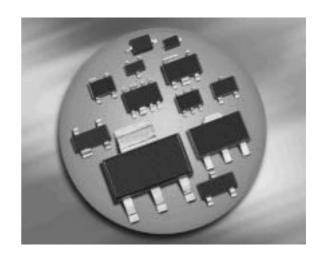


Silicon Switching Diode

- For high-speed switching applications
- High breakdown voltage
- Pb-free (RoHS compliant) package 1)
- Qualified according AEC Q101





BAS21 BAS21-03W BAS21U







Туре	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, $t = 10 \mu s$	I _{FS}	4	А
Non-repetitive peak surge forward current	I _{FSM}	-	
Total power dissipation	P _{tot}		mW
BAS21, <i>T</i> _S ≤ 70°C		350	
BAS21-03W, <i>T</i> _S ≤ 124°C		250	
BAS21U, <i>T</i> _S ≤ 122°C		250	
Junction temperature	$T_{\rm j}$	150	°C
Storage temperature	T _{stg}	-65 150	

¹Pb-containing package may be available upon special request



Thermal Resistance

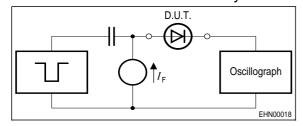
Parameter	Symbol	Value	Unit
Junction - soldering point1)	R _{thJS}		K/W
BAS21		≤ 230	
BAS21-03W		≤ 105	
BAS21U		≤ 110	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics			_		
Breakdown voltage	$V_{(BR)}$	250	-	-	V
$I_{(BR)} = 100 \mu A$, ,				
Reverse current	I _R				μΑ
$V_{R} = 200 \text{ V}$		-	-	0.1	
$V_{R} = 200 \text{ V}, T_{A} = 150 ^{\circ}\text{C}$		-	-	100	
Forward voltage	V _F				V
$I_{\rm F} = 100 \text{mA}$		_	-	1	
$I_{\rm F} = 200 \text{ mA}$		-	-	1.25	
AC Characteristics					
Diode capacitance	C _T	_	-	5	pF
$V_{R} = 0 \text{ V}, f = 1 \text{ MHz}$					
Reverse recovery time	t _{rr}	-	-	50	ns
$I_{\rm F}$ = 30 mA, $I_{\rm R}$ = 30 mA, measured at $I_{\rm R}$ = 3mA,					
$R_{\rm L}$ = 100 Ω					

2

Test circuit for reverse recovery time



Puls generator: $t_p = 1 \mu s$, D = 0.05

 $t_{\rm r}$ = 0.6ns, $R_{\rm i}$ = 50 Ω

Oscillograph: $R = 50\Omega$, $t_{\rm r} = 0.35{\rm ns},\ C \le 1{\rm pF}$

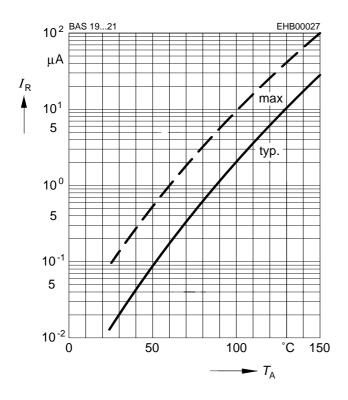
2007-04-19

 $^{^{\}rm 1}{\rm For}$ calculation of $R_{\rm thJA}$ please refer to Application Note Thermal Resistance



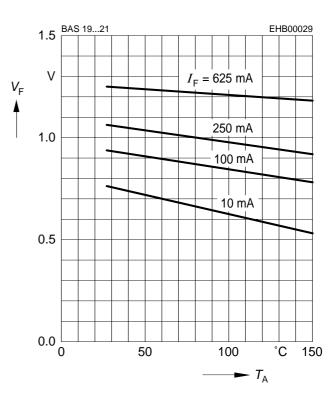
Reverse current $I_R = f(T_A)$

 $V_{R} = 200 V$

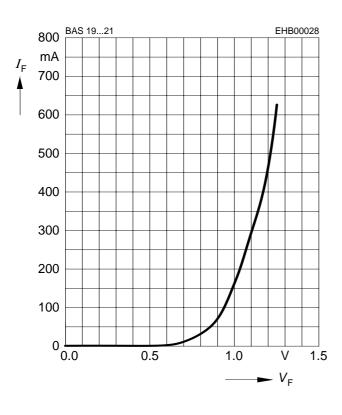


Forward Voltage $V_F = f(T_A)$

 $I_{\mathsf{F}} = \mathsf{Parameter}$

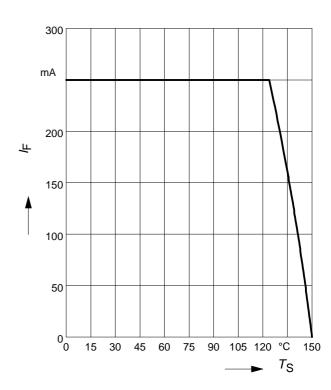


Forward current $I_F = f(V_F)$



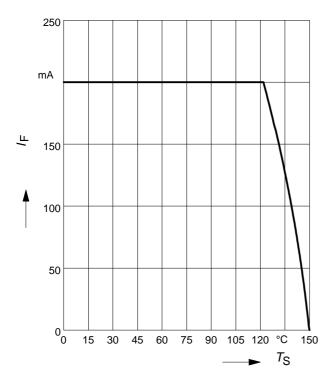
Forward current $I_F = f(T_S)$

BAS21-03W

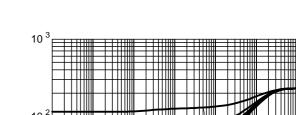


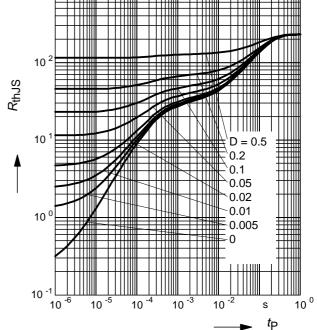


Forward current $I_F = f(T_S)$ BAS21U



Permissible Puls Load $R_{thJS} = f(t_p)$ BAS21

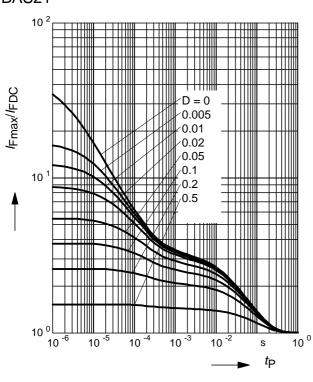




Permissible Pulse Load

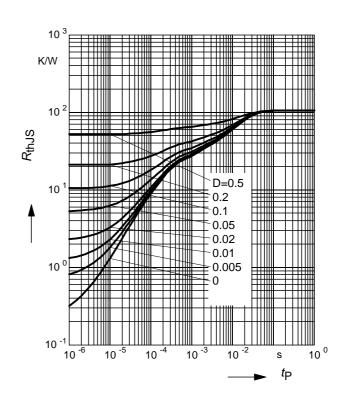
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAS21



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

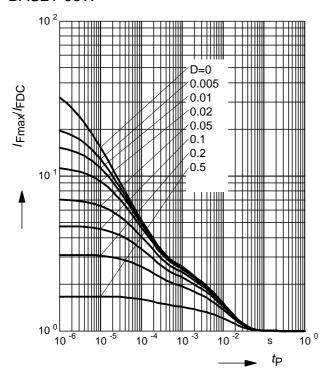
BAS21-03W





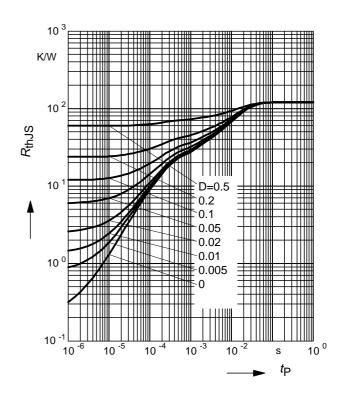
Permissible Pulse Load

 $I_{\text{Fmax}}/I_{\text{FDC}} = f(t_{\text{p}})$ BAS21-03W



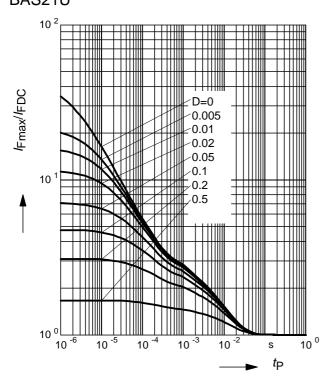
Permissible Puls Load $R_{thJS} = f(t_p)$

BAS21U



Permissible Pulse Load

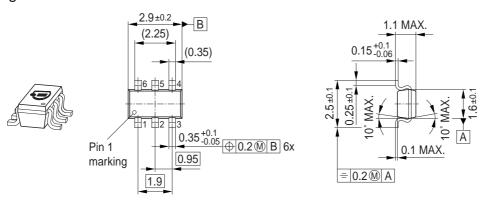
 $I_{\text{Fmax}}/I_{\text{FDC}} = f(t_{\text{p}})$ BAS21U



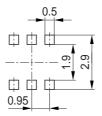
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Package Outline

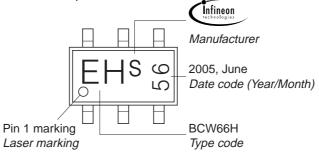


Foot Print



Marking Layout (Example)

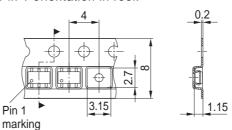
Small variations in positioning of Date code, Type code and Manufacture are possible.



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.

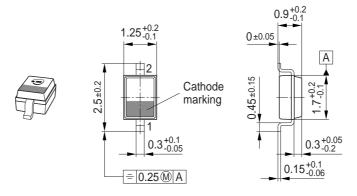


6

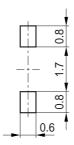
2007-04-19



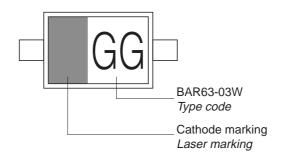
Package Outline



Foot Print

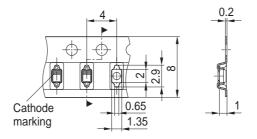


Marking Layout (Example)



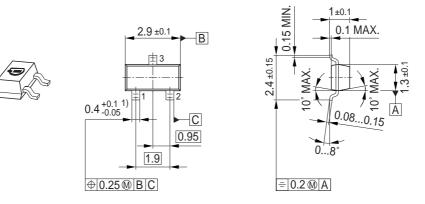
Standard Packing

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



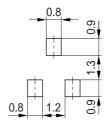


Package Outline

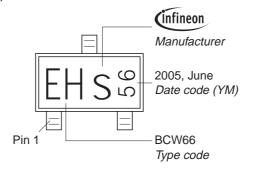


1) Lead width can be 0.6 max. in dambar area

Foot Print

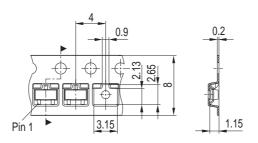


Marking Layout (Example)



Standard Packing

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





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2007-04-19