Silicon Switching Diodes

- Switching applications

- High breakdown voltage

VPS05163

EHA00004
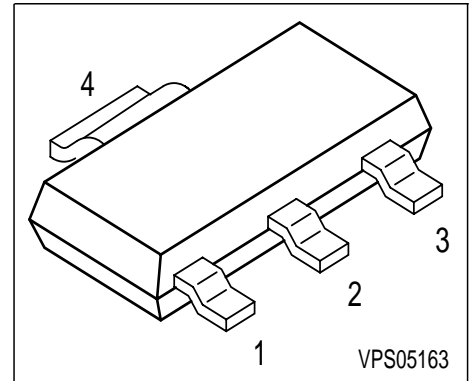
Type	Marking	Pin Configuration				Package
BAS78A	BAS 78A	1 = A	2 = C	3 = n.c.	4 = C	SOT223
BAS78B	BAS 78B	1 = A	2 = C	3 = n.c.	4 = C	SOT223
BAS78C	BAS 78C	1 = A	2 = C	3 = n.c.	4 = C	SOT223
BAS78D	BAS 78D	1 = A	2 = C	3 = n.c.	4 = C	SOT223

Maximum Ratings

Parameter	Symbol	BAS 78A	BAS 78B	BAS 78C	BAS 78D	Unit
Diode reverse voltage	V_R	50	100	200	400	V
Peak reverse voltage	V_{RM}	50	100	200	400	
Forward current	I_F	1				A
Peak forward current	I_{FM}	1				
Surge forward current, t = 1 µs	I_{FS}	10				
Total power dissipation, T_S = 124 °C	P_{tot}	1.2				W
Junction temperature	T_j	150				°C
Storage temperature	T_{stg}	-65 ... 150				

Thermal Resistance

Junction - soldering point[1]	R_{thJS}	≤ 22	K/W

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

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Breakdown voltage	$V_{(BR)}$				V
$I_{(BR)} = 100$ µA **BAS78A**		50	-	-	
BAS78B		100	-	-	
BAS78C		200	-	-	
BAS78D		400	-	-	
Forward voltage	V_F				
$I_F = 1$ A		-	-	1.6	
$I_F = 2$ A		-	-	2	
Reverse current	I_R	-	-	1	µA
$V_R = V_{Rmax}$					
Reverse current	I_R	-	-	50	
$V_R = V_{Rmax}$, $T_A = 150$ °C					
AC characteristics					
Diode capacitance	C_D	-	10	-	pF
$V_R = 0$ V, $f = 1$ MHz					
Reverse recovery time	t_{rr}	-	1	-	µs
$I_F = 200$ mA, $I_R = 200$ mA, $R_L = 100$ Ω, measured at $I_R = 200$mA					

Test circuit for reverse recovery time
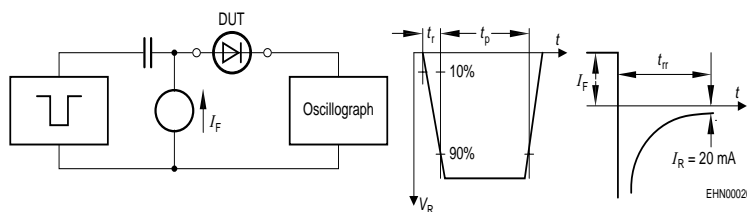
Pulse generator: $t_p = 10$µs, $D = 0.05$,   Oscillograph: $R = 50$Ω, $t_r = 0.35$ns,
          $t_r = 0.6$ns, $R_i = 50$Ω $C \leq 1$pF

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Forward current $I_F = f(T_S)$
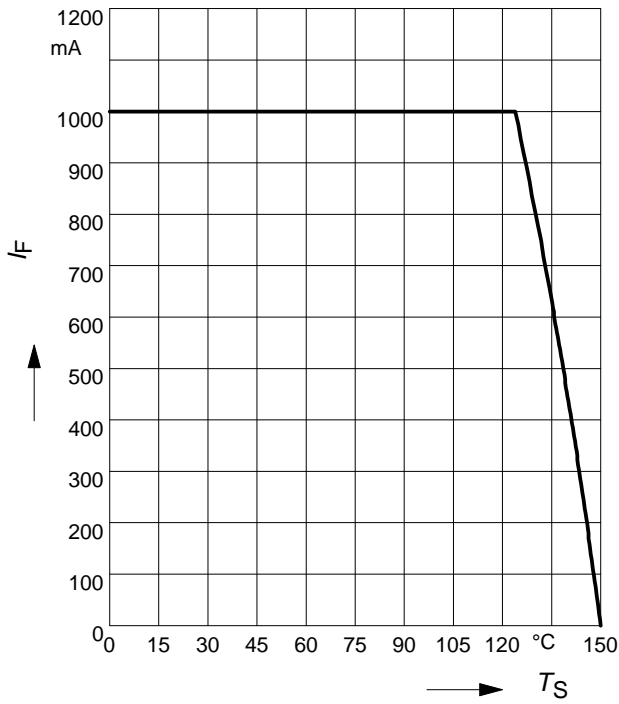
Forward current $I_F = f(V_F)$

$T_A = 25°C$
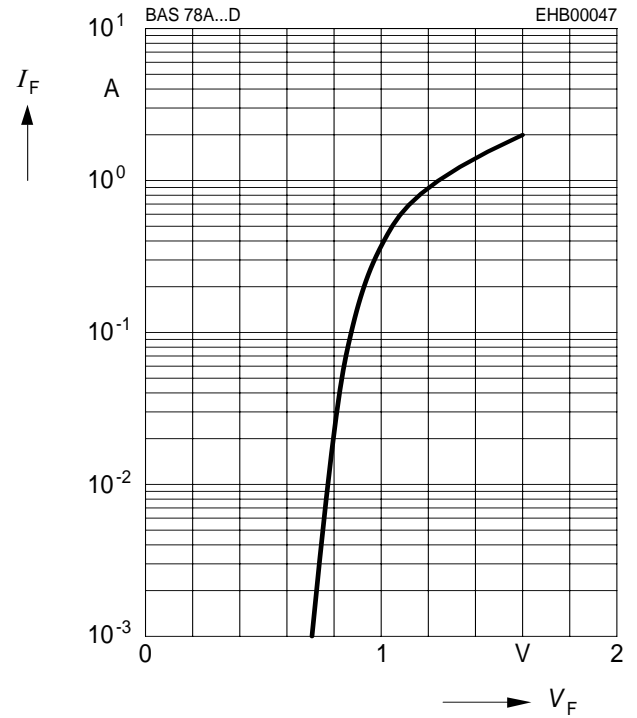
Reverse current $I_R = f(T_A)$

$V_R = V_{Rmax}$

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