Silicon Switching Diodes

- Switching applications
- High breakdown voltage

VPS05162

EHA07007
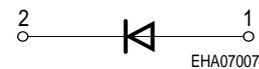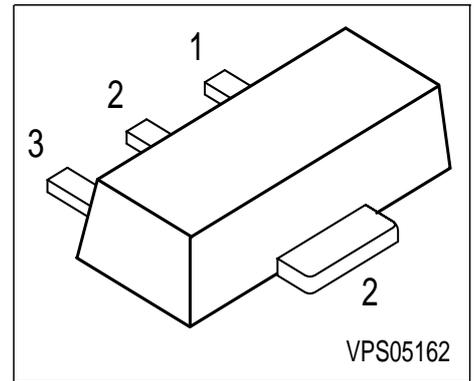
Type	Marking	Pin Configuration			Package
BAW78A	GA	1 = A	2 = C	3 = n.c.	SOT89
BAW78B	GB	1 = A	2 = C	3 = n.c.	SOT89
BAW78C	GC	1 = A	2 = C	3 = n.c.	SOT89
BAW78D	GD	1 = A	2 = C	3 = n.c.	SOT89

Maximum Ratings

Parameter	Symbol	BAW 78A	BAW 78B	BAW 78C	BAW 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 = 125 °C	P_{tot}	1				W
Junction temperature	T_j	150				°C
Storage temperature	T_{stg}	-65 ... 150				

Thermal Resistance

Junction - soldering point[1]	R_{thJS}	≤ 25	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 BAW78A		50	-	-	
BAW78B		100	-	-	
BAW78C		200	-	-	
BAW78D		400	-	-	
Forward voltage	V_F				
I_F = 1 A		-	-	1.6	
I_F = 2 A		-	-	2	
Reverse current $V_R = V_{Rmax}$	I_R	-	-	1	µA
Reverse current $V_R = V_{Rmax}$, T_A = 150 °C	I_R	-	-	50	
AC characteristics					
Diode capacitance V_R = 0 V, f = 1 MHz	C_D	-	10	-	pF
Reverse recovery time I_F = 200 mA, I_R = 200 mA, R_L = 100 Ω, measured at I_R = 20mA	t_{rr}	-	1	-	µs

Test circuit for reverse recovery time

EHN00019
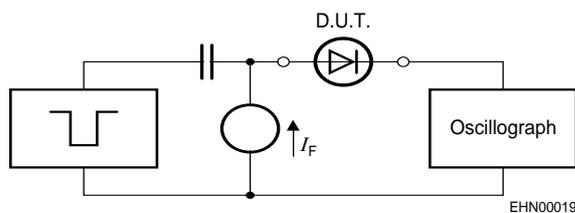
Pulse generator: t_p = 10µs, D = 0.05,   Oscillograph: R = 50Ω, t_r = 0.35ns,
         t_r = 0.6ns, R_i = 50Ω $C \leq$ 1pF

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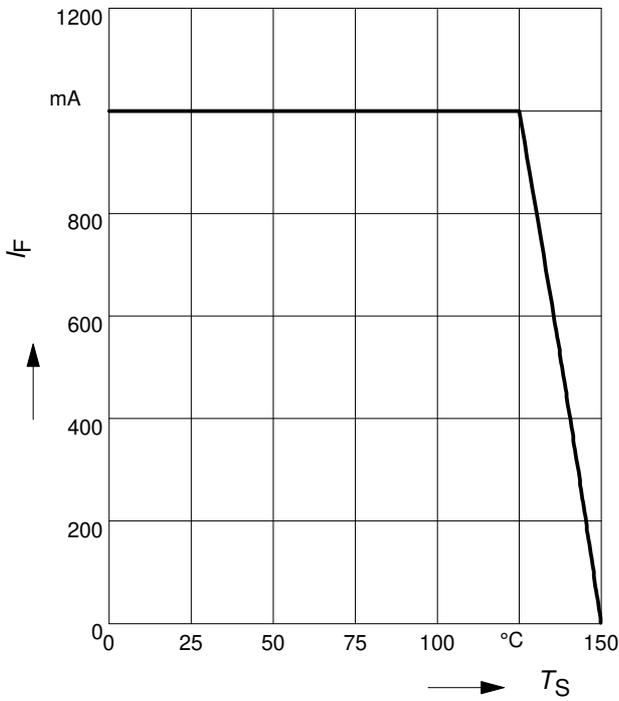
**Forward current** $I_F = f(V_F)$

$T_A = 25°C$
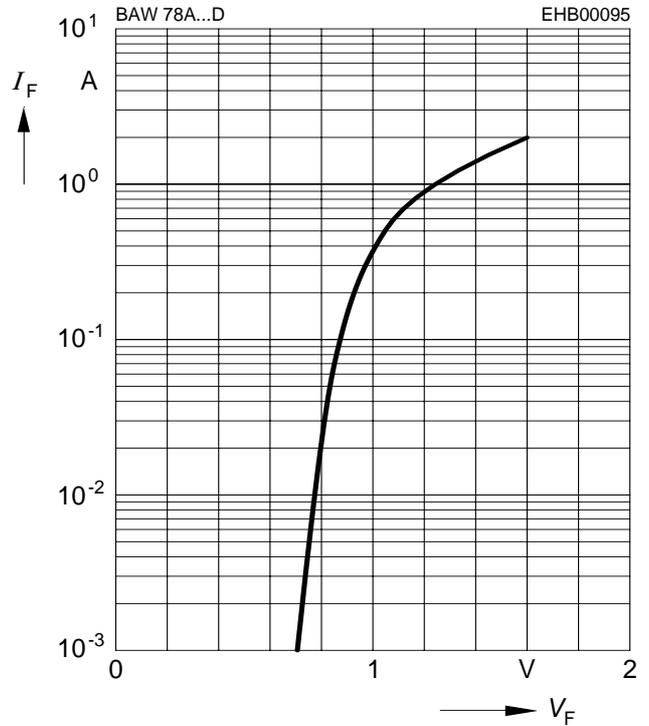
Peak forward current $I_{FM} = f(t_p)$

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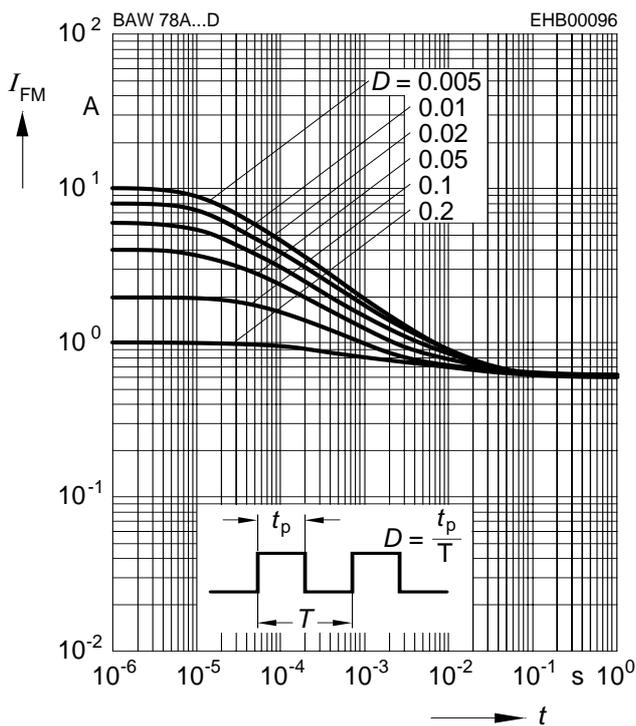
Reverse current $I_R = f(T_A)$

$V_R = V_{Rmax}$

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