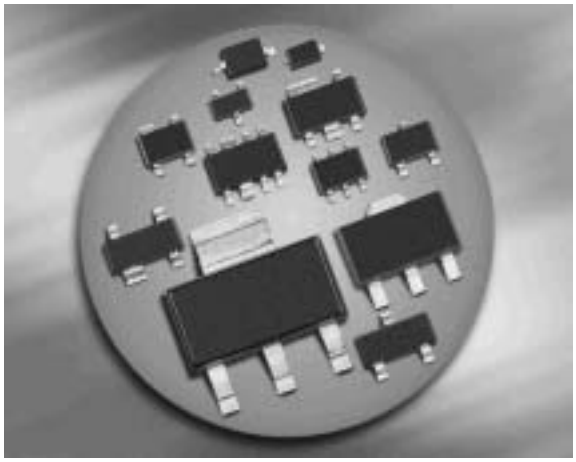
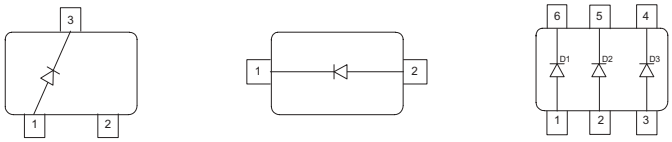
Silicon Switching Diode

- For high-speed switching applications
- High breakdown voltage
- Pb-free (RoHS compliant) package[1)]
- 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°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 µs	I_{FS}	4	A
Non-repetitive peak surge forward current	I_{FSM}	-	
Total power dissipation	P_{tot}		mW
BAS21, $T_S \leq$ 70°C		350	
BAS21-03W, $T_S \leq$ 124°C		250	
BAS21U, $T_S \leq$ 122°C		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

[1]Pb-containing package may be available upon special request

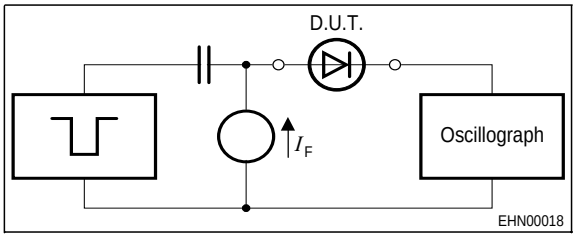
Thermal Resistance

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°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 100 µA	$V_{(BR)}$	250	-	-	V
Reverse current	I_R				µA
V_R = 200 V		-	-	0.1	
V_R = 200 V, T_A = 150 °C		-	-	100	
Forward voltage	V_F				V
I_F = 100 mA		-	-	1	
I_F = 200 mA		-	-	1.25	
AC Characteristics					
Diode capacitance V_R = 0 V, f = 1 MHz	C_T	-	-	5	pF
Reverse recovery time I_F = 30 mA, I_R = 30 mA, measured at I_R = 3mA, R_L = 100 Ω	t_{rr}	-	-	50	ns

Test circuit for reverse recovery time



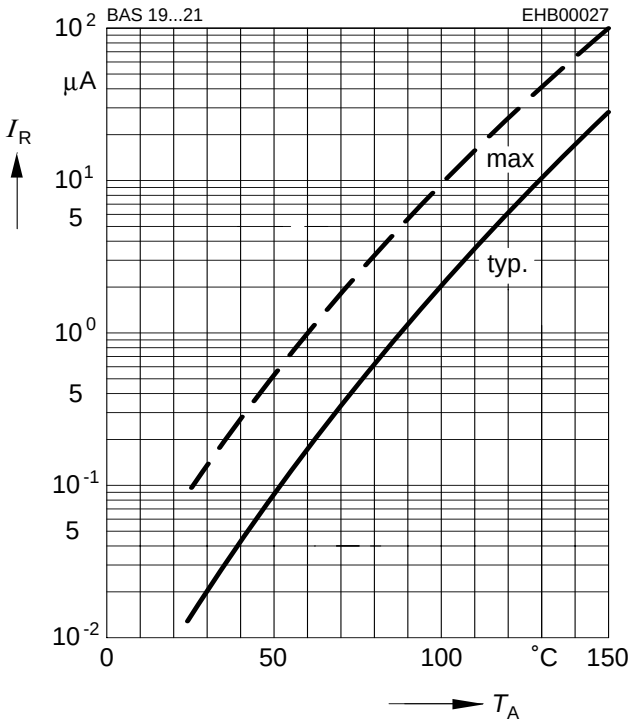
Puls generator: t_p = 1µs, D = 0.05
t_r = 0.6ns, R_i = 50Ω

Oscillograph: R = 50Ω , t_r = 0.35ns, C ≤ 1pF

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

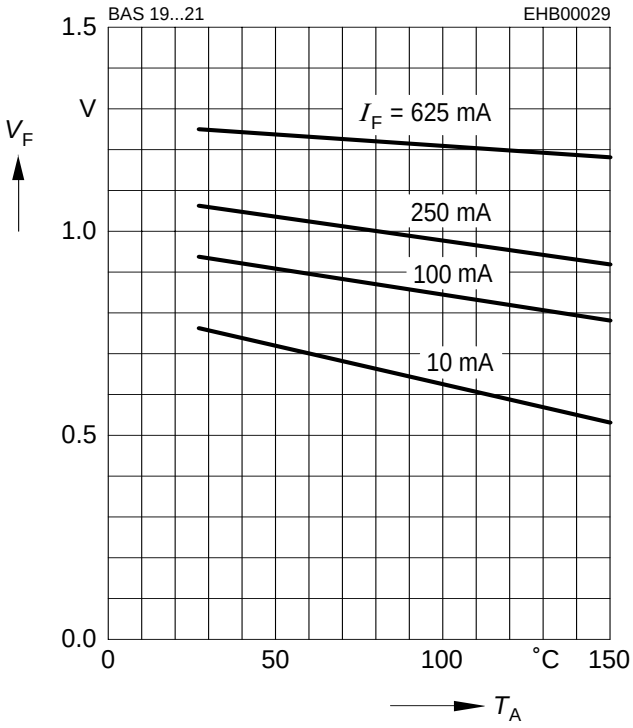
Reverse current $I_R = f(T_A)$

V_R = 200V

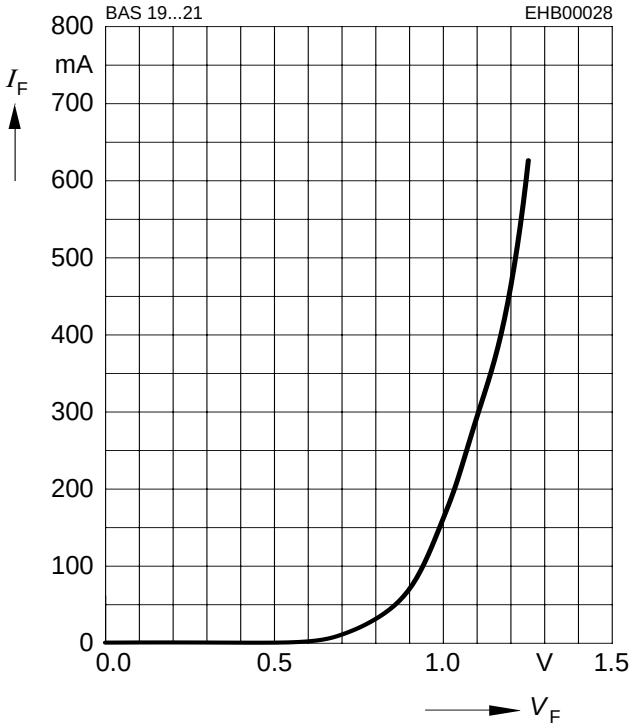


Forward Voltage $V_F = f(T_A)$

I_F = Parameter

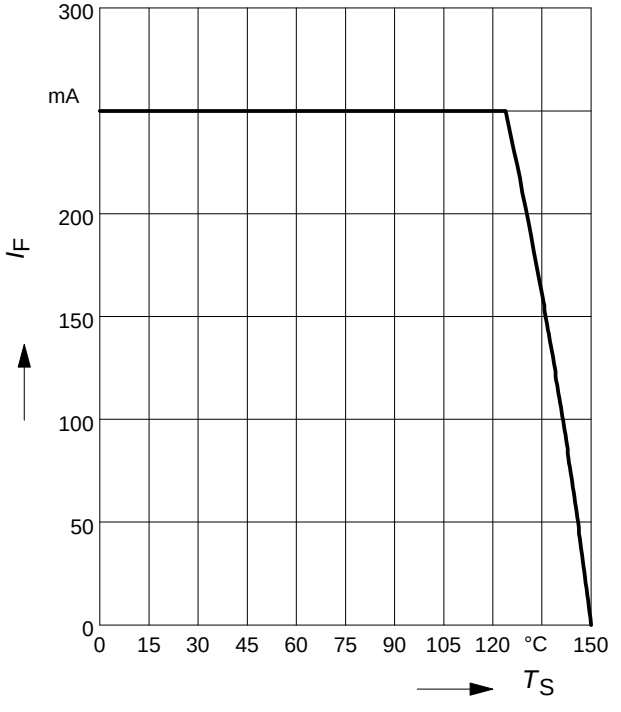


Forward current $I_F = f(V_F)$



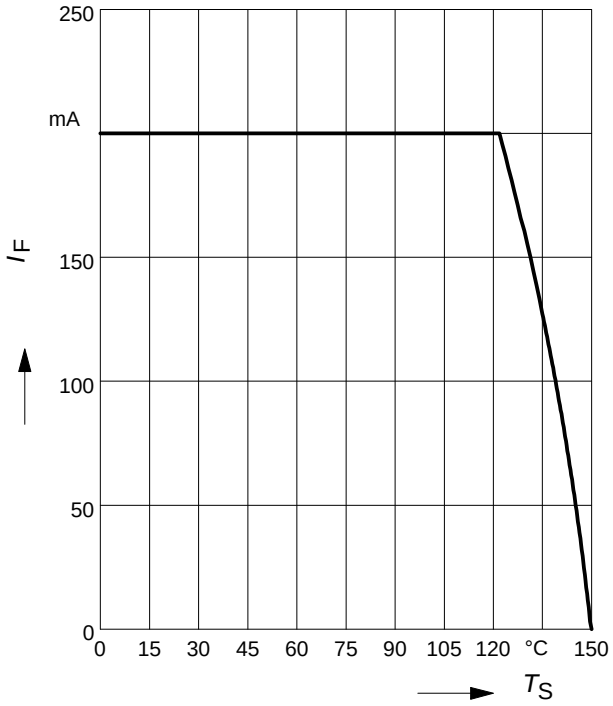
Forward current $I_F = f(T_S)$

BAS21-03W



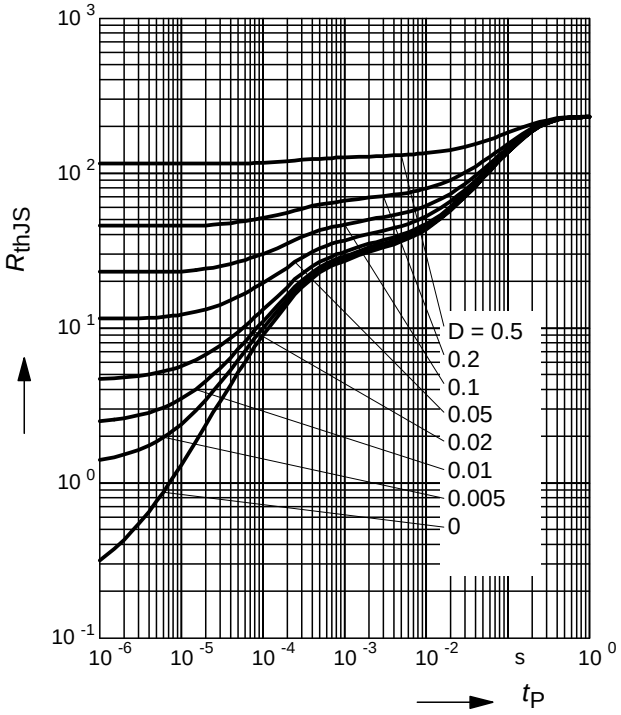
Forward current $I_F = f(T_S)$

BAS21U



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

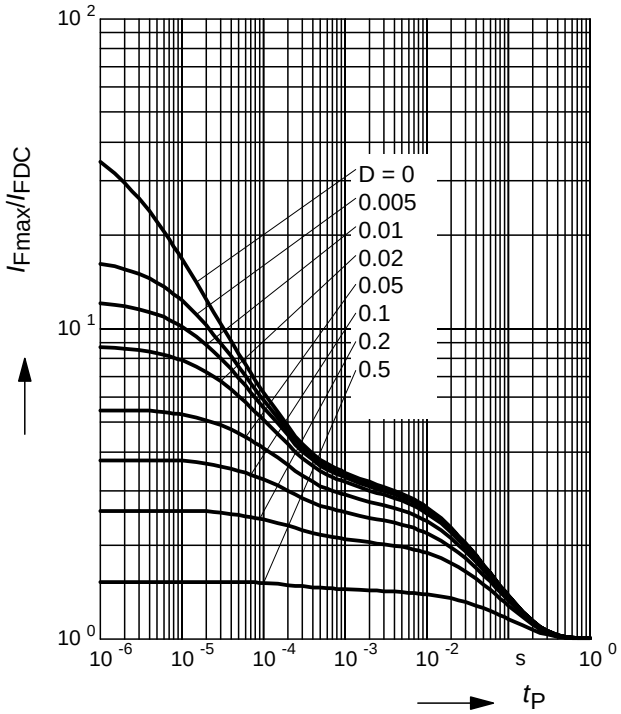
BAS21



Permissible Pulse Load

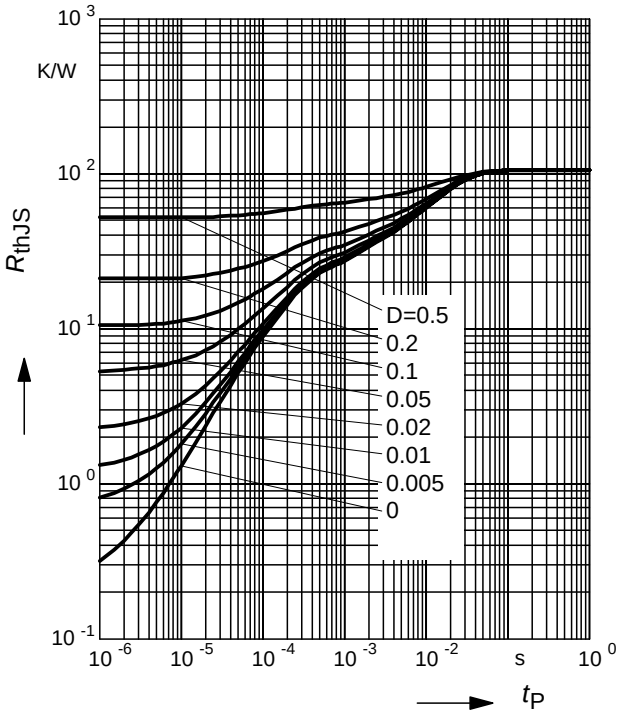
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS21



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

BAS21-03W



Permissible Pulse Load

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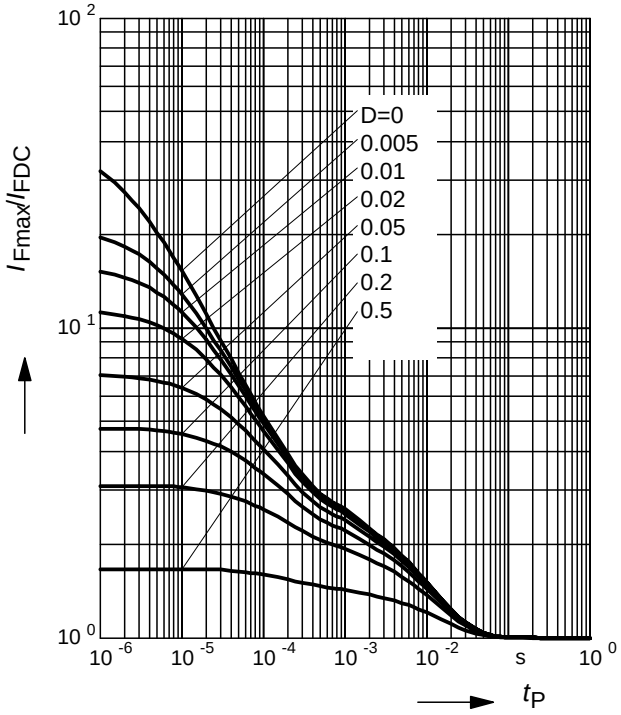
BAS21-03W



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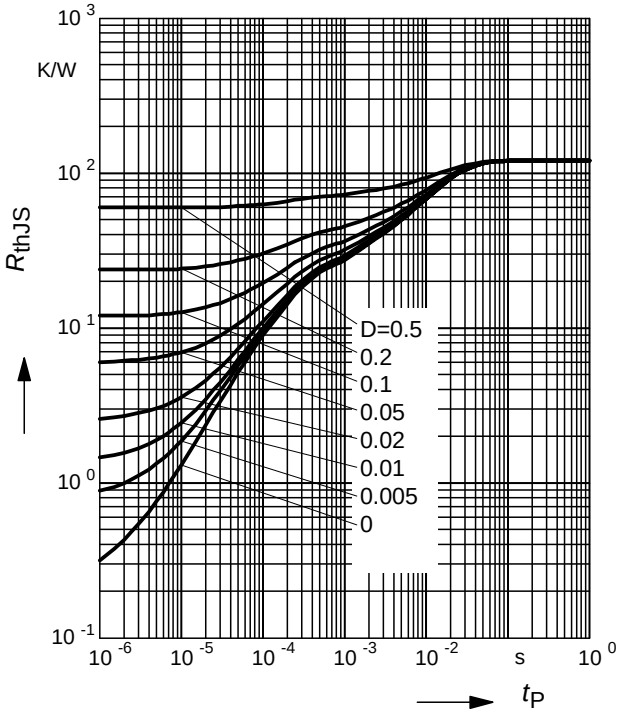
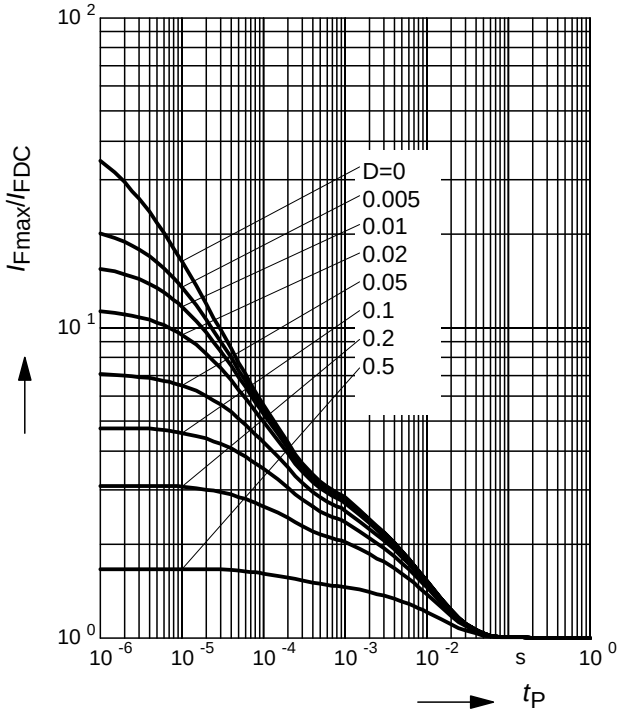
BAS21U



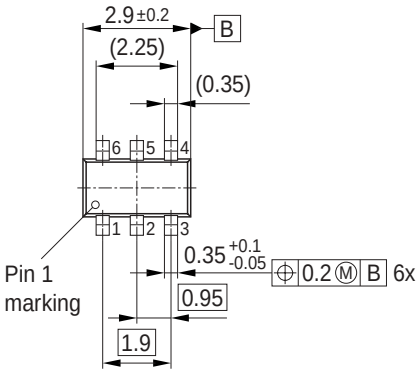
Permissible Pulse Load

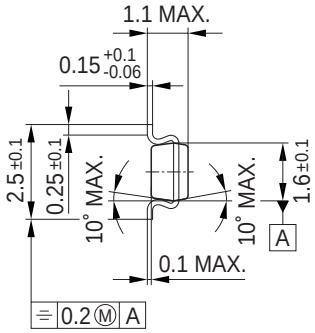
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS21U

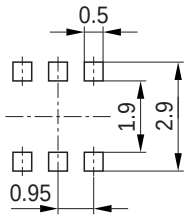


Package Outline



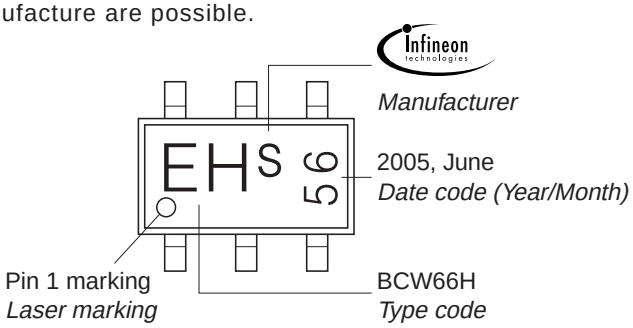


Foot Print



Marking Layout (Example)

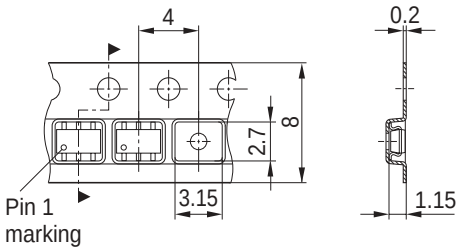
Small variations in positioning of
Date code, Type code and Manufacture are possible.



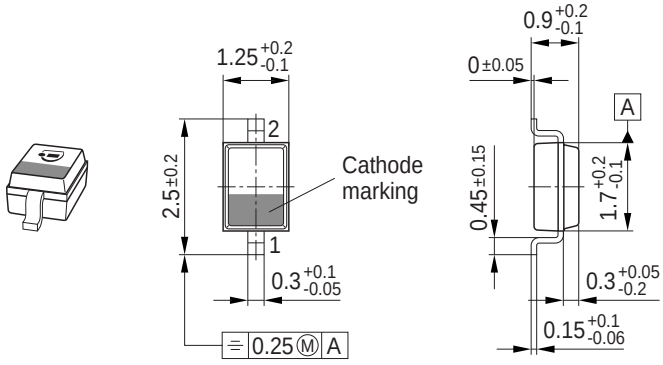
Standard Packing

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

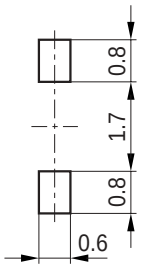
For symmetric types no defined Pin 1 orientation in reel.



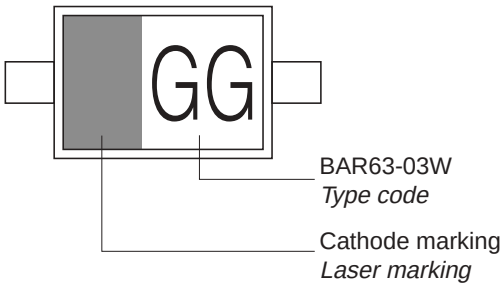
Package Outline



Foot Print



Marking Layout (Example)



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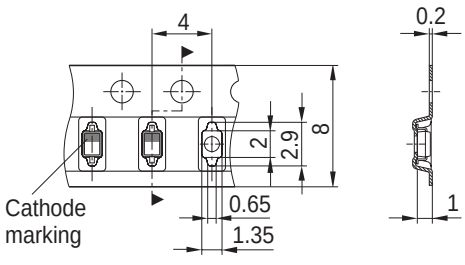
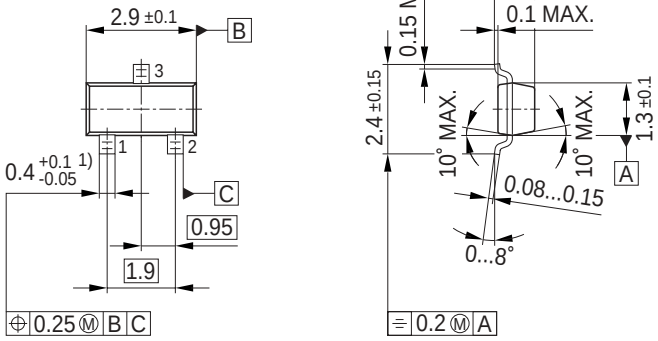
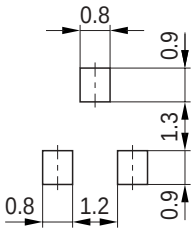


Package Outline



1) Lead width can be 0.6 max. in dambar area

Foot Print



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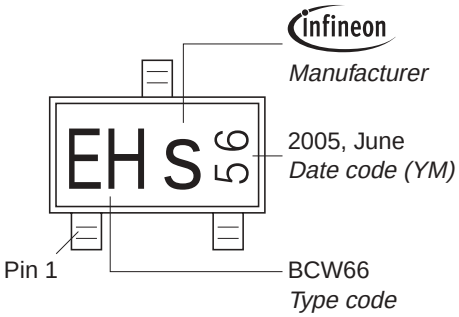

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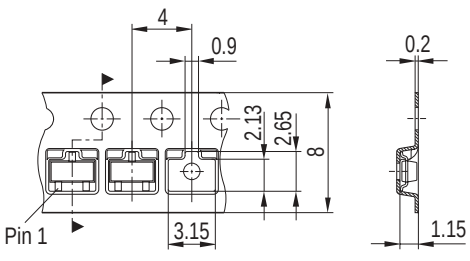

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