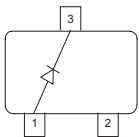


Silicon Switching Diode

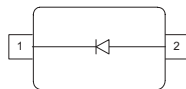
- For high-speed switching applications
- High breakdown voltage
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



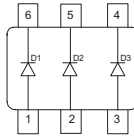
BAS21



BAS21-03W



BAS21U



Type	Package	Configuration	Marking
BAS21	SOT23	single	JSs
BAS21-03W	SOD323	single	D
BAS21U	SC74	parallel triple	JSs

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	200	V
Peak reverse voltage	V_{RM}	250	
Forward current	I_F	250	mA
Peak forward current	I_{FM}	625	
Peak forward current	I_{FM}	625	mA
Surge forward current, $t = 10 \mu\text{s}$	I_{FS}	4	A
Non-repetitive peak surge forward current	I_{FSM}	-	
Total power dissipation	P_{tot}		mW
BAS21, $T_S \leq 70^\circ\text{C}$		350	
BAS21-03W, $T_S \leq 124^\circ\text{C}$		250	
BAS21U, $T_S \leq 122^\circ\text{C}$		250	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

¹⁾Pb-containing package may be available upon special request

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}		K/W
BAS21		≤ 230	
BAS21-03W		≤ 105	
BAS21U		≤ 110	

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

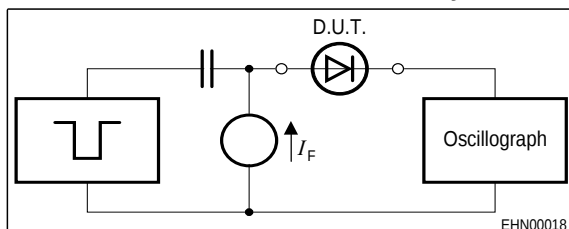
Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$	250	-	-	V
Reverse current $V_R = 200 \text{ V}$ $V_R = 200 \text{ V}, T_A = 150^\circ\text{C}$	I_R	-	-	0.1 100	μA
Forward voltage $I_F = 100 \text{ mA}$ $I_F = 200 \text{ mA}$	V_F	-	-	1 1.25	V

AC Characteristics

Diode capacitance $V_R = 0 \text{ V}, f = 1 \text{ MHz}$	C_T	-	-	5	pF
Reverse recovery time $I_F = 30 \text{ mA}, I_R = 30 \text{ mA}$, measured at $I_R = 3 \text{ mA}$, $R_L = 100 \Omega$	t_{rr}	-	-	50	ns

Test circuit for reverse recovery time


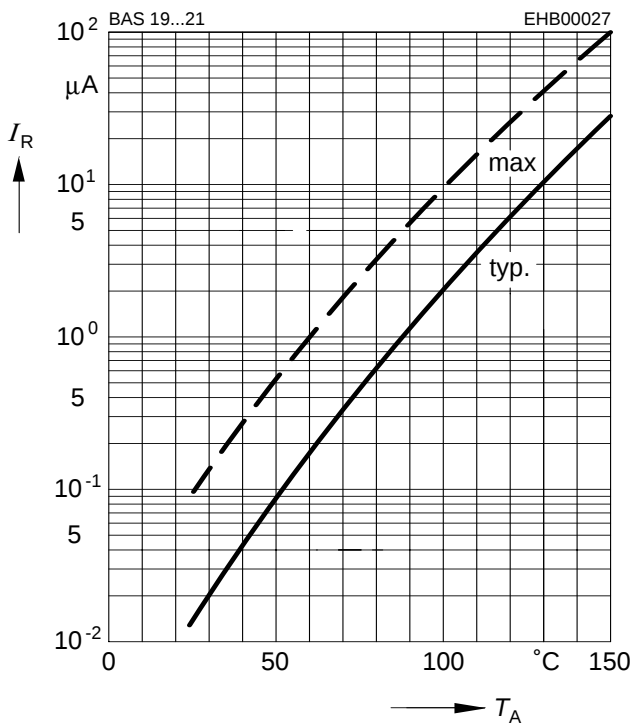
Puls generator: $t_p = 1 \mu\text{s}$, $D = 0.05$
 $t_r = 0.6 \text{ ns}$, $R_i = 50 \Omega$

Oscilloscope: $R = 50 \Omega$, $t_r = 0.35 \text{ ns}$, $C \leq 1 \text{ pF}$

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

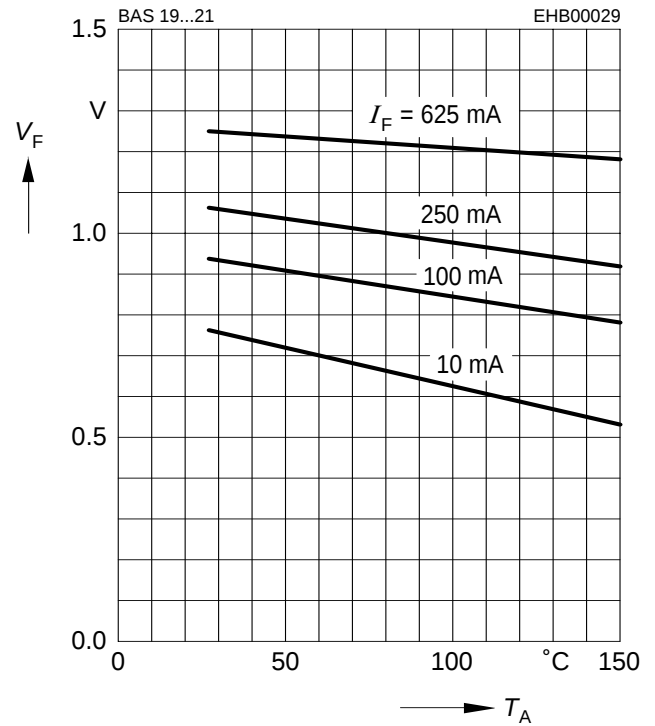
Reverse current $I_R = f(T_A)$

$V_R = 200V$

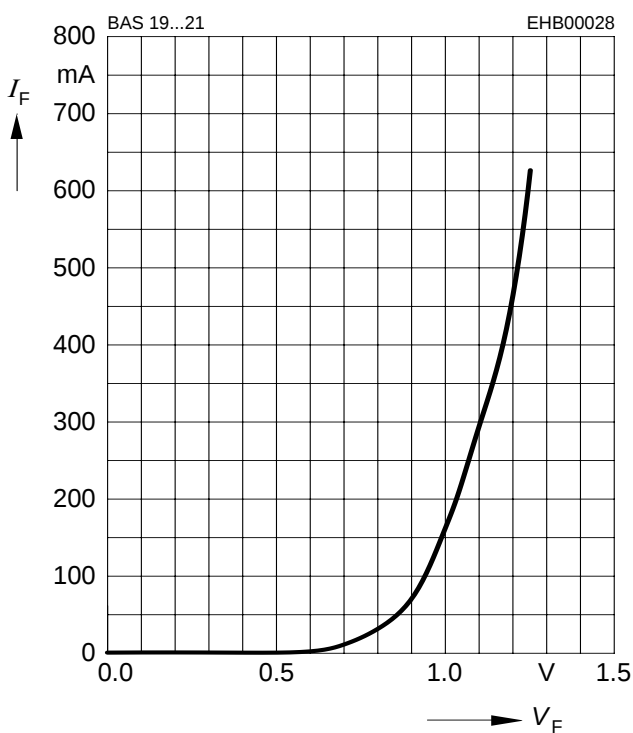


Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$

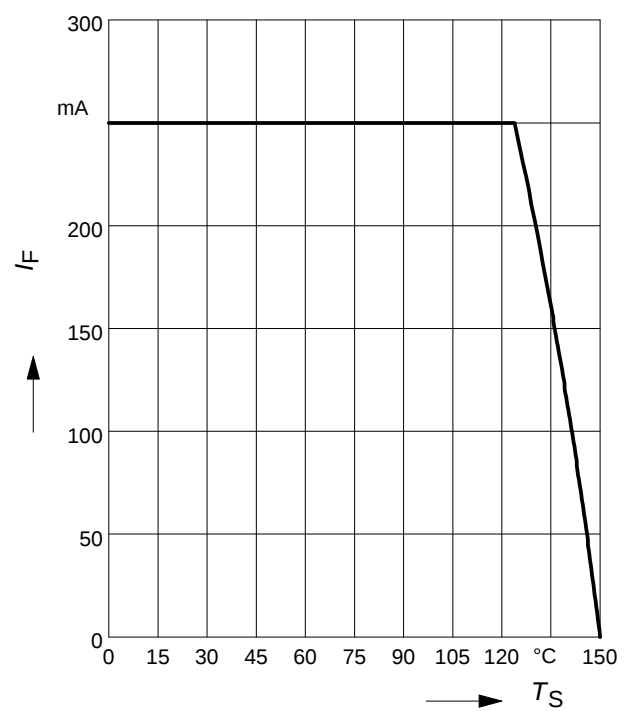


Forward current $I_F = f(V_F)$



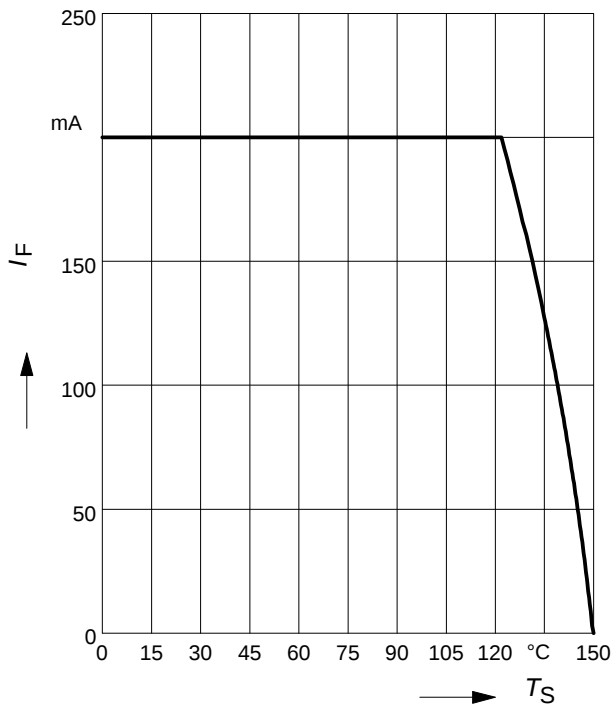
Forward current $I_F = f(T_S)$

BAS21-03W



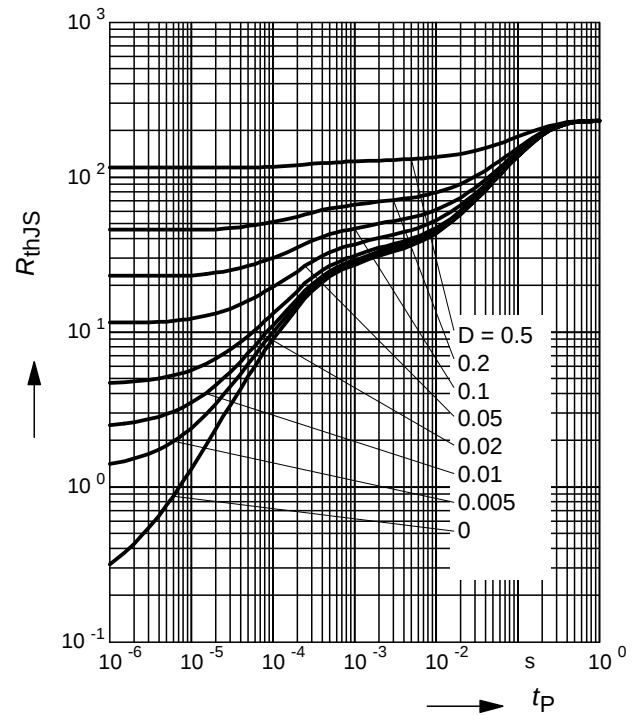
Forward current $I_F = f(T_S)$

BAS21U



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

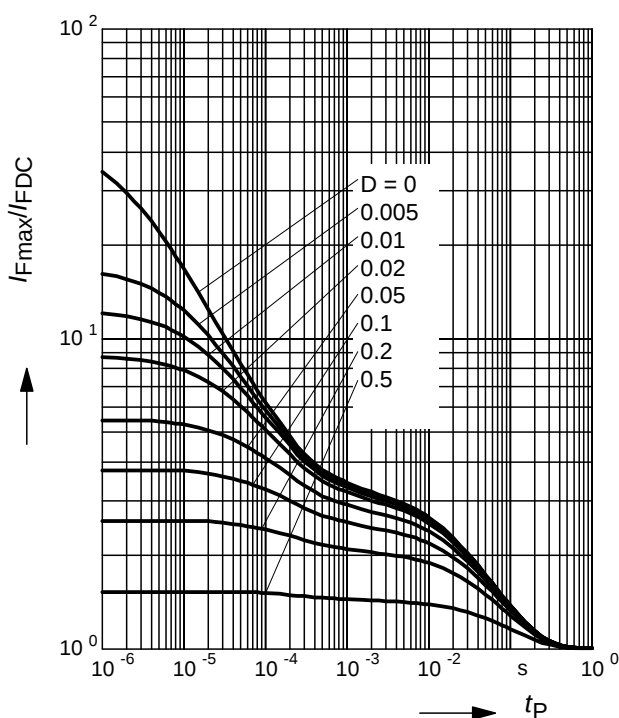
BAS21



Permissible Pulse Load

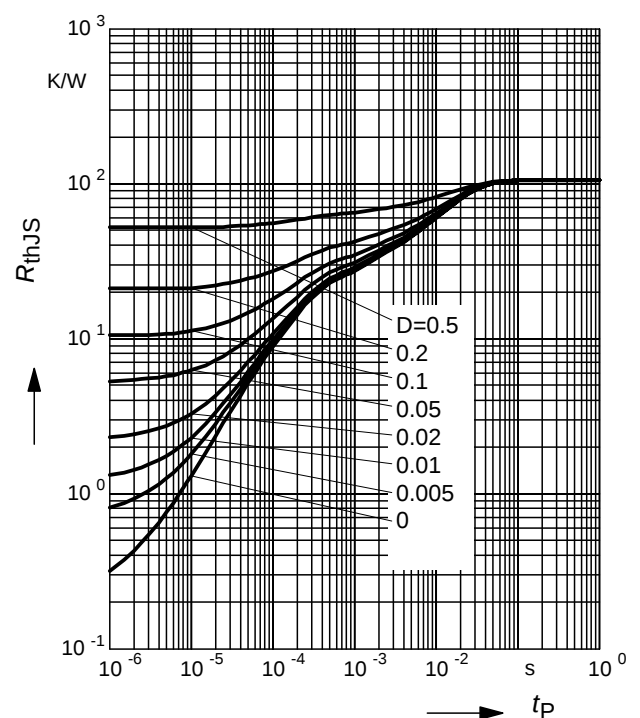
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS21



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

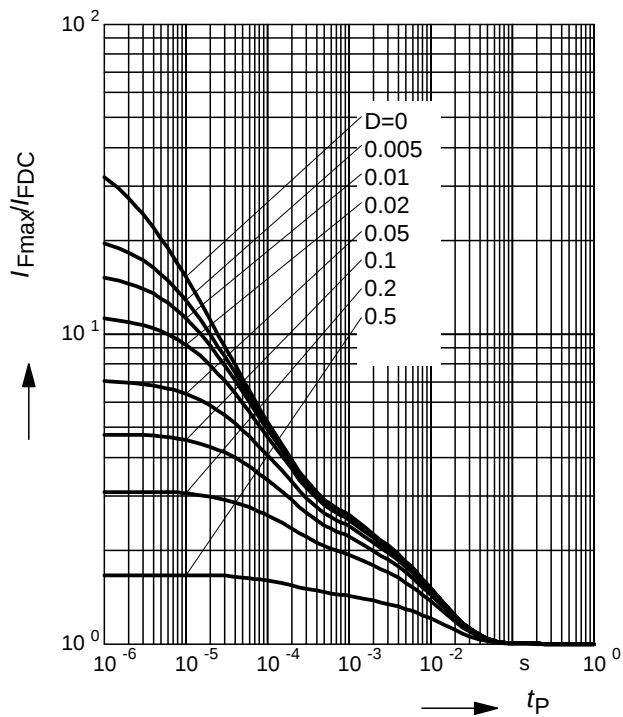
BAS21-03W



Permissible Pulse Load

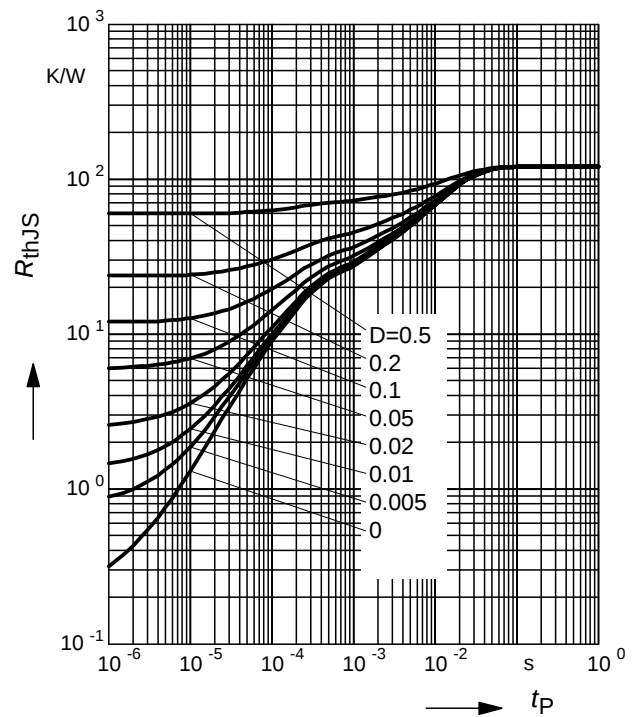
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAS21-03W



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

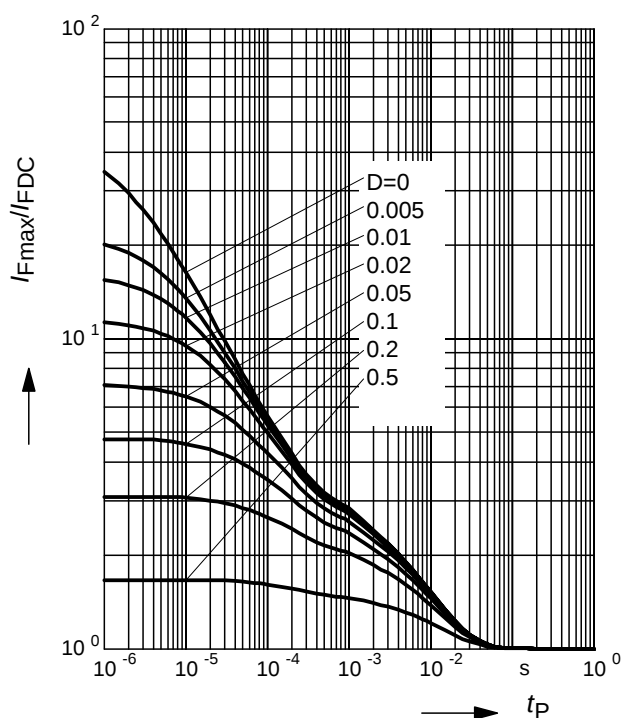
BAS21U



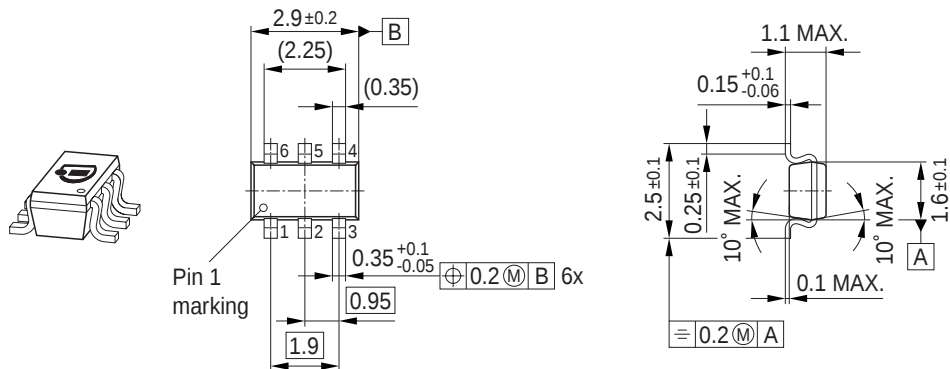
Permissible Pulse Load

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

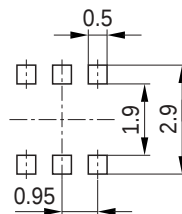
BAS21U



Package Outline

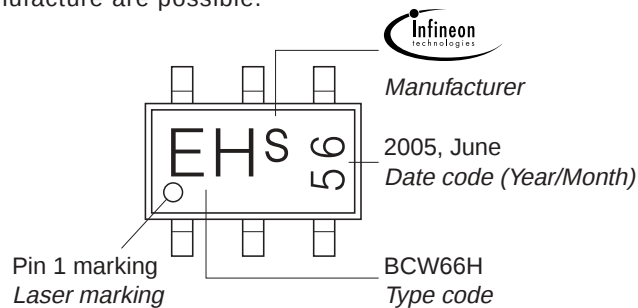


Foot Print



Marking Layout (Example)

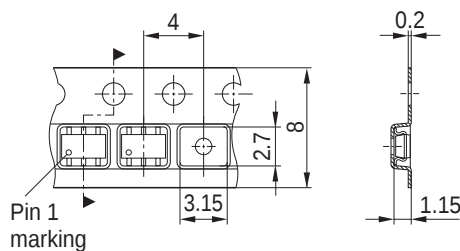
Small variations in positioning of Date code, Type code and Manufacture are possible.



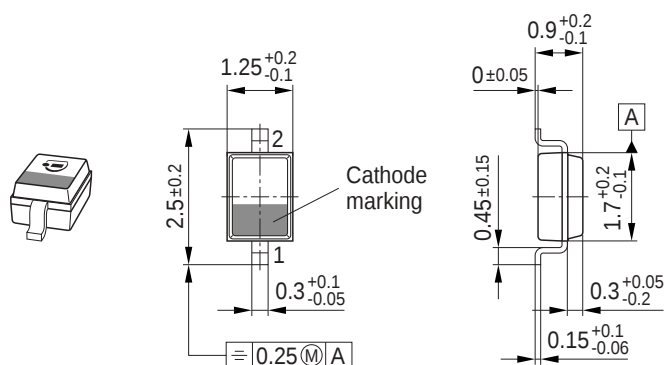
Standard Packing

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

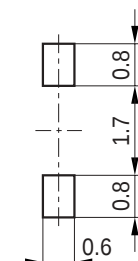
For symmetric types no defined Pin 1 orientation in reel.



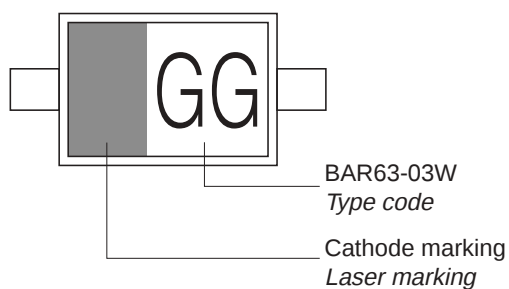
Package Outline



Foot Print

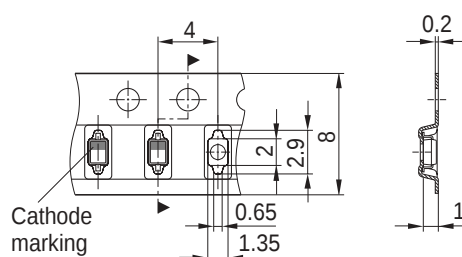


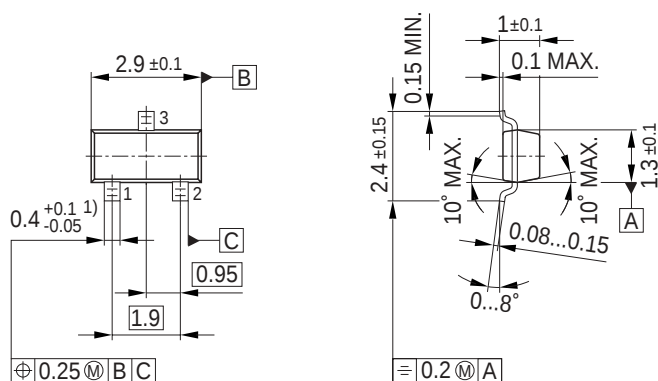
Marking Layout (Example)



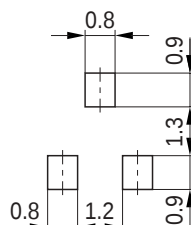
Standard Packing

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



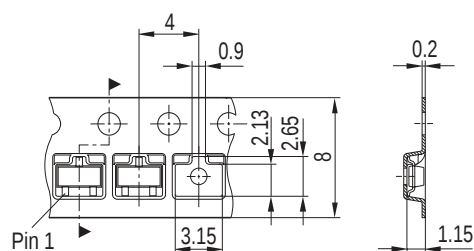


Foot Print



The diagram shows a top-down view of a BCW66 LED package. A rectangular label is centered on the package, containing the text "EHS" followed by the date code "05 06". The date code is split into two parts, "05" and "06", each with a small circle above it. The package has four pins: one at the top, one at the bottom left, and two at the bottom right. Lines connect labels to specific features: "Infineon" points to the top pin, "Manufacturer" points to the top pin, "2005, June" points to the "05" part of the date code, "Date code (YM)" points to the "06" part of the date code, "Pin 1" points to the bottom left pin, "BCW66" points to the bottom right pins, and "Type code" points to the bottom right pins.

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



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