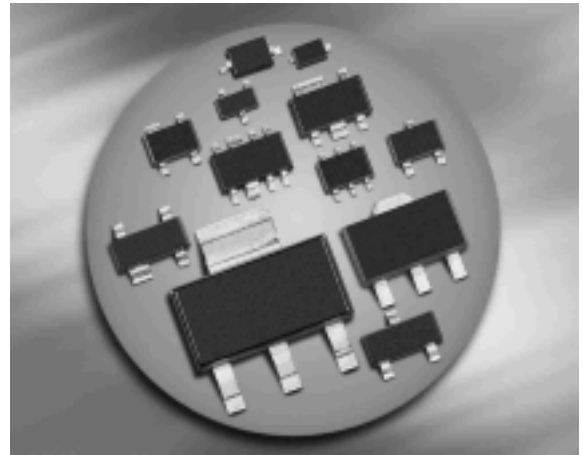
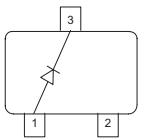
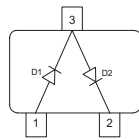
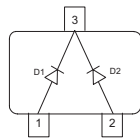
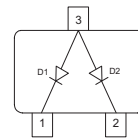


Silicon Schottky Diode

- General-purpose diode for high-speed switching
- Circuit protected
- Voltage clamping
- High-level detecting and mixing
- Improved operating temperature range due to extra-low thermal resistance (see attached Forward current curves)
- High volume packing size:
B5000: 9 x 10k reels, B5003: 10 x 3k reels
- Not for automotive applications*


BAS40

BAS40-04

BAS40-05

BAS40-06


Type	Package	Configuration	L_S (nH)	Marking
BAS40	SOT23	single	1.8	43s
BAS40-04	SOT23	series	1.8	44s
BAS40-05	SOT23	common cathode	1.8	45s
BAS40-06	SOT23	common anode	1.8	46s

* Automotive qualification ongoing

Maximum Ratings at $T_A = 25^\circ\text{C}$, 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 ($t \leq 10 \mu\text{s}$)	I_{FSM}	200	
Total power dissipation BAS40, $T_s \leq 118^\circ\text{C}$ BAS40-04, BAS40-06, $T_s \leq 110^\circ\text{C}$ BAS40-05, $T_s \leq 104^\circ\text{C}$	P_{tot}	250 250 250	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾ BAS40 BAS40-04, BAS40-06 BAS40-05	R_{thJS}	≤ 130 ≤ 160 ≤ 185	K/W

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

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	

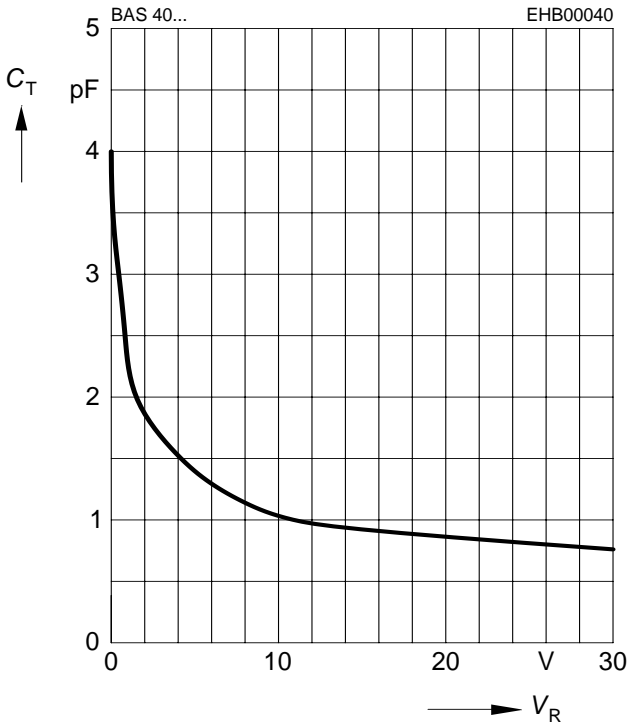
AC Characteristics

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.

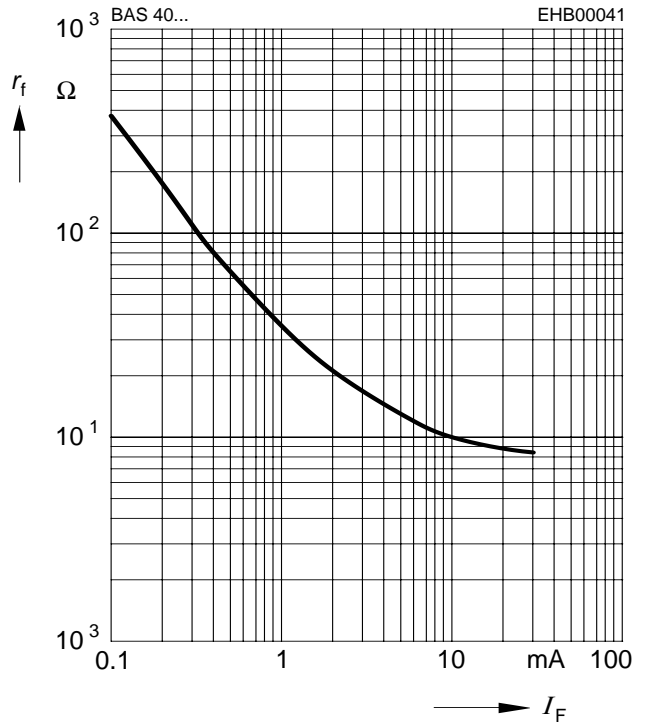
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



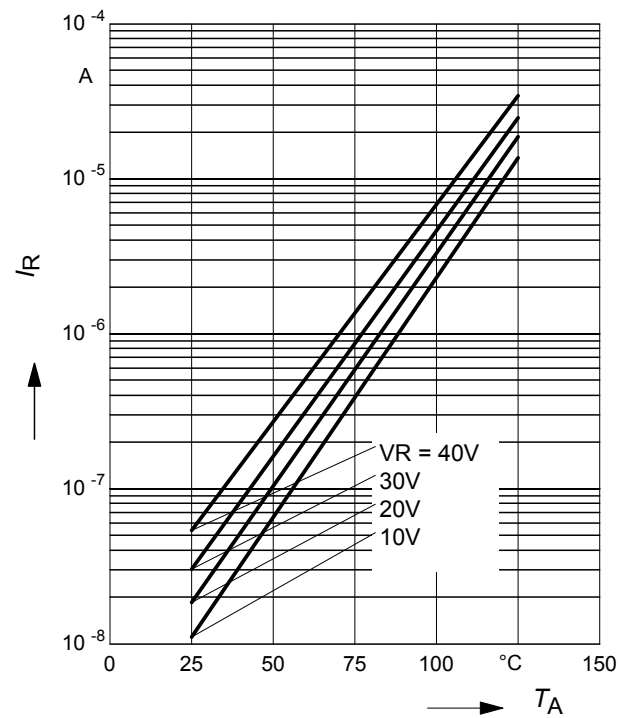
Forward resistance $r_f = f(I_F)$

$f = 1\text{MHz}$



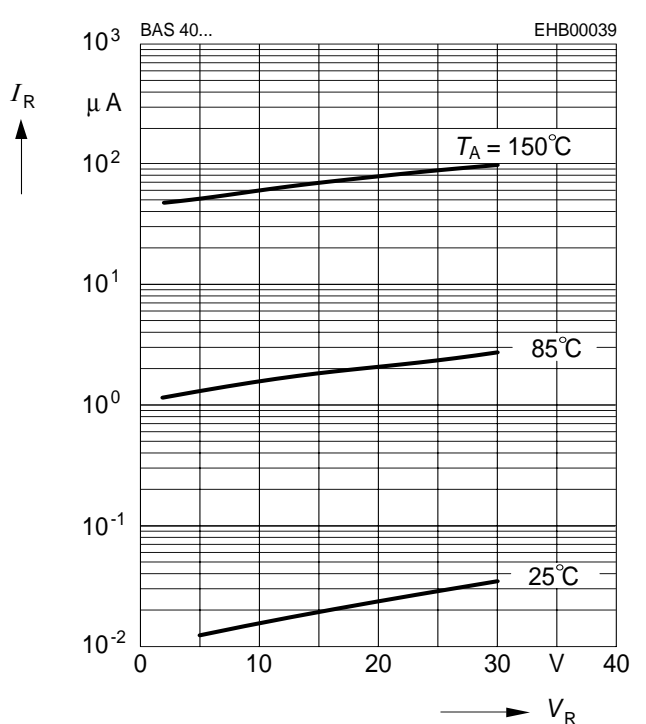
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



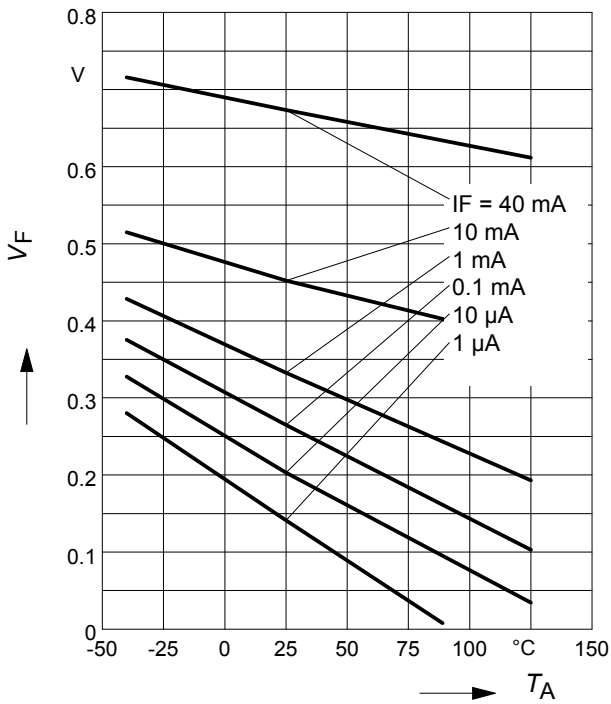
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$

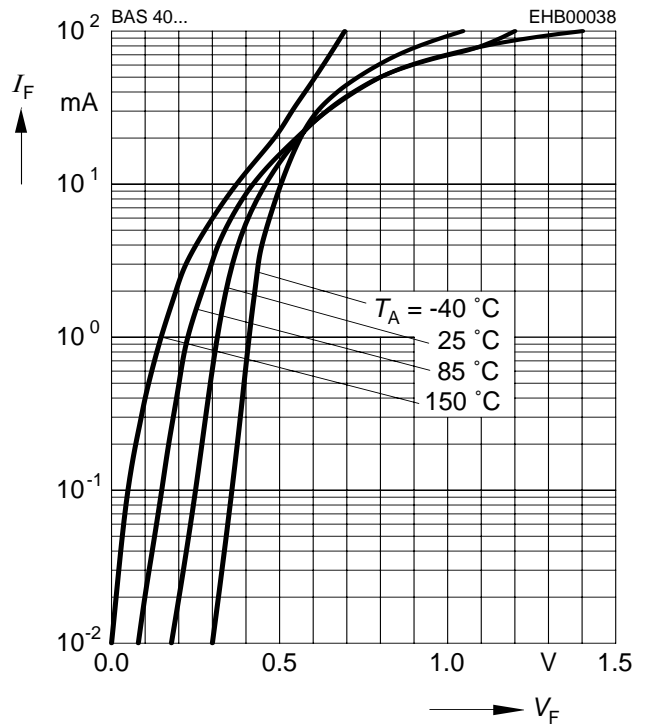


Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



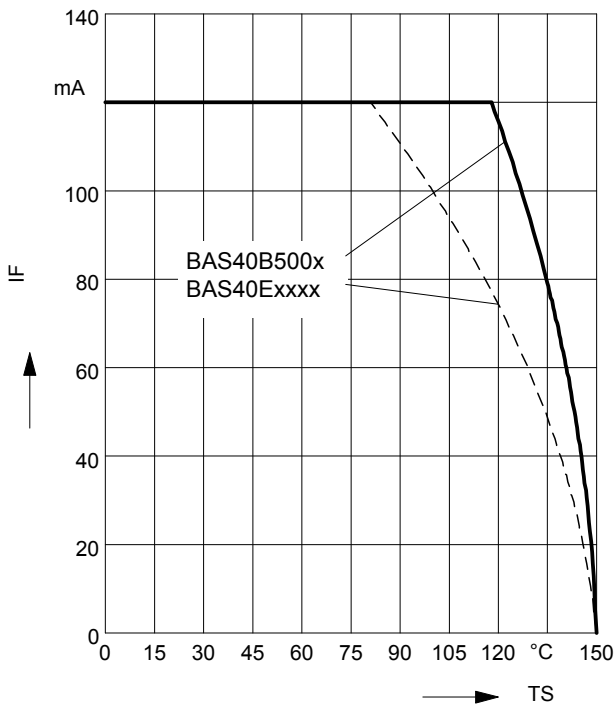
Forward current $I_F = f(V_F)$



Forward current $I_F = f(T_S)$

BAS40B500X

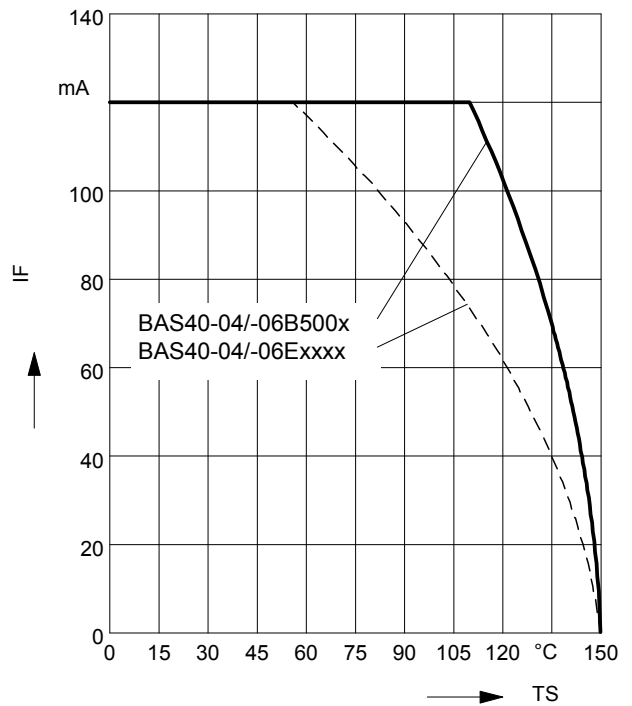
BAS40Exxxx (e.g. E6327)



Forward current $I_F = f(T_S)$

BAS40-04 / -06B500X

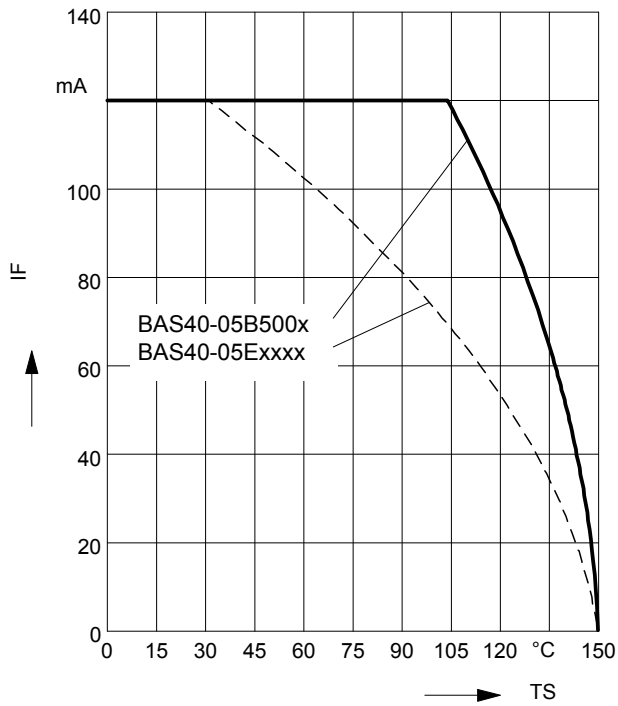
BAS40-04/-06Exxxx (e.g. E6327)



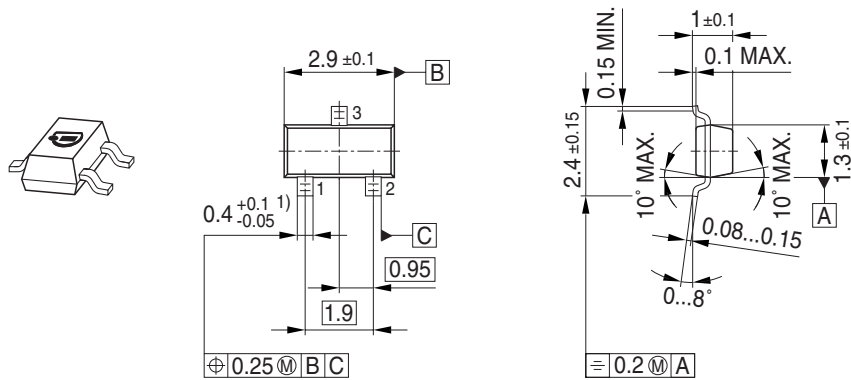
Forward current $I_F = f(T_S)$

BAS40-05B500X

BAS40-05Exxxx (e.g. E6327)

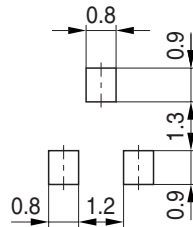


Package Outline

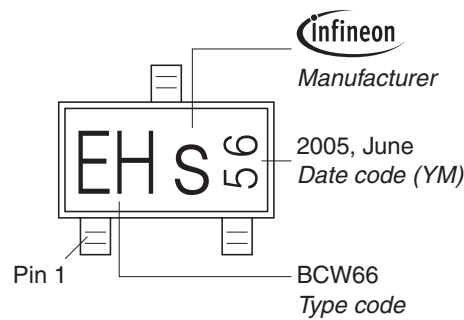


1) Lead width can be 0.6 max. in dambar area

Foot Print

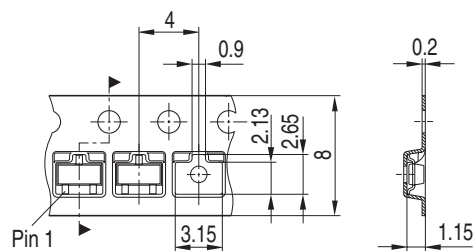


Marking Layout (Example)



Standard Packing

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



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

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