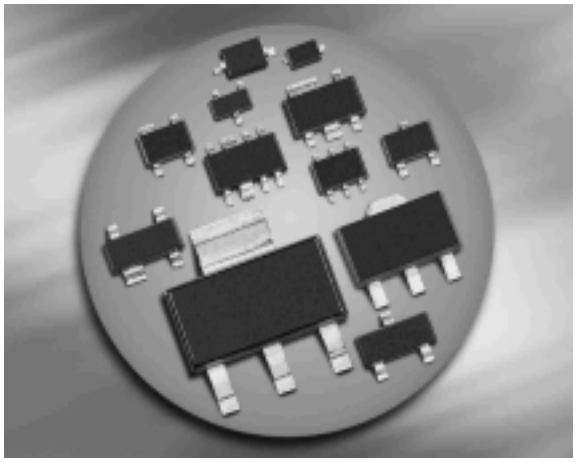
Silicon Schottky Diode



- General-purpose diode for high-speed switchhing
- 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°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 ($t \leq 10\ \mu\sigma$)	I_{FSM}	200	
Total power dissipation	P_{tot}		mW
BAS40, $T_S \leq 118$ °C		250	
BAS40-04, BAS40-06, $T_S \leq 110$° C		250	
BAS40-05, $T_S \leq 104$°C		250	
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

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

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

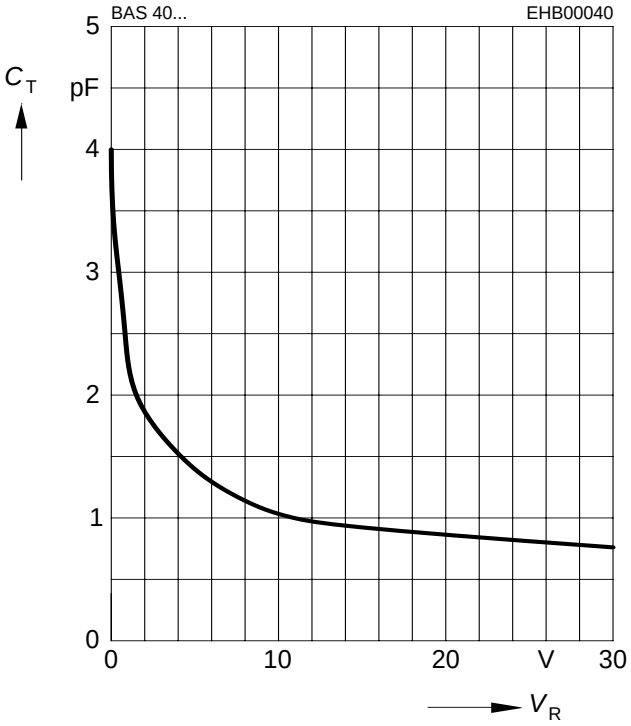
Electrical Characteristics at T_A = 25°C, unless otherwise specified

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 I_F = 1 mA I_F = 10 mA I_F = 40 mA	V_F	 250 350 600	 310 450 720	 380 500 1000	mV
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.

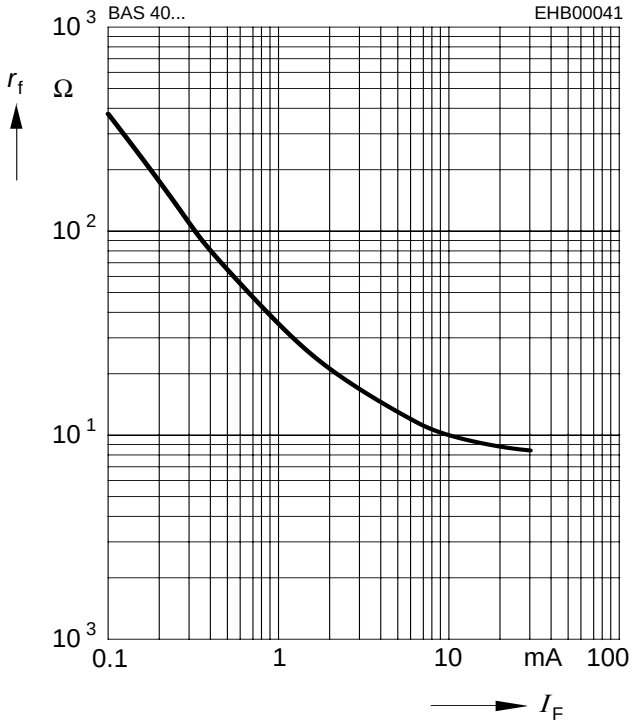
Diode capacitance $C_T = f(V_R)$

f = 1MHz



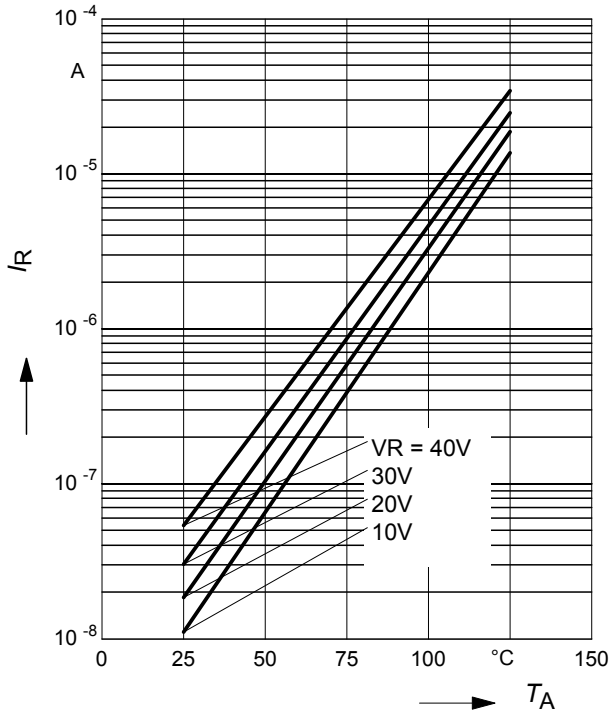
Forward resistance $r_f = f(I_F)$

f = 1MHz



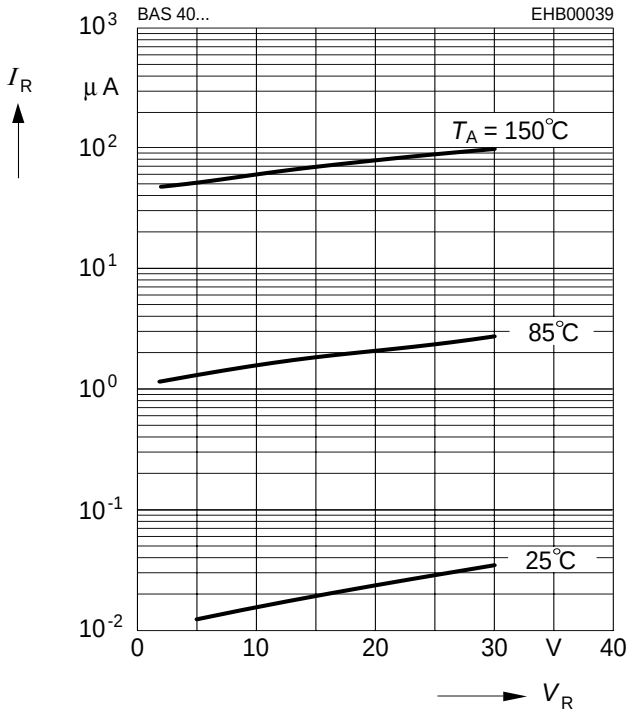
Reverse current $I_R = f(T_A)$

V_R = Parameter



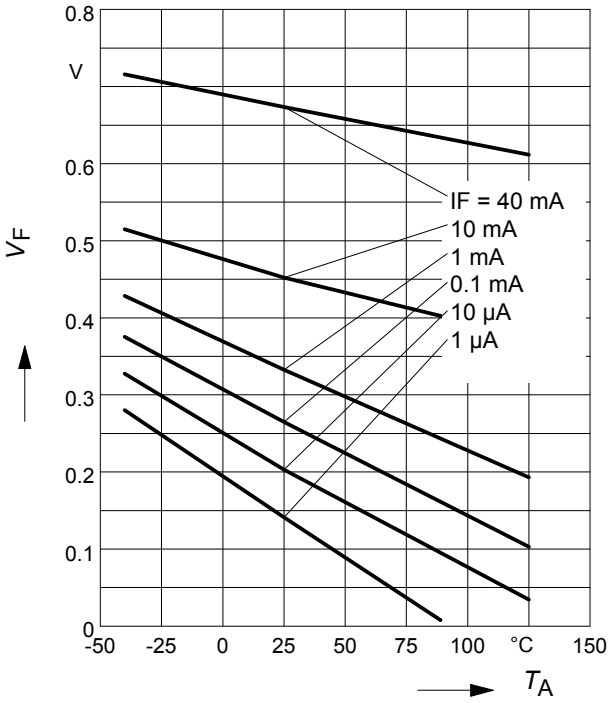
Reverse current $I_R = f(V_R)$

T_A = Parameter

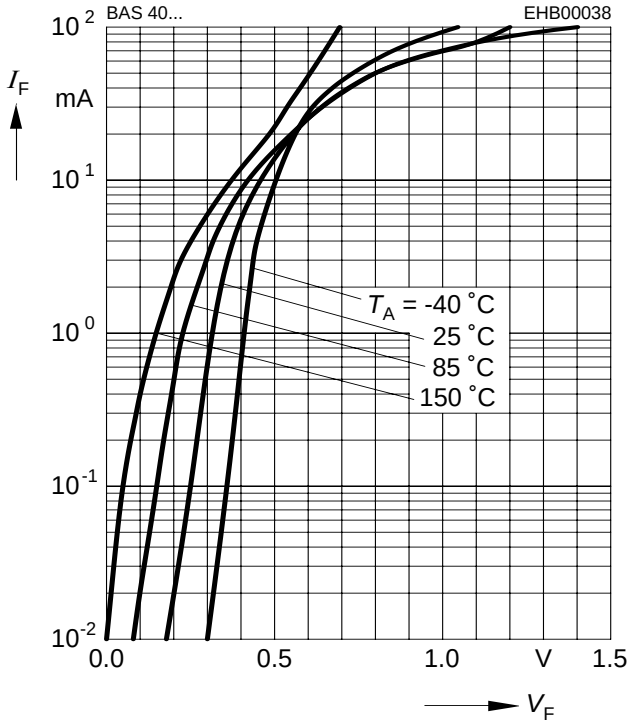


Forward Voltage $V_F = f(T_A)$

I_F = Parameter



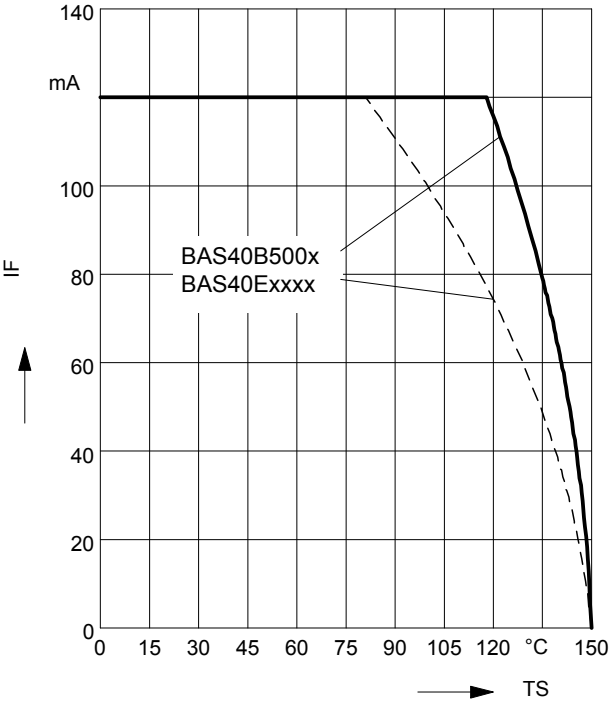
Forward current $I_F = f(V_F)$



Forward current $I_F = f(T_S)$

BAS40B500X

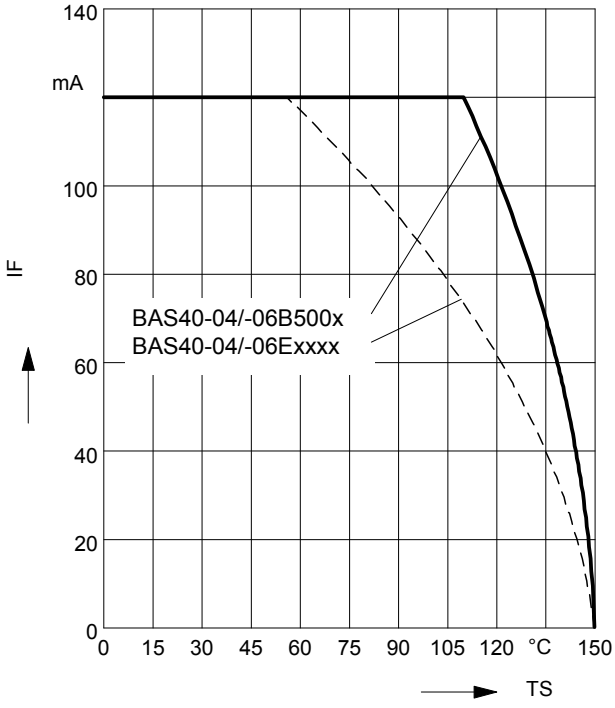
BAS40Exxxx (e.g. E6327)



Forward current $I_F = f(T_S)$

BAS40-04 / -06B500X

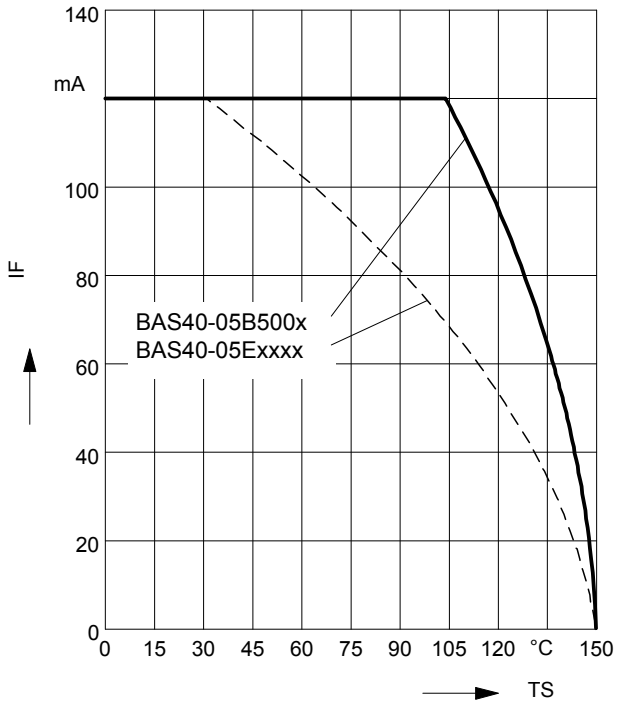
BAS40-04/-06Exxxx (e.g. E6327)



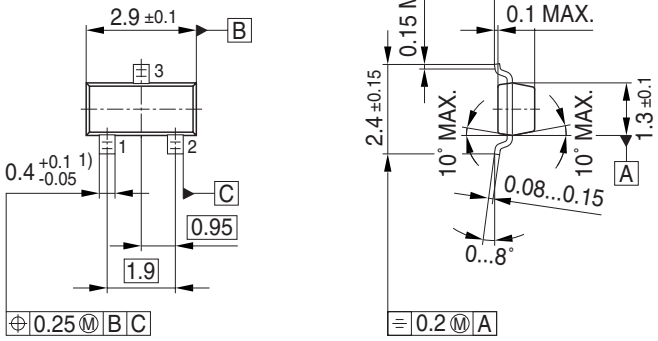
Forward current $I_F = f(T_S)$

BAS40-05B500X

BAS40-05Exxxx (e.g. E6327)

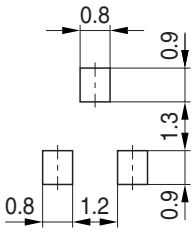


Package Outline

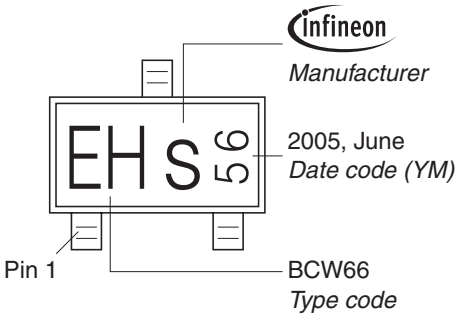


1) Lead width can be 0.6 max. in dambar area

Foot Print

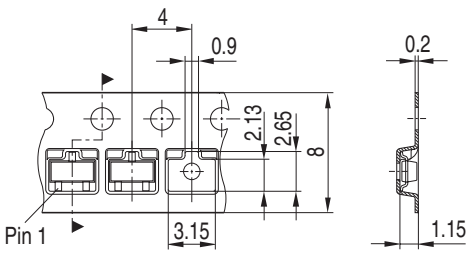


Marking Layout (Example)



Standard Packing

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



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