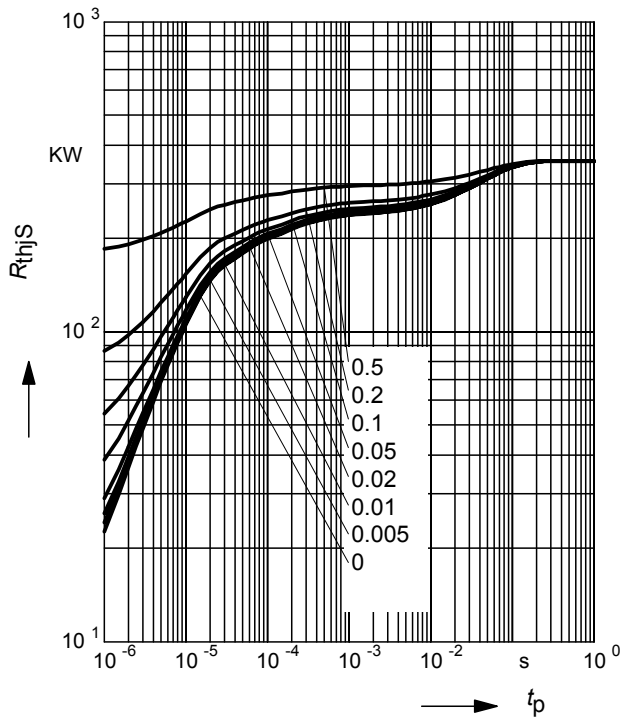
**Forward current  $I_F = f(T_S)$**

BAT63-02V



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

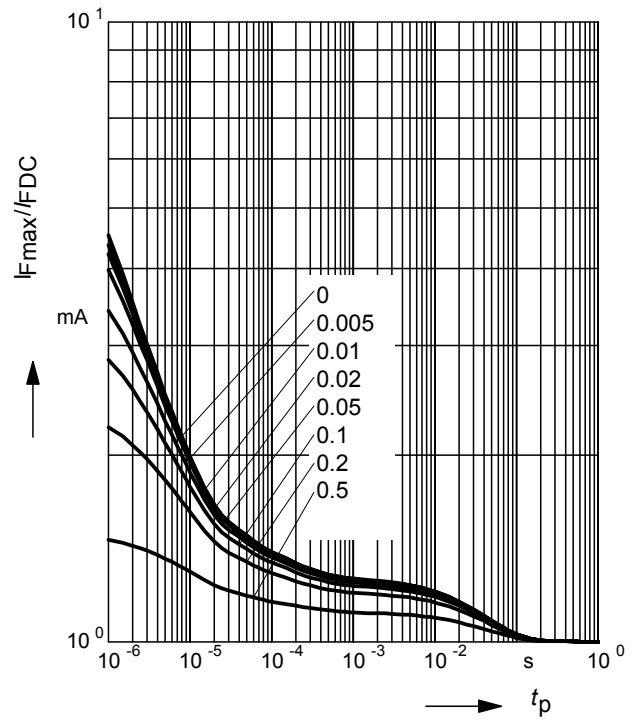
BAT63-07W



**Permissible Pulse Load**

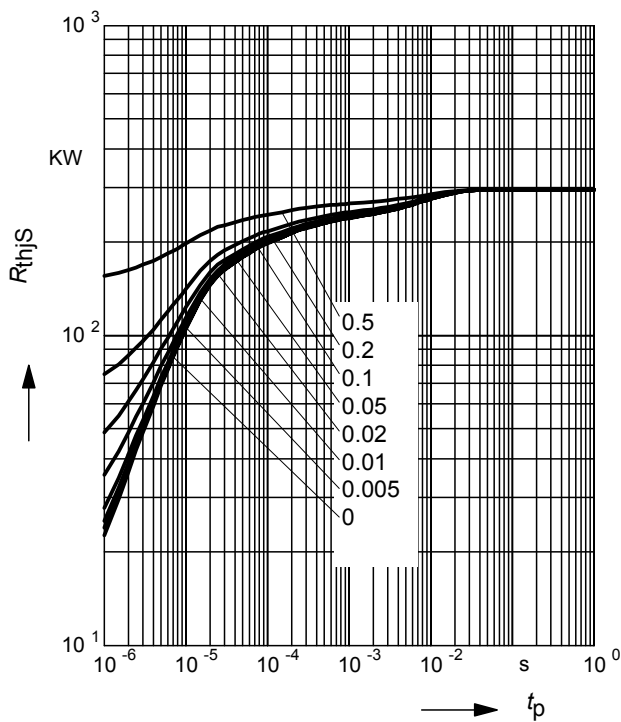
$I_{Fmax} / I_{FDC} = f(t_p)$

BAT63-07W



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

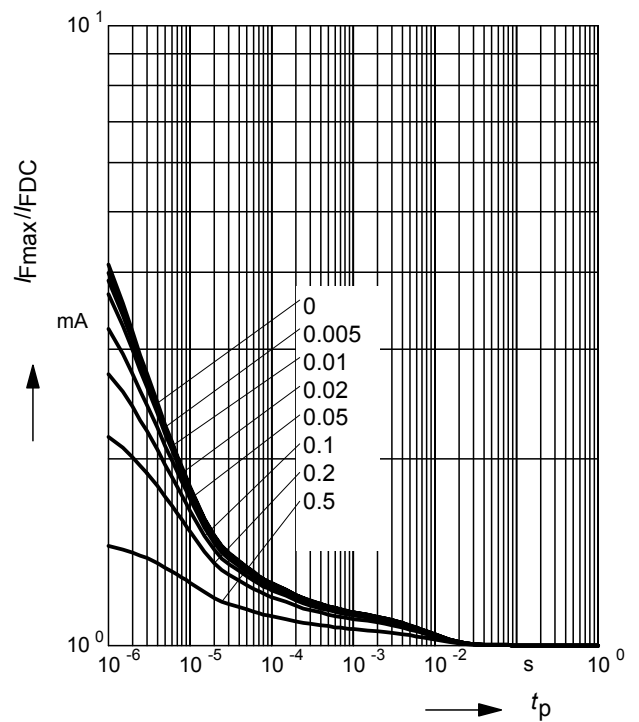
BAT63-02V



**Permissible Pulse Load**

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

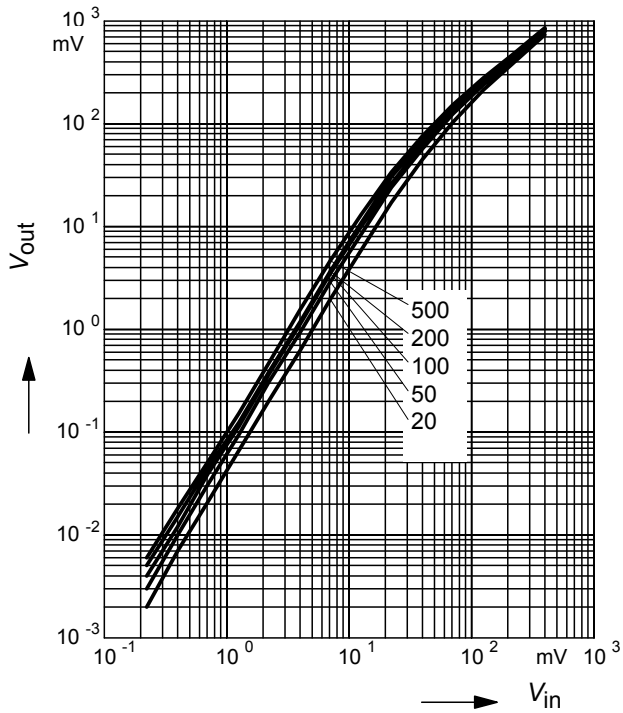
BAT63-02V



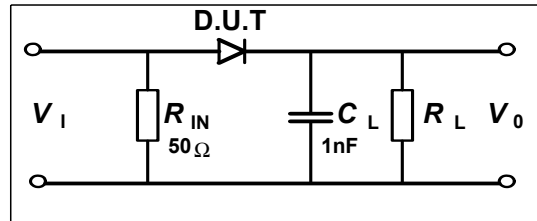
Rectifier voltage  $V_{out} = f(V_{in})$

$f = 2.4\text{GHz}$

$R_L =$  Parameter in  $k\Omega$



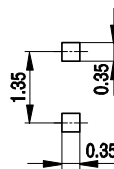
Testcircuit



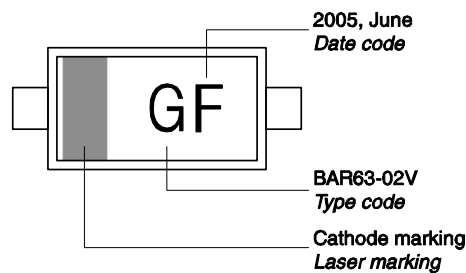
### Package Outline



### 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

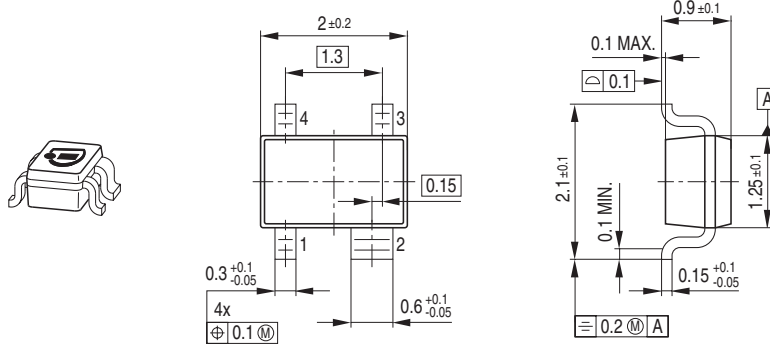


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

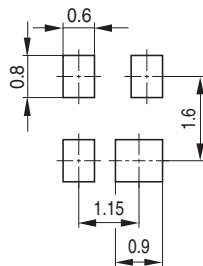
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

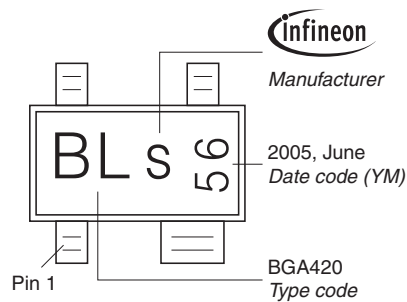
Package Outline



Foot Print

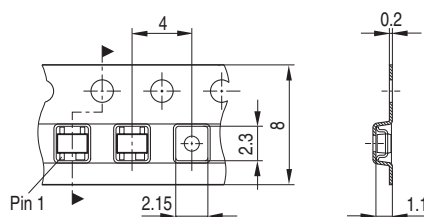


Marking Layout (Example)



Standard Packing

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





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