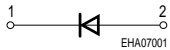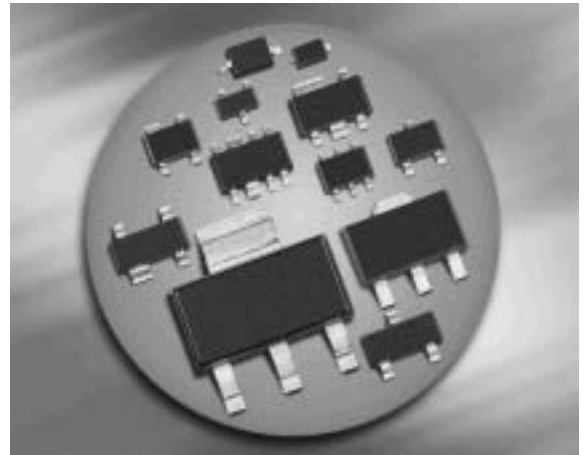**Infineon**

BB659E6805

Silicon Variable Capacitance Diode

- C_{1V}-capacitance selection for Samsung

- For VHF-TV-tuners

- High capacitance ratio

- Low series inductance

- Low series resistance

- Extremely small plastic SMD package

- Excellent uniformity and matching due to "in-line" matching assembly procedure

1 —►|— 2
EHA07001

Type	Package	Configuration	L_S(nH)	Marking
BB659E6805	SCD80	single	-	DE

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage ($R \geq 5k\Omega$)	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 125	°C
Storage temperature	T_{stg}	-55 ... 150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 30 V		-	-	10	
V_R = 30 V, T_A = 85 °C		-	-	200	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		37.2	38.3	39.4	
V_R = 2 V, f = 1 MHz		27.5	30.1	32	
V_R = 25 V, f = 1 MHz		2.5	2.89	3.2	
V_R = 28 V, f = 1 MHz		2.4	2.6	2.9	
Capacitance ratio	C_{T1}/C_{T28}	13.5	14.7	-	-
V_R = 1 V, V_R = 28 V, f = 1 MHz					
Capacitance ratio	C_{T2}/C_{T25}	9.8	10.4	-	
V_R = 2 V, V_R = 25 V, f = 1 MHz					
Series resistance	r_S	-	0.65	0.7	Ω
V_R = 5 V, f = 470 MHz					

Diode capacitance $C_T = f(V_R)$
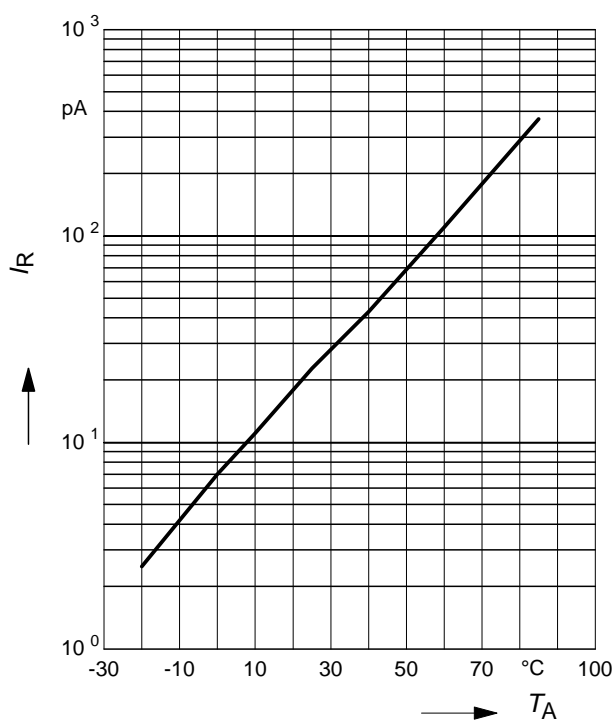
$f = 1\text{MHz}$
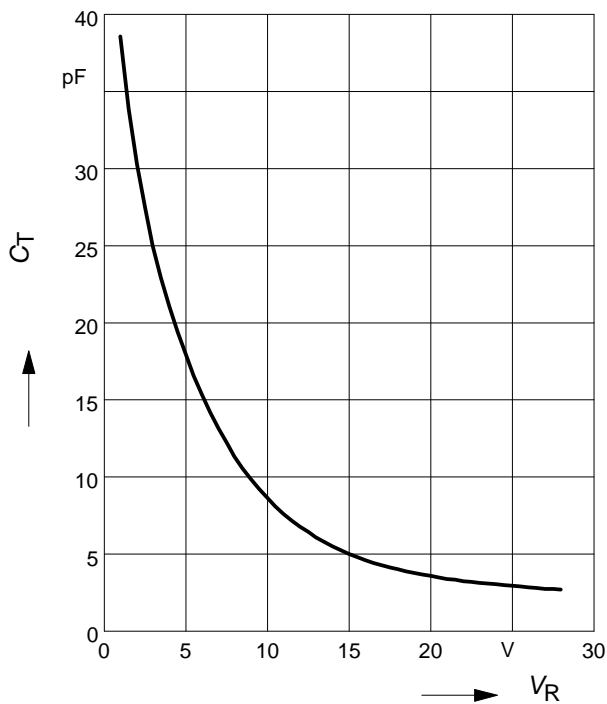
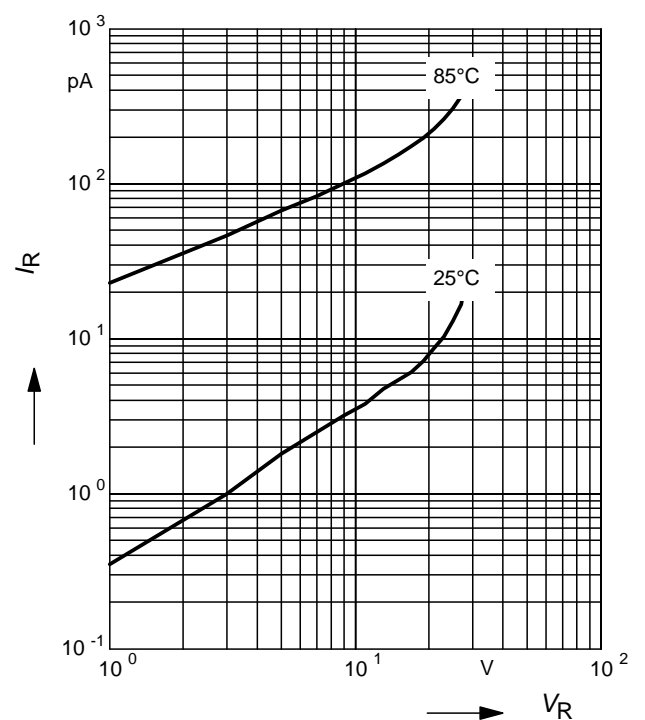**Temperature coefficient of the diode capacitance** $T_{Cc} = f(V_R)$
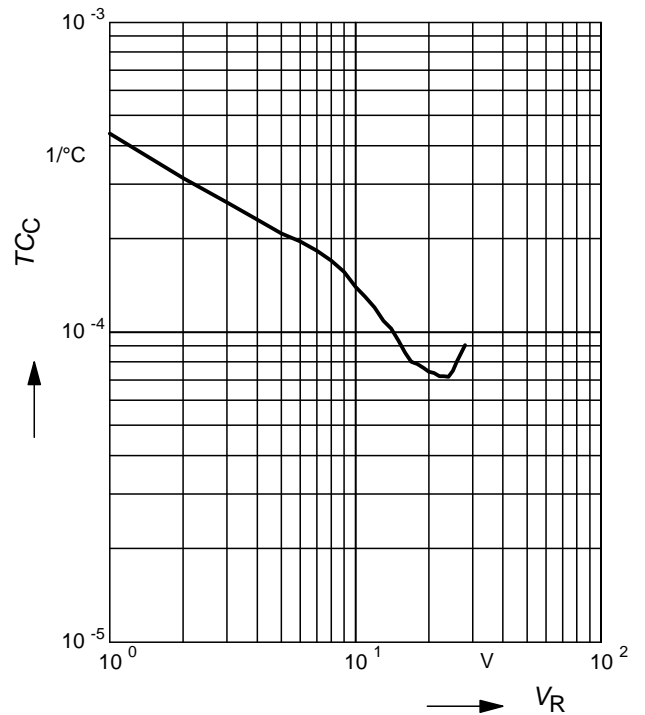
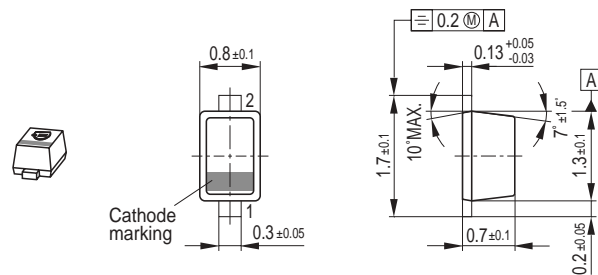**Reverse current** $I_R = f(T_A)$
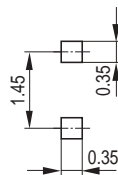
$V_R = 28\text{V}$

Reverse current $I_R = f(V_R)$
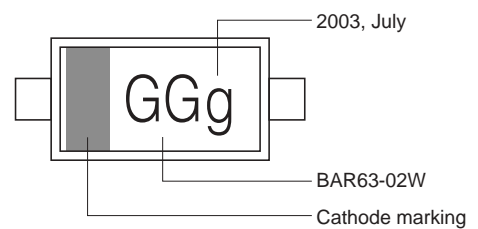
$T_A = \text{Parameter}$

2005-10-19

Package Outline

Cathode marking

0.8 ±0.1

0.3 ±0.05

2

1

0.2 Ⓜ A

0.13 +0.05 -0.03

1.7 ±0.1

10° MAX.

7° ±1.5°

1.3 ±0.1

A

0.7 ±0.1

0.2 ±0.05

Foot Print

1.45

0.35

0.35

Marking Layout

Date code

12

Type code

Laser marking

2003, July

GGg

BAR63-02W
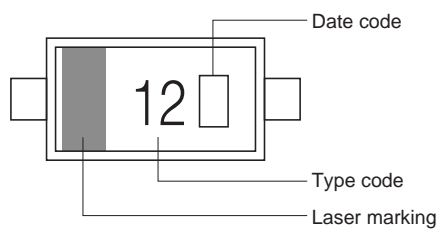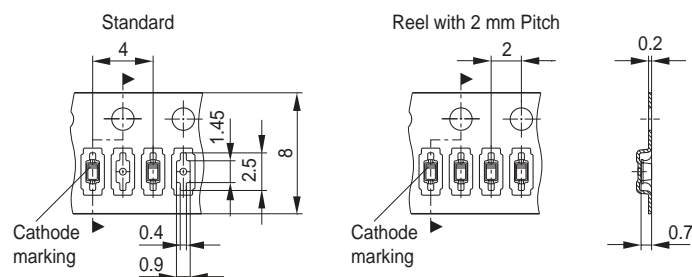
Cathode marking

Example

Standard Packing

Reel ⌀180 mm = 3.000 Pieces/Reel
Reel ⌀180 mm = 8.000 Pieces/Reel (2 mm Pitch)
Reel ⌀330 mm = 10.000 Pieces/Reel

Standard

4

1.45

2.5

8

Cathode marking

0.4

0.9

Reel with 2 mm Pitch

2

Cathode marking

0.2

0.7

Data Code marking for discrete packages with one digit (SCD80, SC79) 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

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