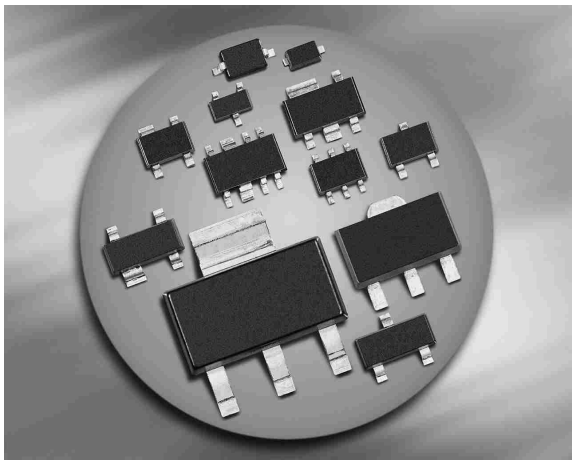
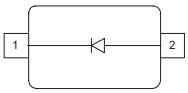
Silicon Schottky Diode

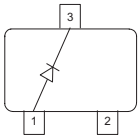
- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101[1)]



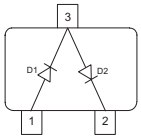
BAS140W
BAS40-02L



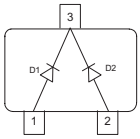
BAS40



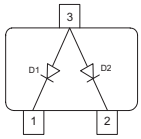
BAS40-04



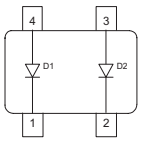
BAS40-05
BAS40-05W



BAS40-06
BAS40-06W



BAS40-07
BAS40-07W



ESD (**E**lectro**s**tatic **d**ischarge) 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 °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 $t \leq$ 10ms	I_{FSM}	200	
Total power dissipation	P_{tot}		mW
BAS140W, T_S ≤ 113°C		250	
BAS40, BAS40-07, T_S ≤ 81°C		250	
BAS40-02L, T_S ≤ 127°C		250	
BAS40-04, BAS40-06, T_S ≤ 56°C		250	
BAS40-06W, T_S ≤ 106°C		250	
BAS40-05, T_S ≤ 31°C		250	
BAS40-05W, T_S ≤ 98°C		250	
BAS40-07W, T_S ≤ 118°C		250	
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)

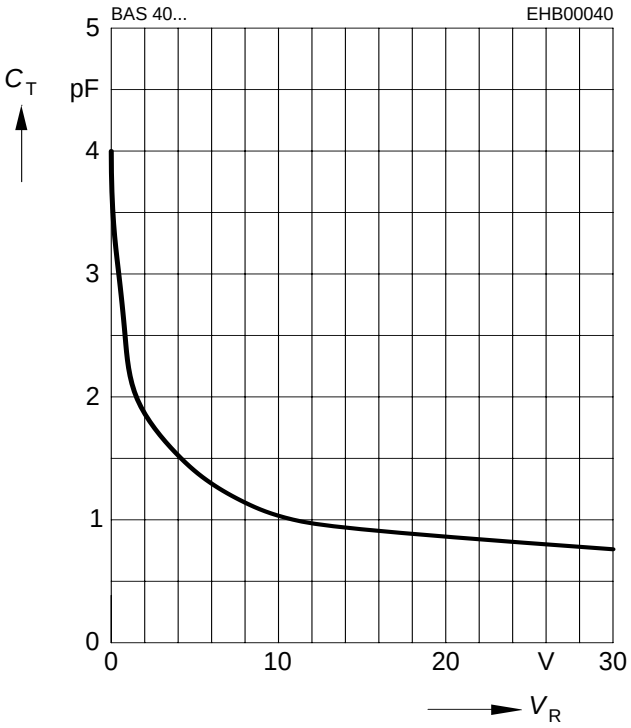
Electrical Characteristics at T_A = 25°C, unless otherwise specified

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

[1] ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

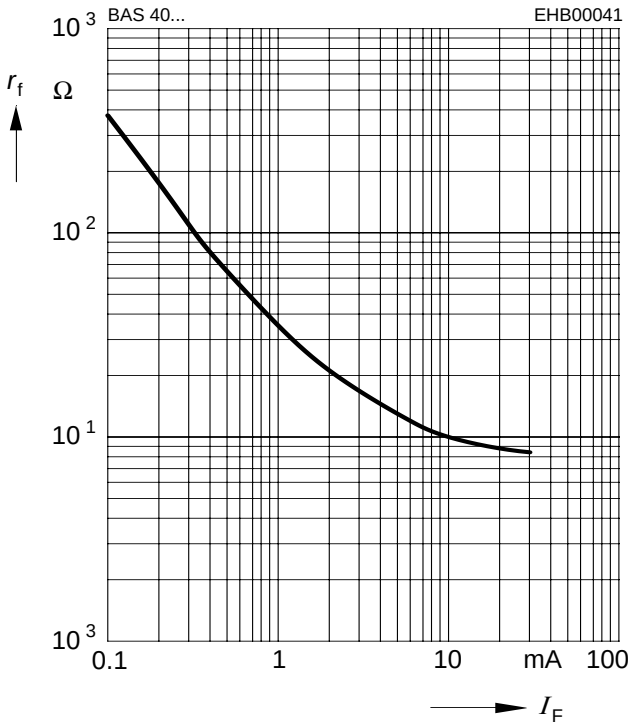
Diode capacitance $C_T = f(V_R)$

f = 1MHz



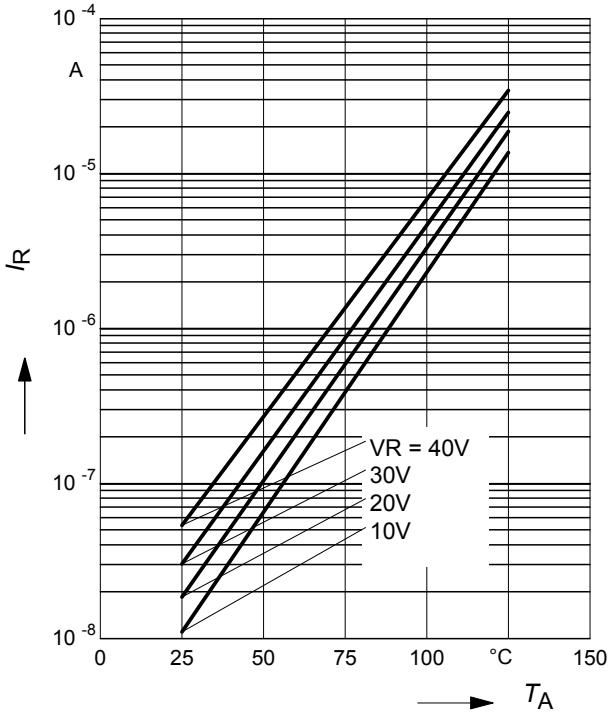
Forward resistance $r_f = f(I_F)$

f = 10 kHz



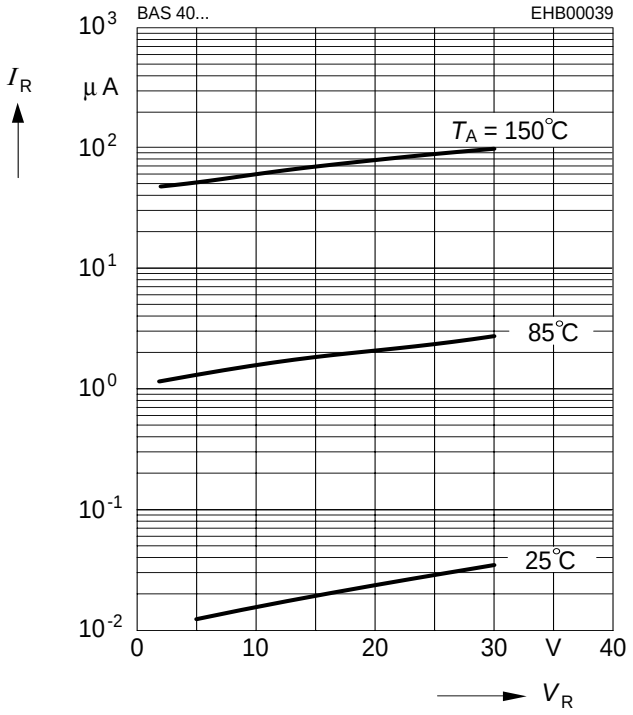
Reverse current $I_R = f(T_A)$

V_R = Parameter



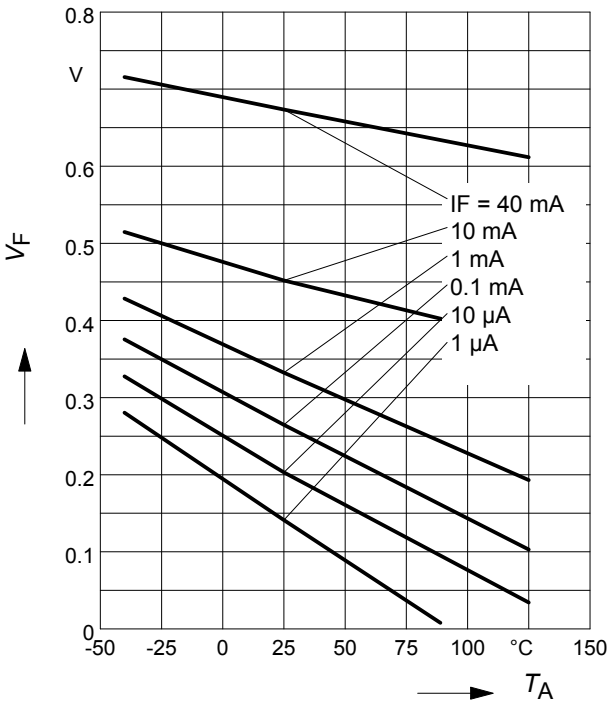
Reverse current $I_R = f(V_R)$

T_A = Parameter



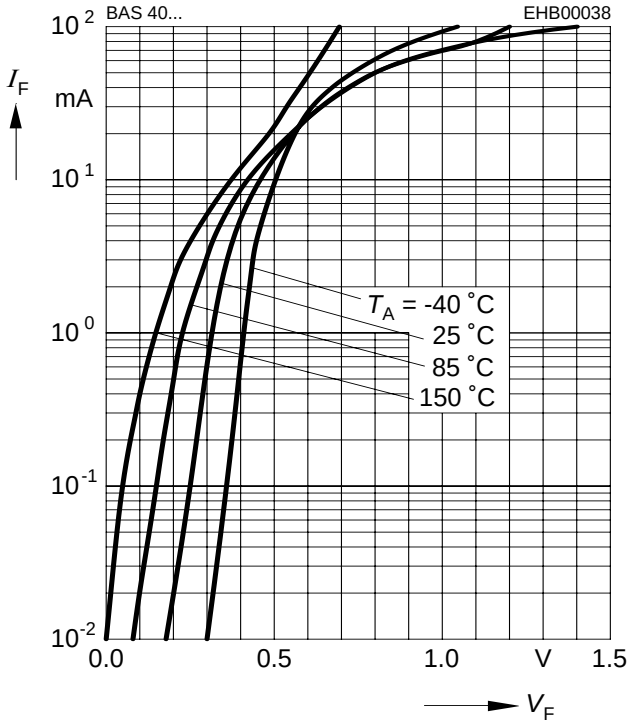
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



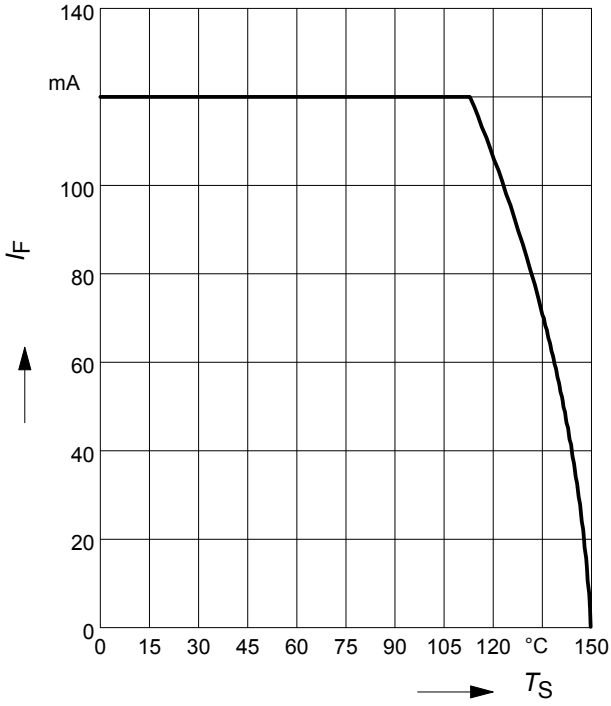
Forward current $I_F = f(V_F)$

T_A = Parameter



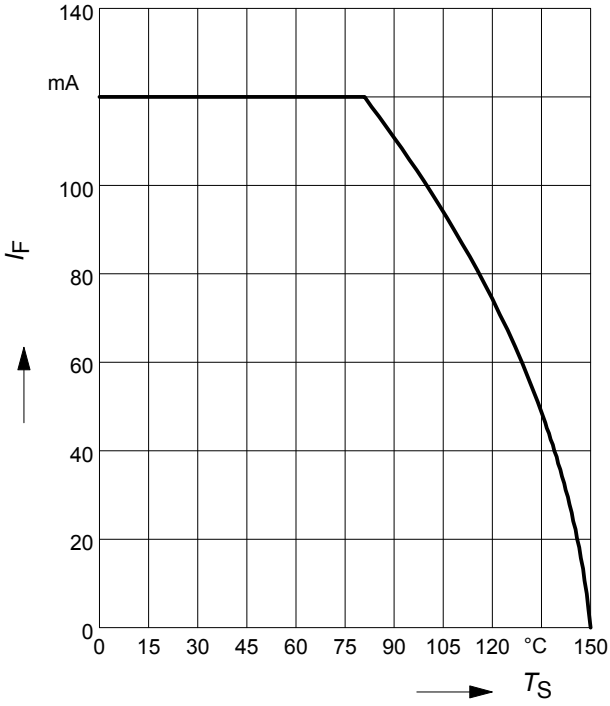
Forward current $I_F = f(T_S)$

BAS140W

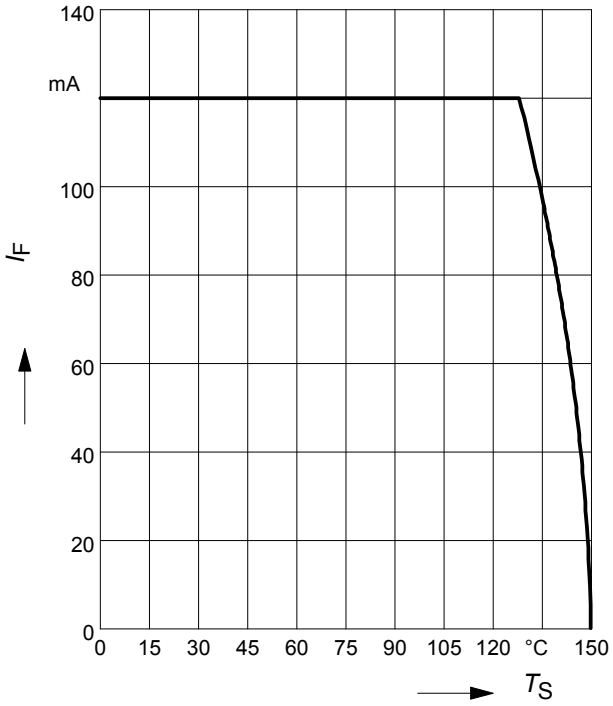


Forward current $I_F = f(T_S)$

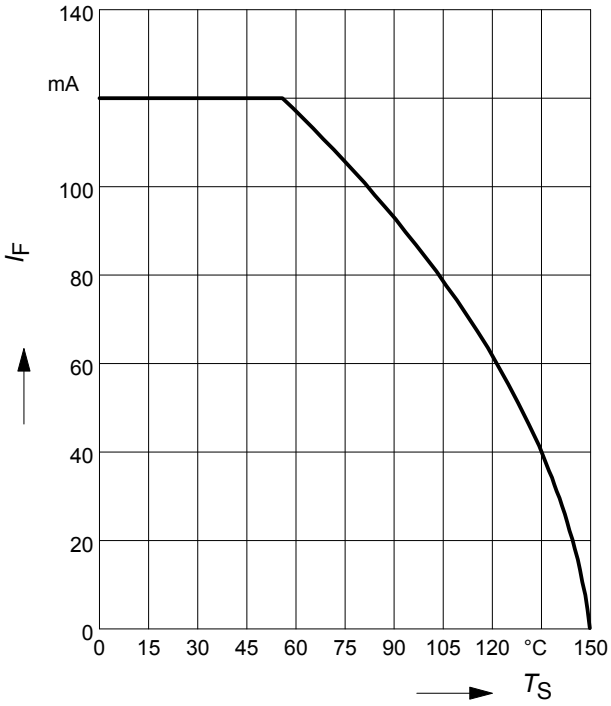
BAS40, BAS40-07



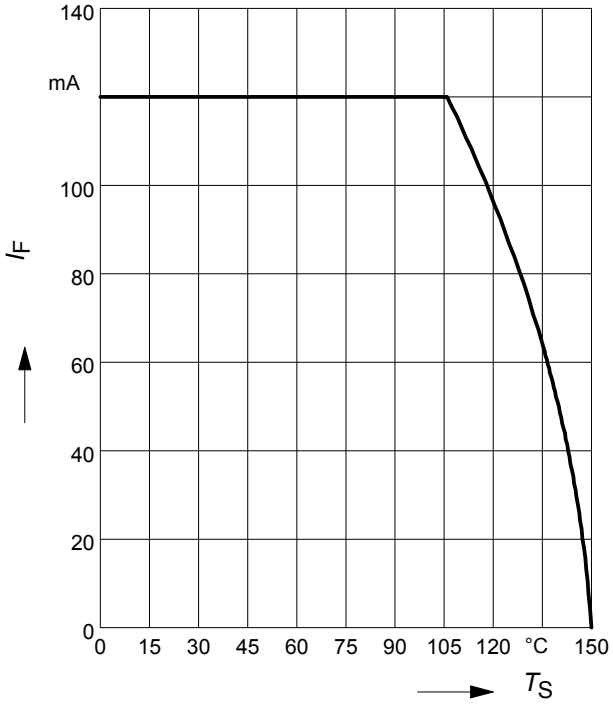
Forward current $I_F = f(T_S)$
BAS40-02L



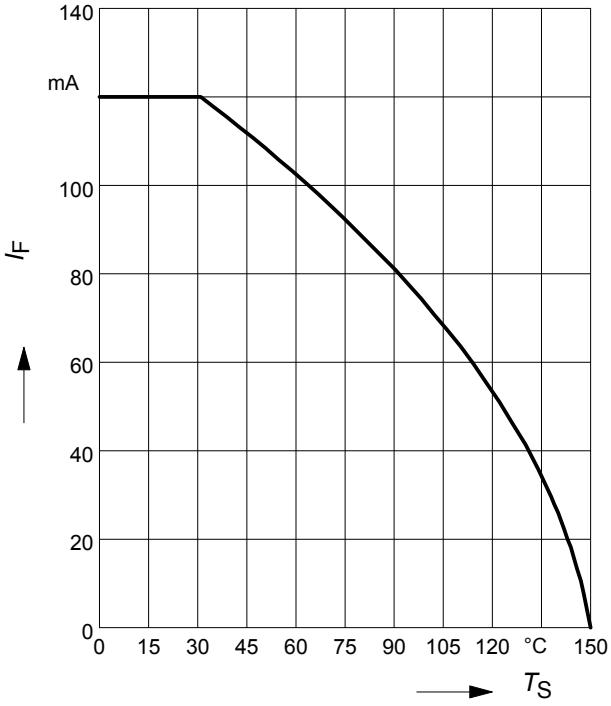
Forward current $I_F = f(T_S)$
BAS40-04, BAS40-06



Forward current $I_F = f(T_S)$
BAS40-06W

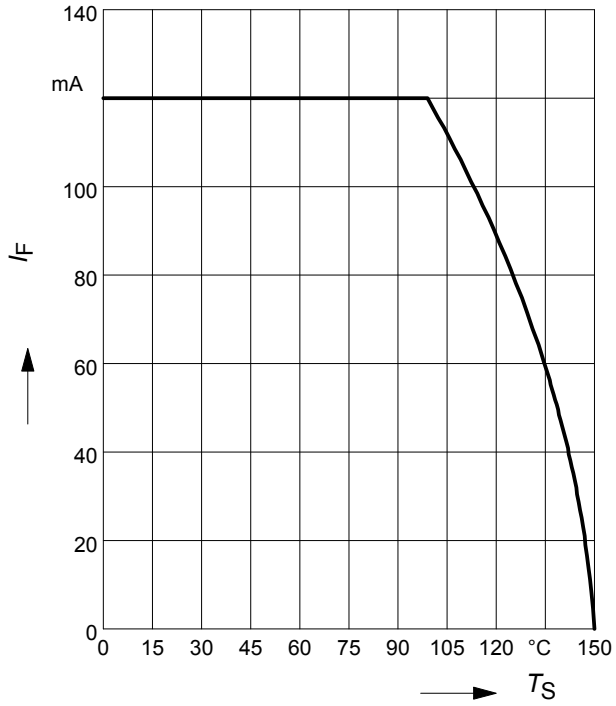


Forward current $I_F = f(T_S)$
BAS40-05



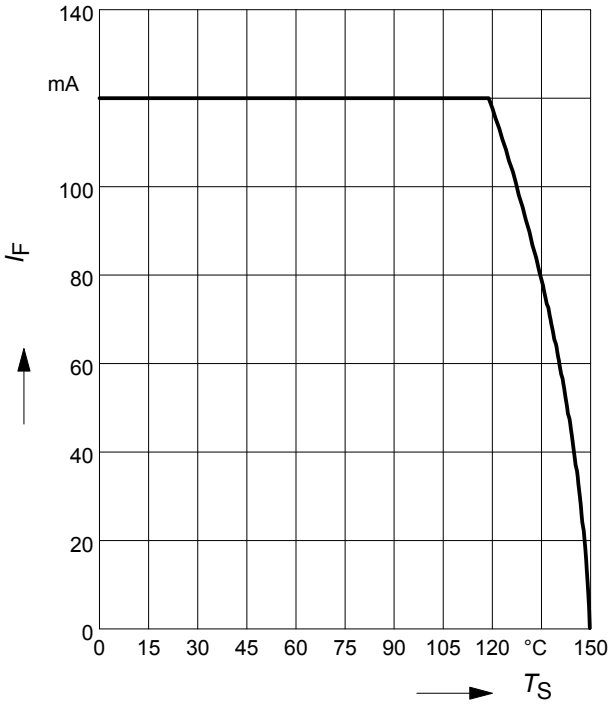
Forward current $I_F = f(T_S)$

BAS40-05W



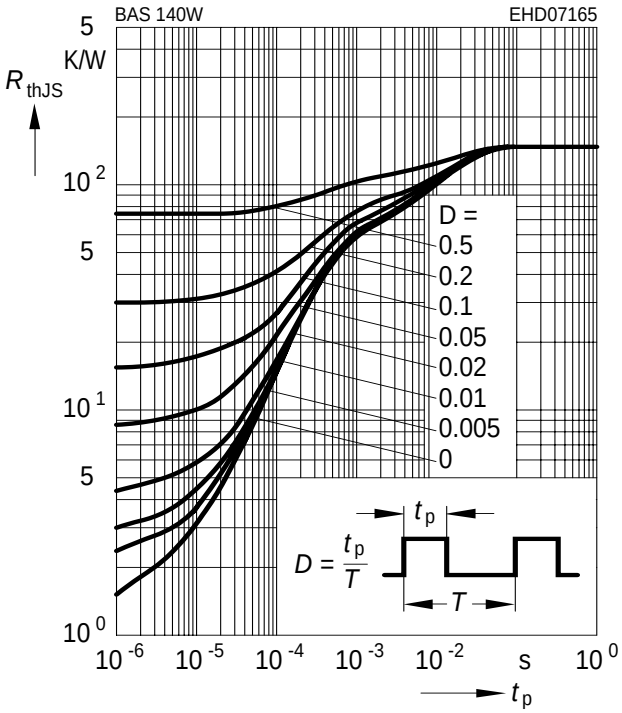
Forward current $I_F = f(T_S)$

BAS40-07W



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

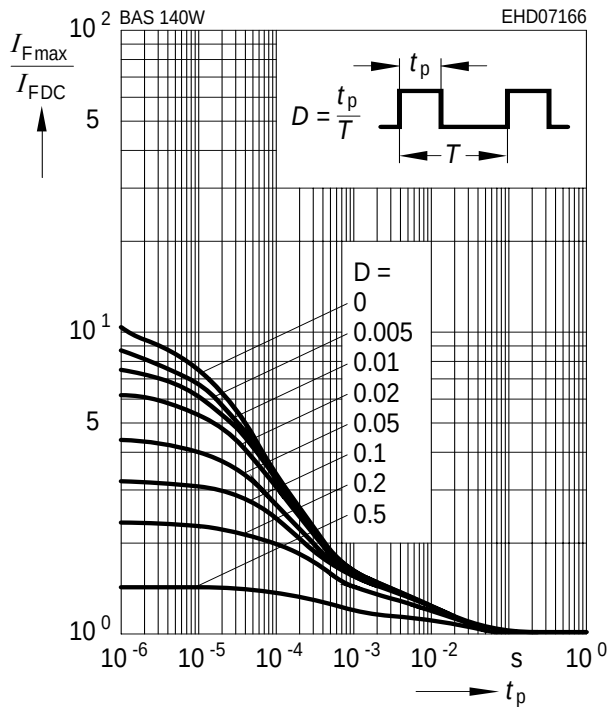
BAS140W



Permissible Pulse Load

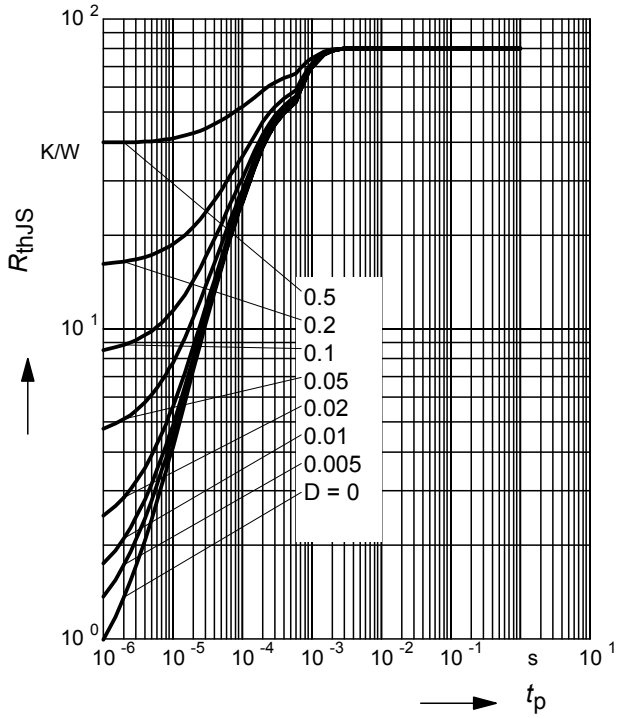
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS140W



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

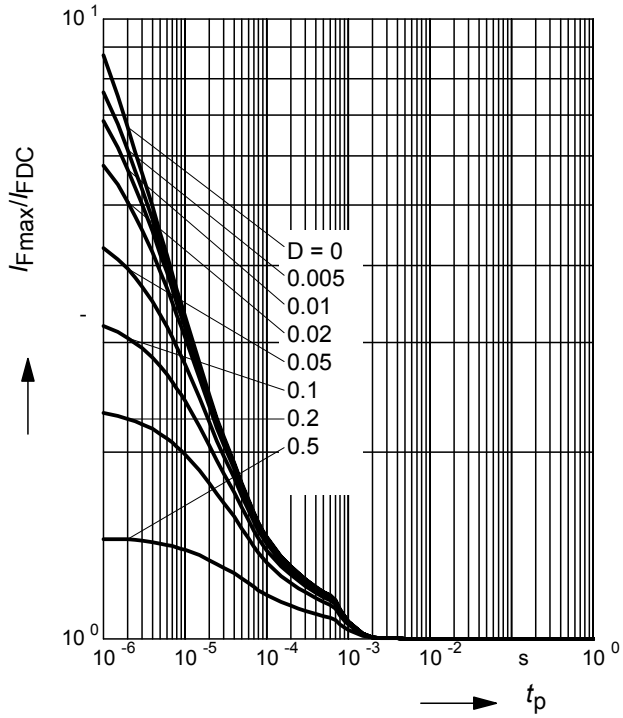
BAS40-02L



Permissible Pulse Load

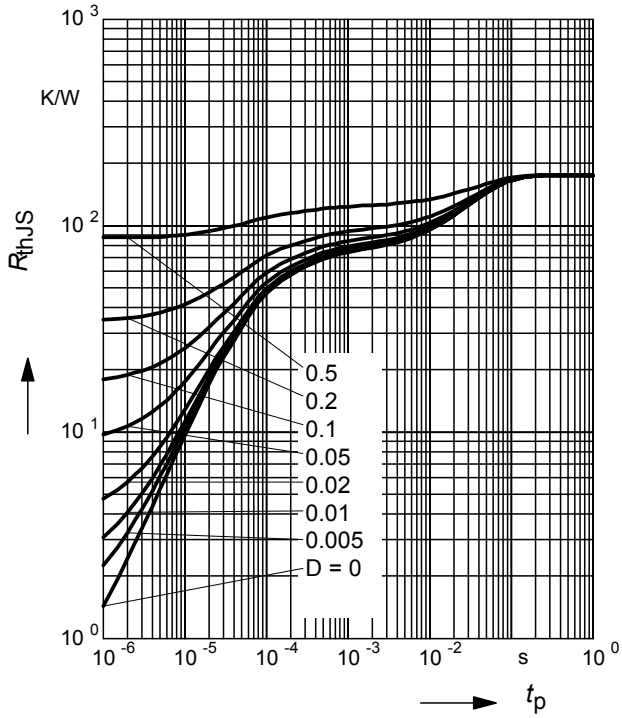
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS40-02L



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

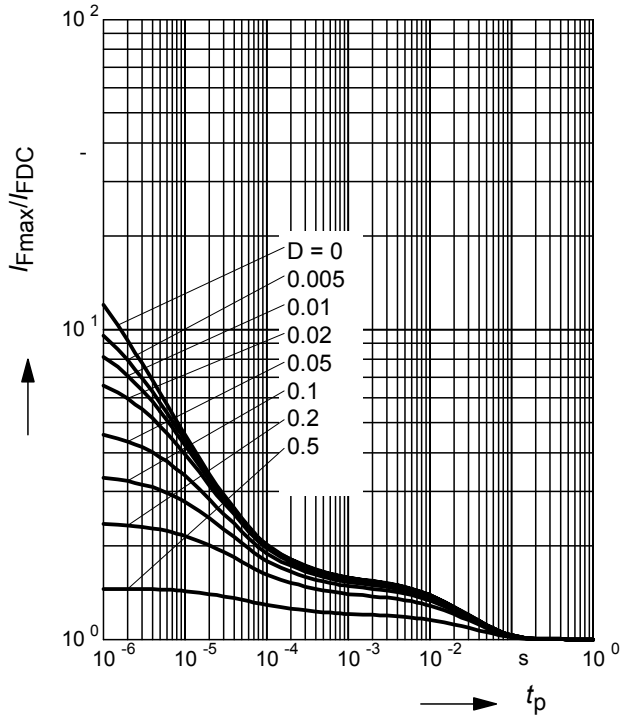
BAS40-06W



Permissible Pulse Load

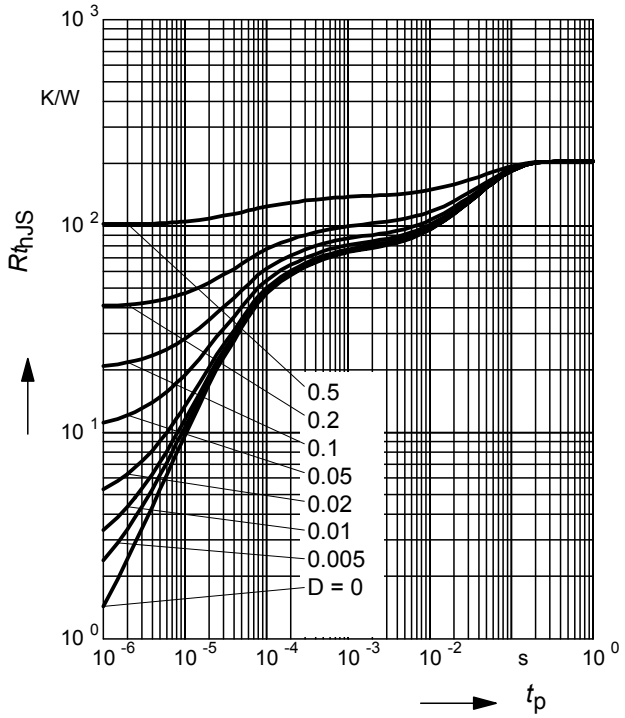
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS40-06W



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

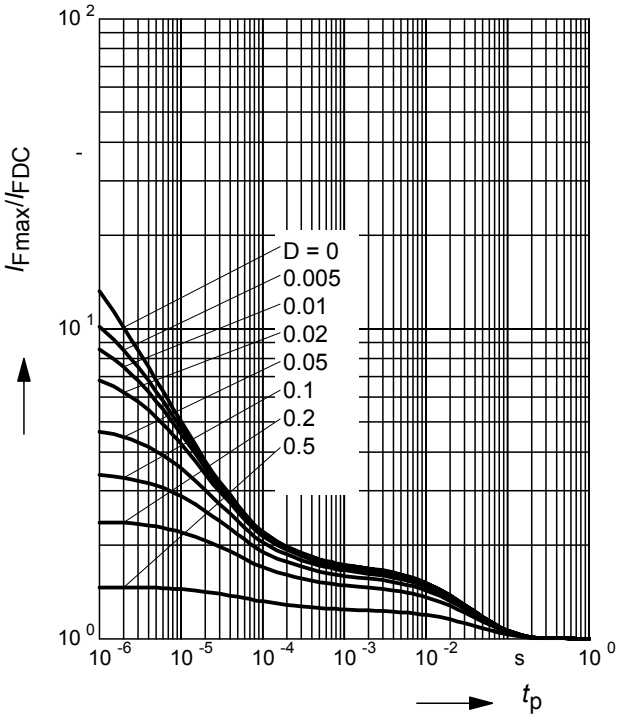
BAS40-05W



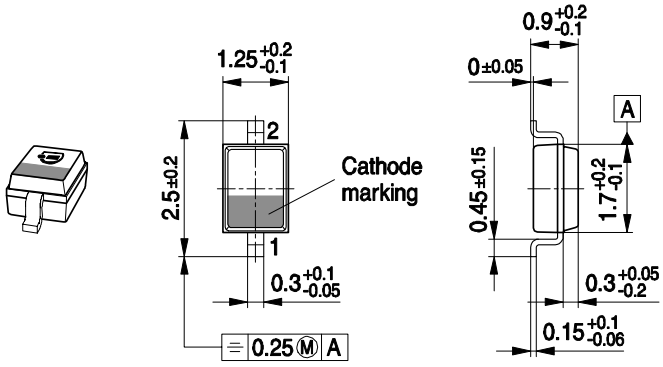
Permissible Pulse Load

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

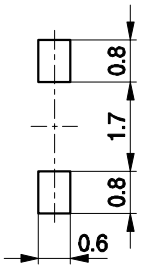
BAS40-05W



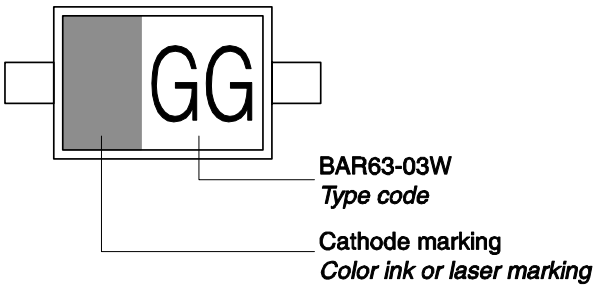
Package Outline



Foot Print

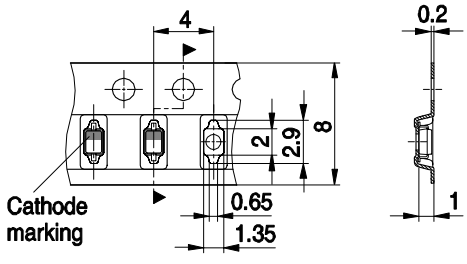


Marking Layout (Example)

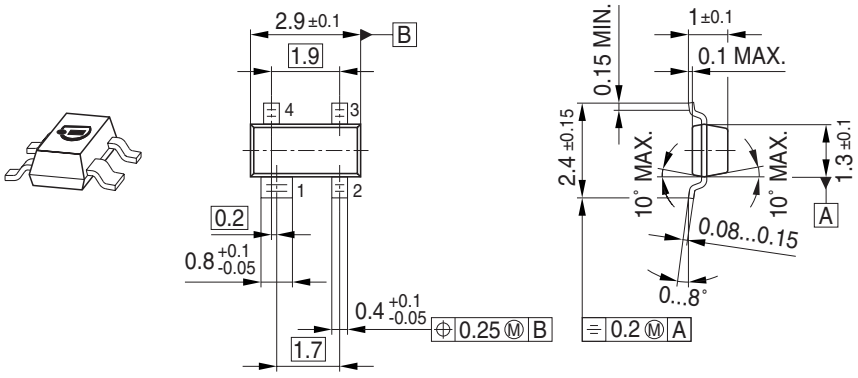


Standard Packing

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



Package Outline



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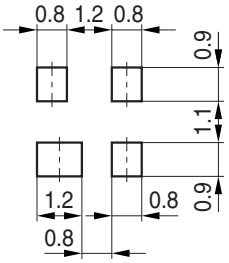
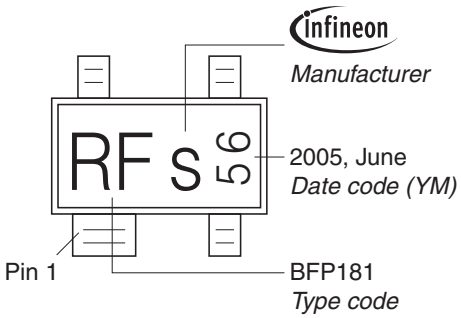


Marking Layout (Example)



Standard Packing

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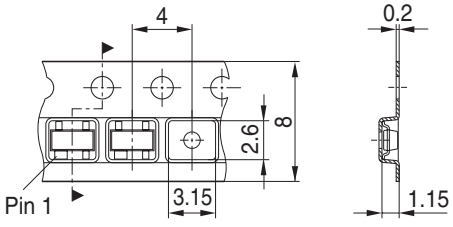
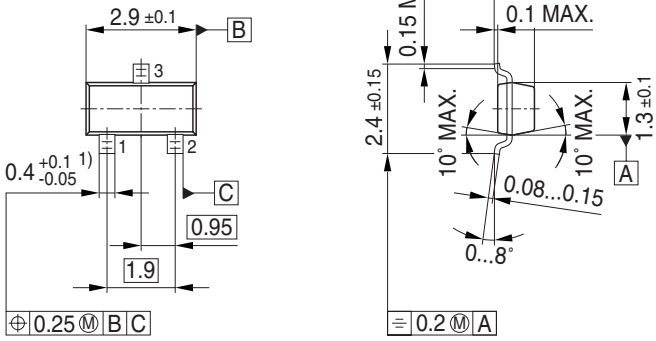
Reel ø330 mm = 10.000 Pieces/Reel

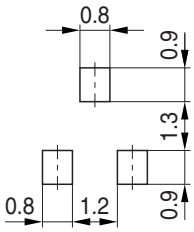


Package Outline

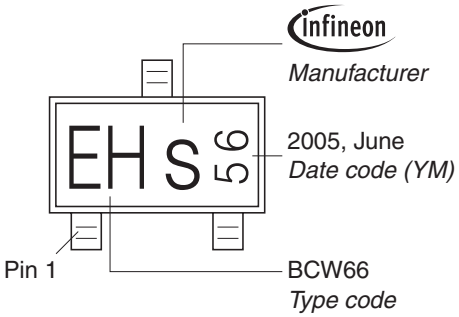


1) Lead width can be 0.6 max. in dambar area

Foot Print

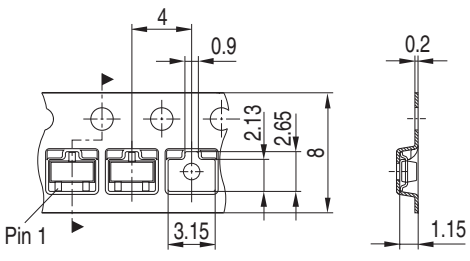


Marking Layout (Example)

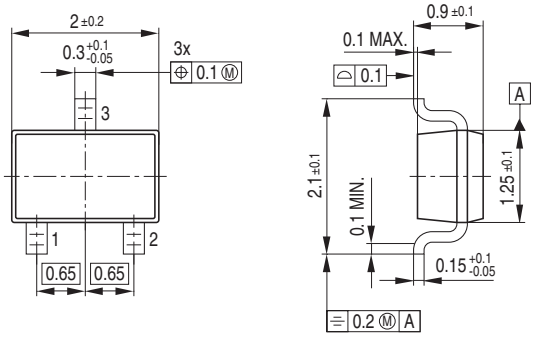


Standard Packing

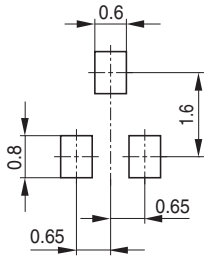
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



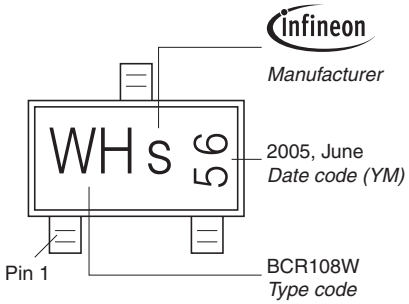
Package Outline



Foot Print

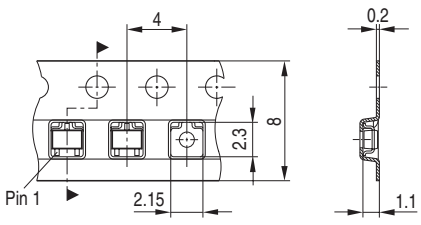


Marking Layout (Example)

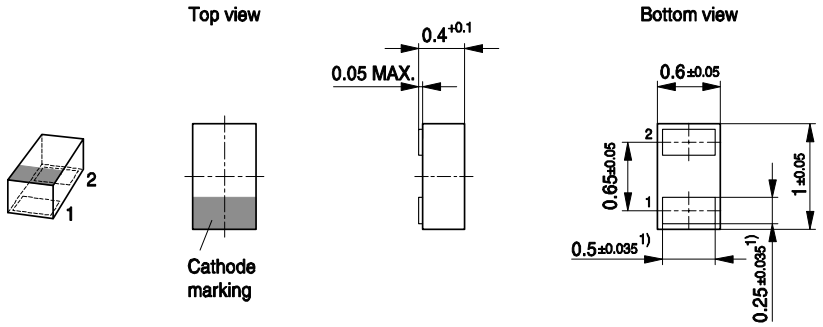


Standard Packing

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



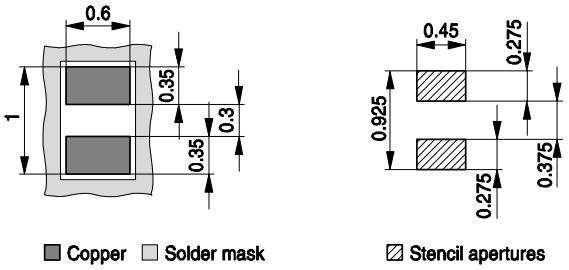
Package Outline



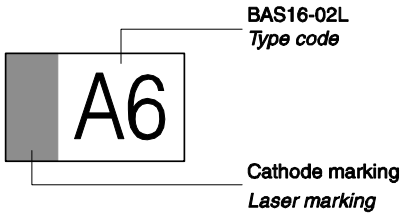
1) Dimension applies to plated terminal

Foot Print

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

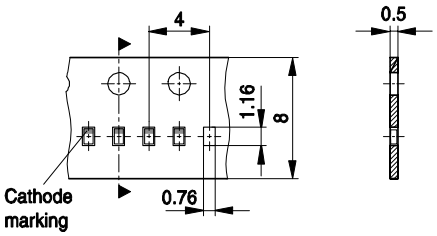


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel
Reel ø330 mm = 50.000 Pieces/Reel (optional)



Edition 2009-11-16

Published by
Infineon Technologies AG
81726 Munich, Germany

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