

Silicon Schottky Diode

- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101¹⁾



BAS140W **BAS40-02L**



BAS40



BAS40-04



BAS40-05 **BAS40-05W**



BAS40-06 **BAS40-06W**



BAS40-07 **BAS40-07W**



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

Type	Package	Configuration	Marking
BAS140W	SOD323	single	white 4
BAS40	SOT23	single	43s
BAS40-02L *	TSLP-2-1	single, leadless	FF
BAS40-04	SOT23	series	44s
BAS40-05	SOT23	common cathode	45s
BAS40-05W	SOT323	common cathode	45s
BAS40-06	SOT23	common anode	46s
BAS40-06W	SOT323	common anode	46s
BAS40-07	SOT143	parallel pair	47s
BAS40-07W	SOT343	parallel pair	47s

¹⁾ BAS40-02L is not qualified according AEC Q101

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	120	mA
Non-repetitive peak surge forward current $t \leq 10\text{ms}$	I_{FSM}	200	
Total power dissipation BAS140W, $T_S \leq 113\text{°C}$ BAS40, BAS40-07, $T_S \leq 81\text{°C}$ BAS40-02L, $T_S \leq 127\text{°C}$ BAS40-04, BAS40-06, $T_S \leq 56\text{°C}$ BAS40-06W, $T_S \leq 106\text{°C}$ BAS40-05, $T_S \leq 31\text{°C}$ BAS40-05W, $T_S \leq 98\text{°C}$ BAS40-07W, $T_S \leq 118\text{°C}$	P_{tot}	250 250 250 250 250 250 250 250	mW
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 150	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}		K/W
BAS140W		≤ 150	
BAS40, BAS40-07		≤ 275	
BAS40-02L		≤ 90	
BAS40-04, BAS40-06		≤ 375	
BAS40-06W		≤ 175	
BAS40-05		≤ 475	
BAS40-05W		≤ 205	
BAS40-07W		≤ 125	

¹⁾For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 10\ \mu\text{A}$	$V_{(BR)}$	40	-	-	V
Reverse current $V_R = 30\ \text{V}$	I_R	-	-	1	μA
Forward voltage $I_F = 1\ \text{mA}$ $I_F = 10\ \text{mA}$ $I_F = 40\ \text{mA}$	V_F	250 350 600	310 450 720	380 500 1000	mV
Forward voltage matching ¹⁾ $I_F = 10\ \text{mA}$	ΔV_F	-	-	20	
AC Characteristics					
Diode capacitance $V_R = 0$, $f = 1\ \text{MHz}$	C_T	-	3	5	pF
Differential forward resistance $I_F = 10\ \text{mA}$, $f = 10\ \text{kHz}$	R_F	-	10	-	Ω
Charge carrier life time $I_F = 25\ \text{mA}$	τ_{rr}	-	-	100	ps

¹⁾ ΔV_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 resistance $r_f = f(I_F)$

$f = 10\text{kHz}$



Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



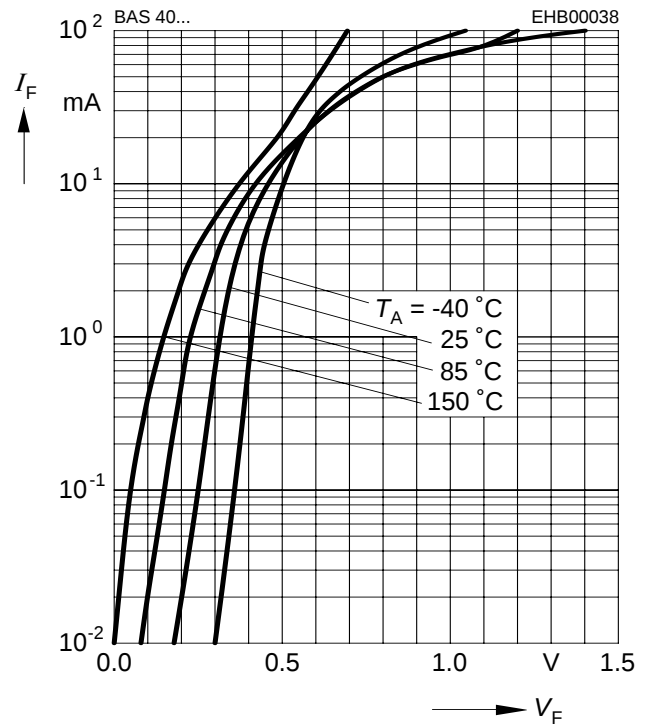
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



Forward current $I_F = f(V_F)$

T_A = Parameter



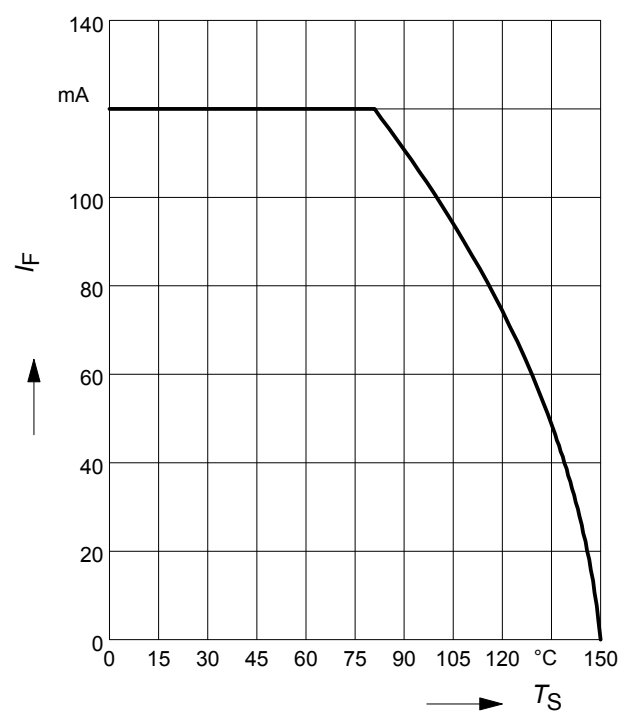
Forward current $I_F = f(T_S)$

BAS140W



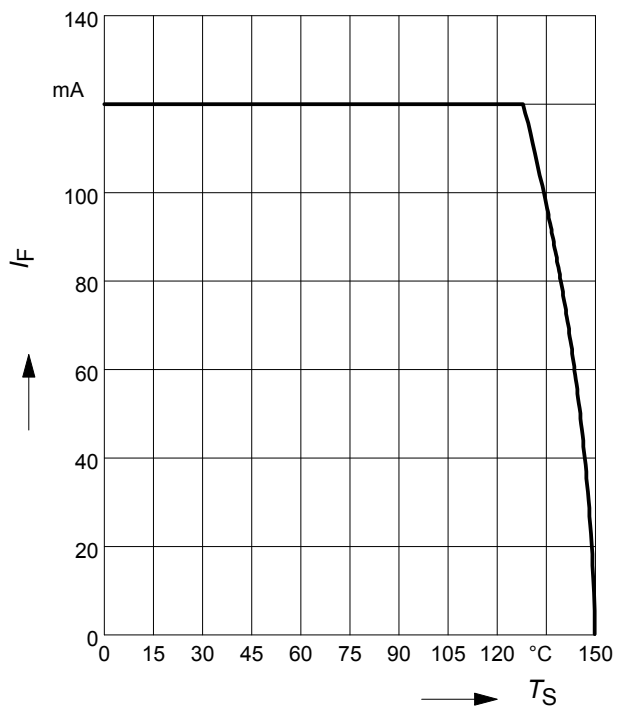
Forward current $I_F = f(T_S)$

BAS40, BAS40-07

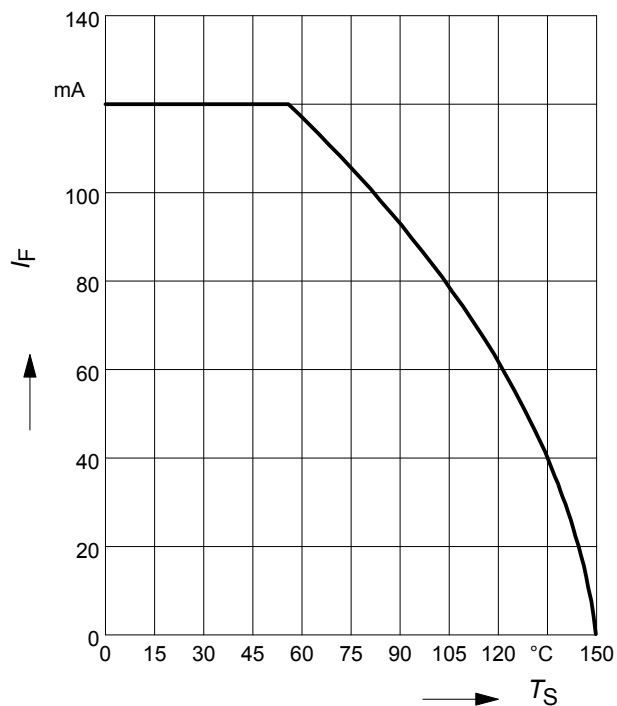


Forward current $I_F = f(T_S)$

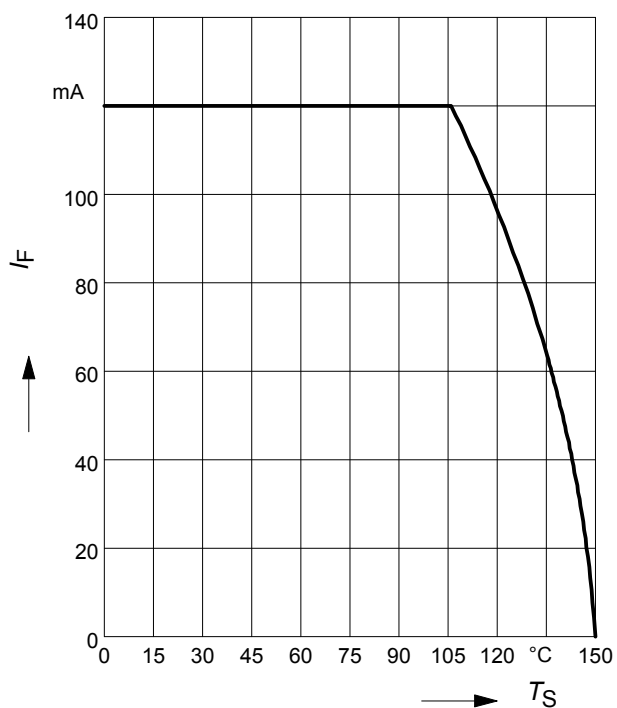
BAS40-02L


Forward current $I_F = f(T_S)$

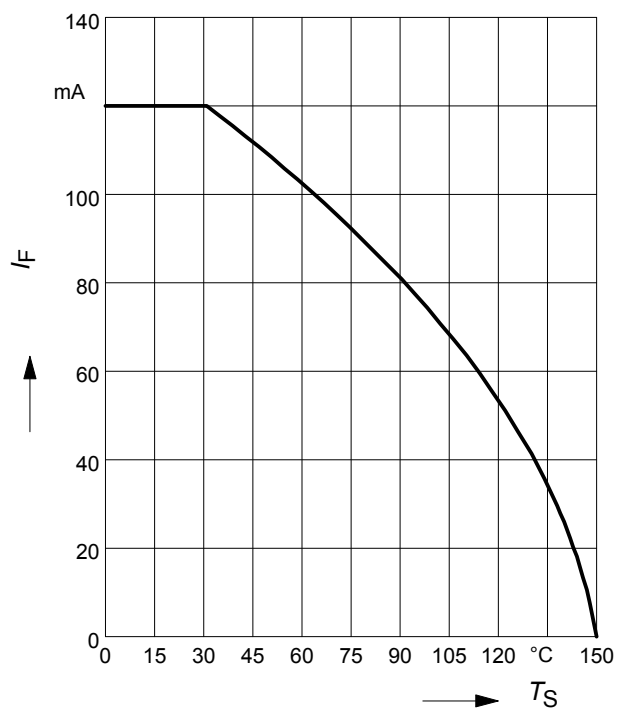
BAS40-04, BAS40-06

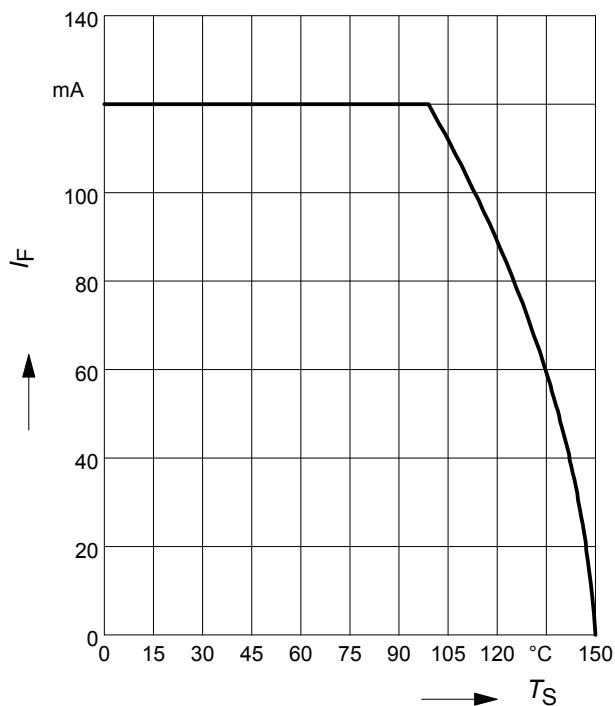
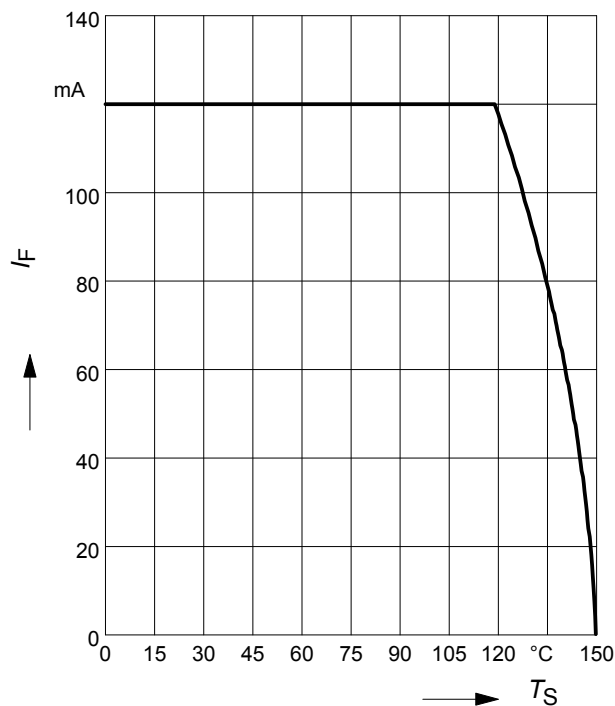

Forward current $I_F = f(T_S)$

BAS40-06W


Forward current $I_F = f(T_S)$

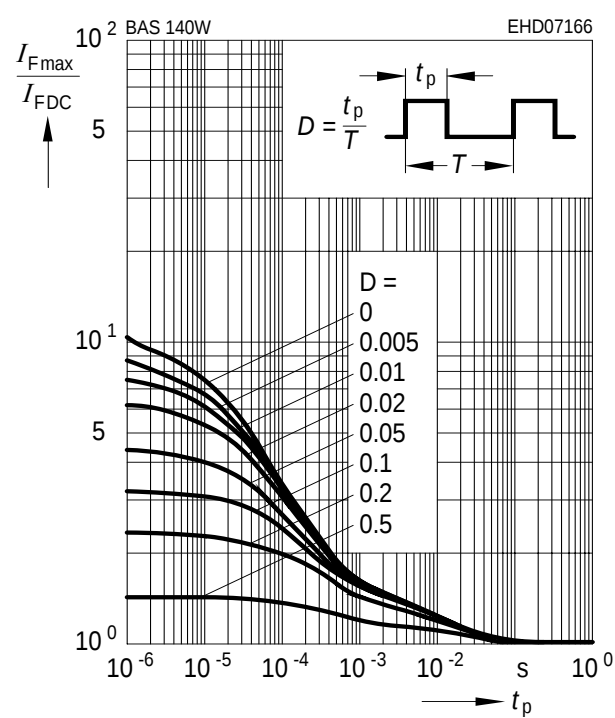
BAS40-05



Forward current $I_F = f(T_S)$
BAS40-05W

Forward current $I_F = f(T_S)$
BAS40-07W

Permissible Puls Load $R_{thJS} = f(t_p)$
BAS140W

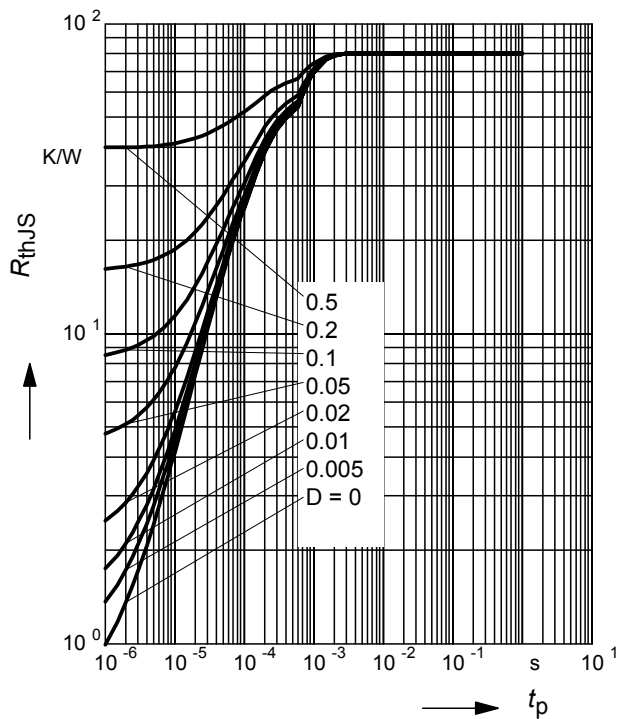
Permissible Pulse Load

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

BAS140W


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

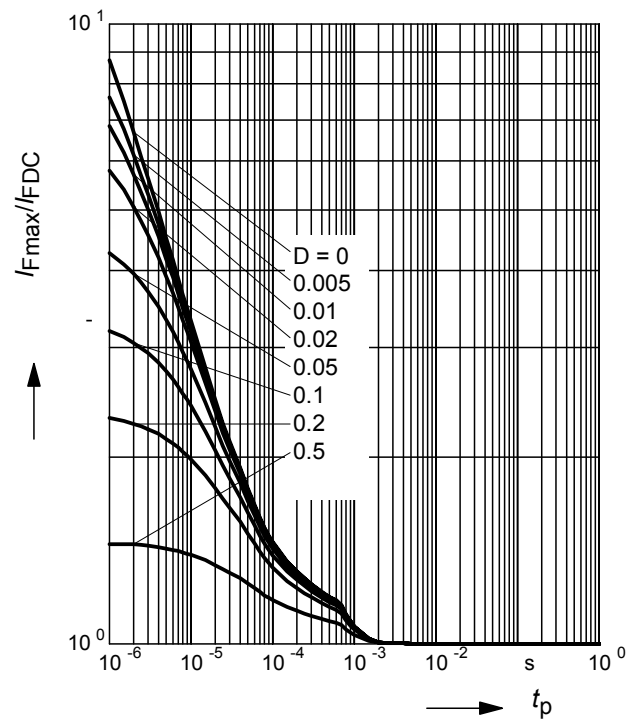
BAS40-02L



Permissible Pulse Load

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

BAS40-02L



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

BAS40-06W



Permissible Pulse Load

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

BAS40-06W



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

BAS40-05W



Permissible Pulse Load

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

BAS40-05W



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

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



Package Outline



Foot Print



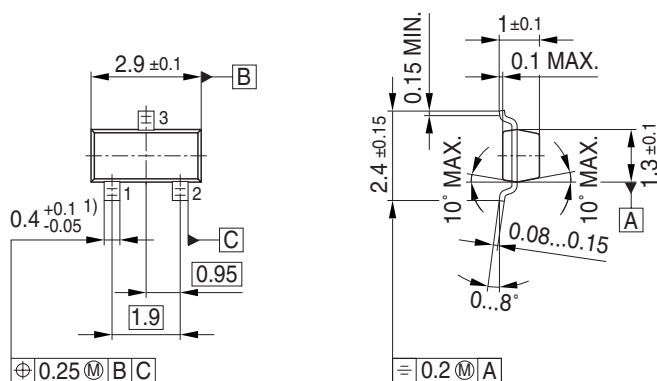
Marking Layout (Example)



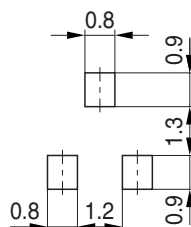
Standard Packing

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





Foot Print



The diagram shows a top-down view of a BCW66 LED package. It is a rectangular component with four pins. The top pin is labeled 'Pin 1'. The package has a central rectangular area containing the text 'EHS' and '2005, June'. To the right of this area is the Infineon logo. Below the package, the text 'BCW66' and 'Type code' are shown. Lines connect the labels to the corresponding parts of the package: 'Pin 1' to the top pin, 'BCW66' to the bottom of the package, 'Type code' to the bottom of the package, 'Manufacturer' to the Infineon logo, and 'Date code (YM)' to the '2005, June' text.

Pin 1

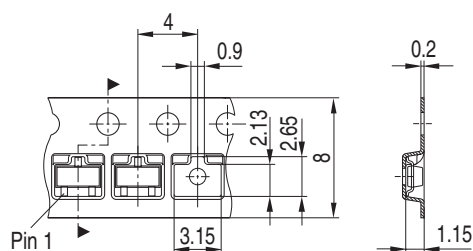
BCW66

Type code

Manufacturer

Date code (YM)

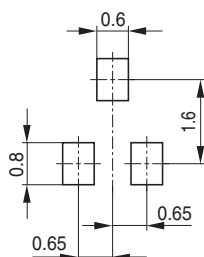
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



Package Outline



Foot Print

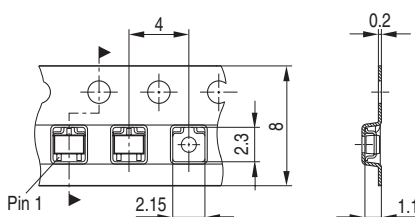


Marking Layout (Example)

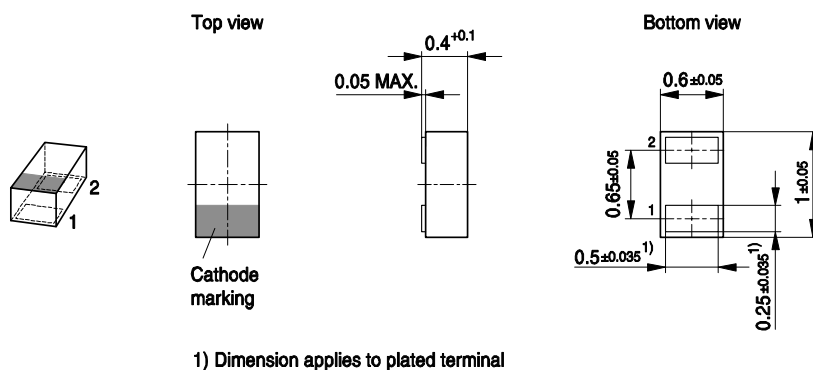


Standard Packing

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



Package Outline



Foot Print

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



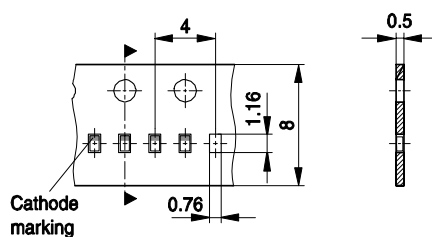
Marking Layout (Example)



Standard Packing

Reel $\varnothing$ 180 mm = 15.000 Pieces/Reel

Reel $\varnothing$ 330 mm = 50.000 Pieces/Reel (optional)



Edition 2009-11-16

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

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