**Silicon Switching Diode**

- For high-speed switching applications
- Pb-free (RoHS compliant) package[1]
- Qualified according AEC Q101
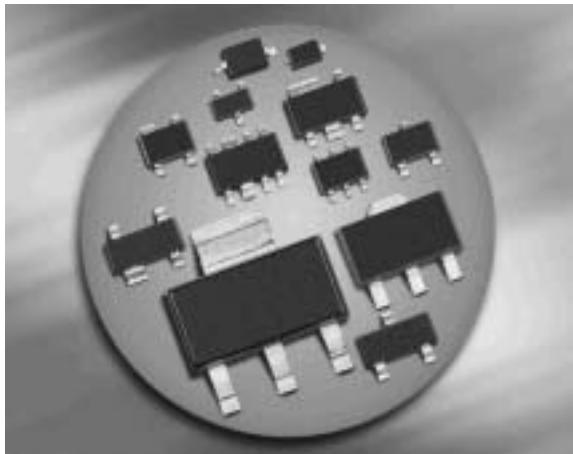
BAL99
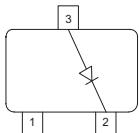
Type	Package	Configuration	Marking
BAL99	SOT23	single	JFs

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	80	V
Peak reverse voltage-	V_{RM}	85	
Forward current	I_F	250	mA
Peak forward current	I_{FM}	-	
Surge forward current, $t = 1$ μs	I_{FS}	4.5	A
Total power dissipation $T_S \leq 54°C$	P_{tot}	370	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

| Parameter	Symbol	Value	Unit
Junction - soldering point[2]	R_{thJS}	≤ 260	K/W

[1]Pb-containing package may be available upon special request
[2]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 100\ \mu A$	$V_{(BR)}$	85	-	-	V
Reverse current $V_R = 70$ V $V_R = 25$ V, $T_A = 150$ °C $V_R = 70$ V, $T_A = 150$ °C	I_R	- - -	- - -	1 30 50	µA
Forward voltage $I_F = 1$ mA $I_F = 10$ mA $I_F = 50$ mA $I_F = 150$ mA	V_F	- - - -	- - - -	715 855 1000 1250	mV
AC Characteristics					
Diode capacitance $V_R = 0$ V, $f = 1$ MHz	C_T	-	-	1.5	pF
Reverse recovery time $I_F = 10$ mA, $I_R = 10$ mA, measured at $I_R = 1$mA , $R_L = 100\ \Omega$	t_{rr}	-	-	4	ns

### Test circuit for reverse recovery time

EHN00014
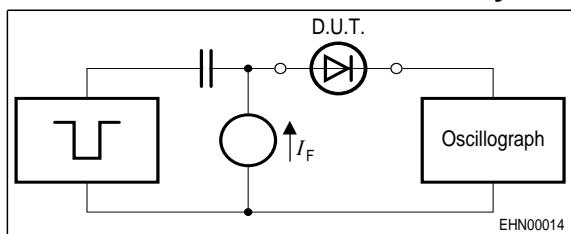
Puls generator: $t_p = 100$ns, $D = 0.05$,
$t_r = 0.6$ns, $R_i = 50\Omega$

Oscillograph: $R = 50$, $t_r = 0.35$ns
$C \leq 1$pf

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Reverse current $I_R = f(T_A)$

V_R = Parameter
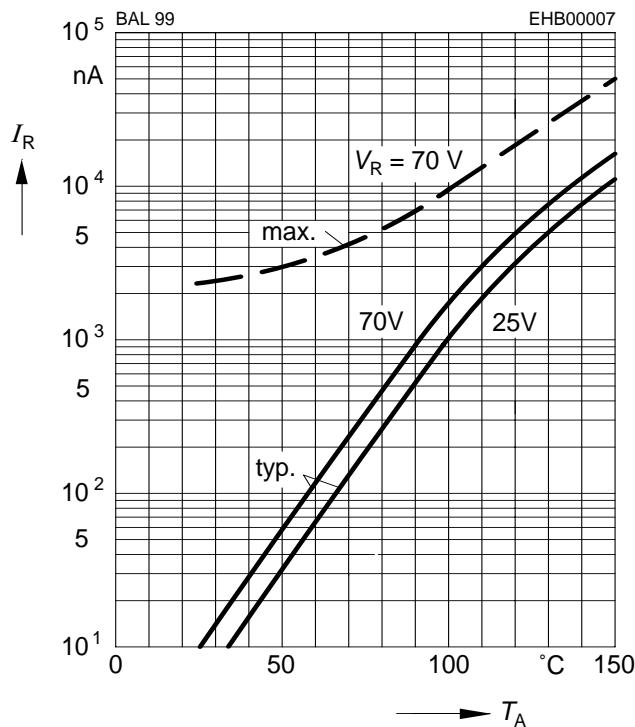
Forward Voltage $V_F = f(T_A)$

I_F = Parameter
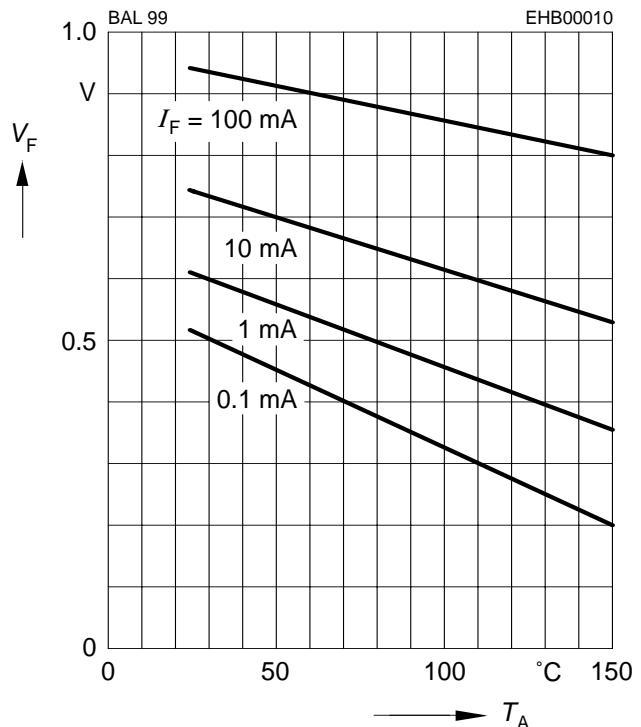
**Forward current** $I_F = f(V_F)$
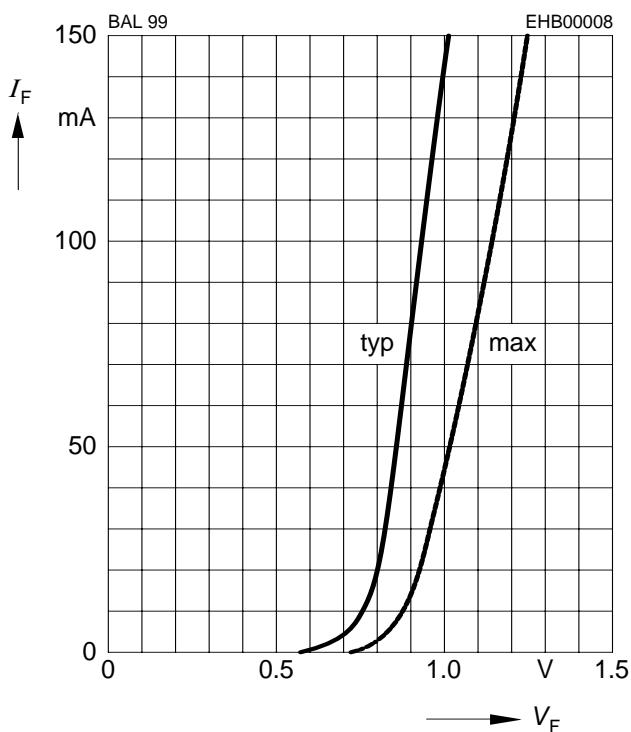
**Peak forward current** $I_{FM} = f(t_p)$

$T_A = 25°C$

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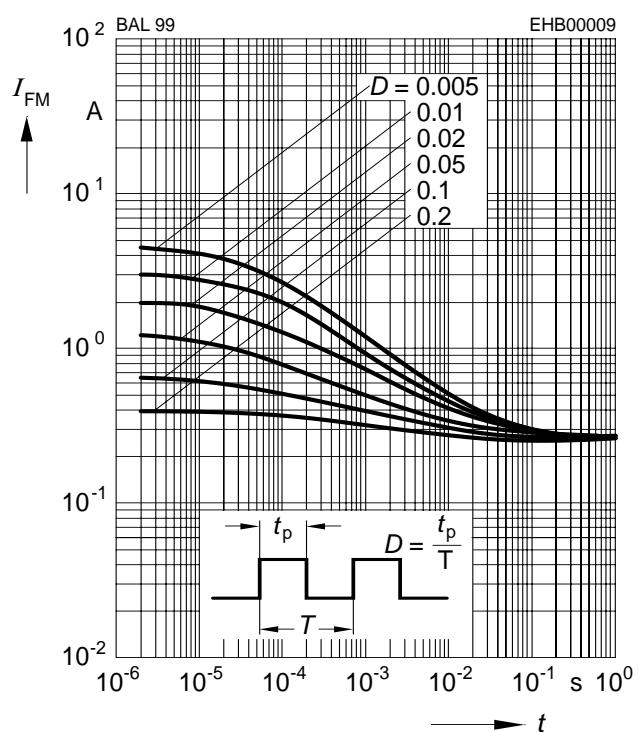
Forward current $I_F = f(T_S)$

Package Outline

2.9 ±0.1 B

3

1

2

0.4 +0.1 -0.05 1)

C

0.95

1.9

1 ±0.1

0.1 MAX.

0.15 MIN.

2.4 ±0.15

10° MAX.

10° MAX.

1.3 ±0.1

A

0.08...0.15

0...8°

⊕ 0.25 Ⓜ B C

≡ 0.2 Ⓜ A
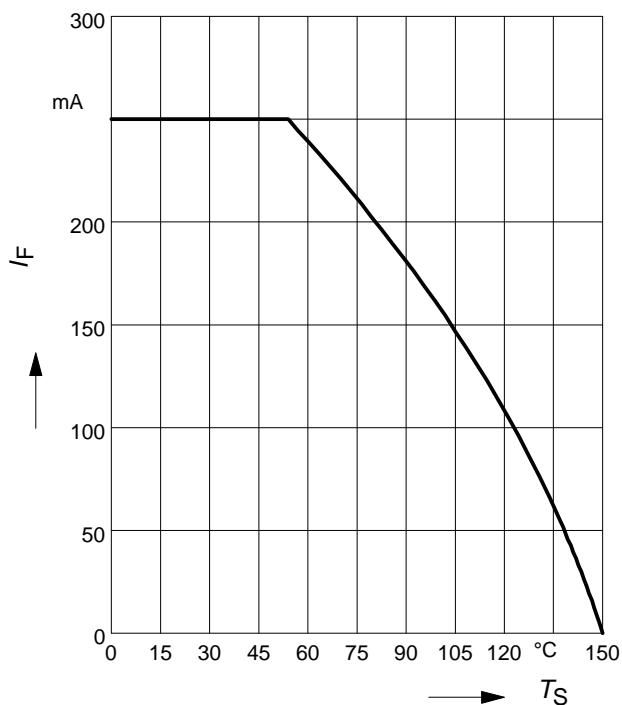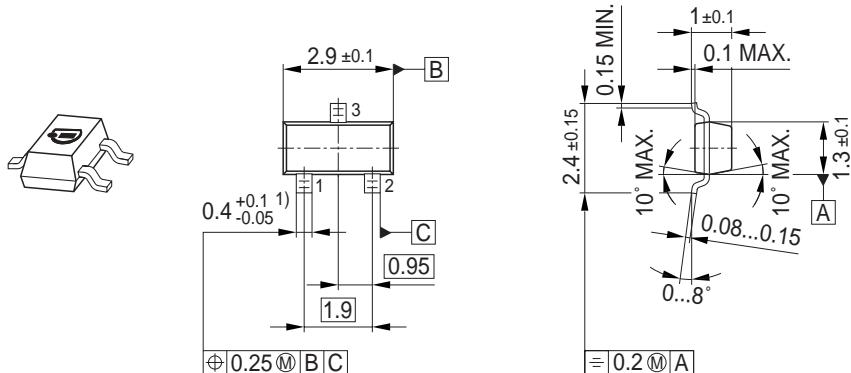
1) Lead width can be 0.6 max. in dambar area

Foot Print

0.8

0.9

1.3

0.8   1.2   0.9
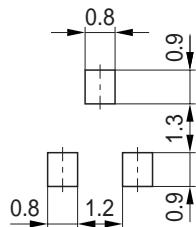
Marking Layout (Example)

Infineon
Manufacturer

EHS 56

2005, June
Date code (YM)

Pin 1

BCW66
Type code
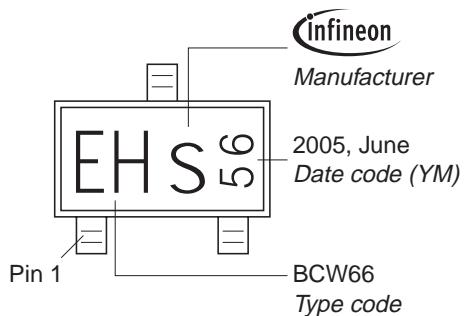
Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel
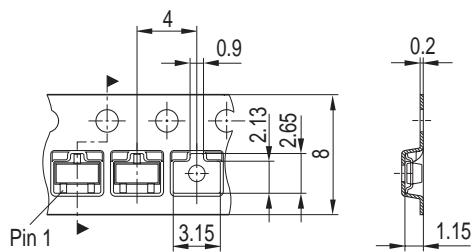
4

0.9

0.2

2.13

2.65

8

Pin 1

3.15

1.15

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