

Silicon Switching Diodes

BAW 78 A
... BAW 78 D

- Switching applications
- High breakdown voltage



Type	Marking	Ordering Code (tape and reel)	Pin Configuration	Package ¹⁾
BAW 78 A	GA	Q62702-A778		SOT-89
BAW 78 B	GB	Q62702-A779		
BAW 78 C	GC	Q62702-A784		
BAW 78 D	GD	Q62702-A109		

Maximum Ratings

Parameter	Symbol	Values				Unit
		BAW 78 A	BAW 78 B	BAW 78 C	BAW 78 D	
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 $t = 1 \mu\text{s}$	I_{FS}	10				
Total power dissipation $T_s = 125 \text{ }^\circ\text{C}$	P_{tot}	1				W
Junction temperature	T_j	150				$^\circ\text{C}$
Storage temperature range	T_{stg}	- 65 ... + 150				

Thermal Resistance

Junction - ambient ²⁾	$R_{th JA}$	≤ 95	K/W
Junction - soldering point	$R_{th JS}$	≤ 25	

¹⁾ For detailed information see chapter Package Outlines.

²⁾ Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

Electrical Characteristics

at $T_A = 25\text{ }^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

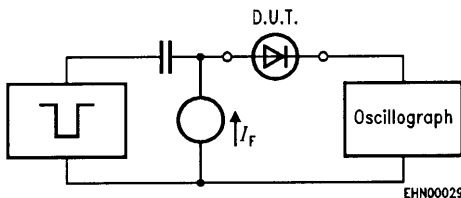
DC characteristics

Breakdown voltage $I_{(BR)} = 100\text{ }\mu\text{A}$	$V_{(BR)}$				V
BAW 78 A		50	—	—	
BAW 78 B		100	—	—	
BAW 78 C		200	—	—	
BAW 78 D		400	—	—	
Forward voltage ¹⁾ $I_F = 1\text{ A}$ $I_F = 2\text{ A}$	V_F	—	—	1.6 2	V
Reverse current $V_R = V_{Rmax}$ $V_R = V_{Rmax}, T_A = 150\text{ }^\circ\text{C}$	I_R	—	—	1 50	μA

AC characteristics

Diode capacitance $V_R = 0, f = 1\text{ MHz}$	C_D	—	10	—	pF
Reverse recovery time $I_F = 200\text{ mA}, I_R = 200\text{ mA},$ $R_L = 100\text{ }\Omega$ measured at $I_R = 20\text{ mA}$	t_{rr}	—	1	—	μs

Test circuit for reverse recovery time



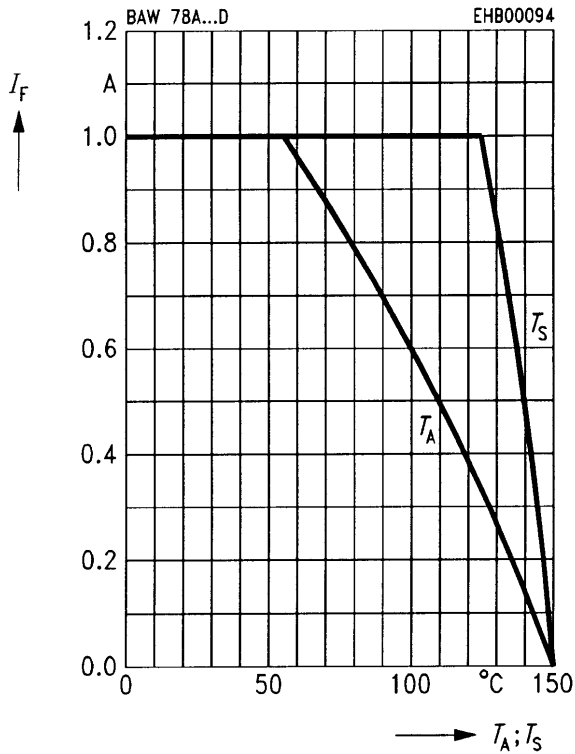
Pulse generator: $t_p = 5\text{ }\mu\text{s}, D = 0.05$
 $t_r = 0.6\text{ ns}, R_j = 50\text{ }\Omega$

Oscilloscope: $R = 50\text{ }\Omega$
 $t_r = 0.35\text{ ns}$
 $C \leq 1\text{ pF}$

¹⁾ Pulse test: $t_p \leq 300\text{ }\mu\text{s}, D = 2\text{ }\%$.

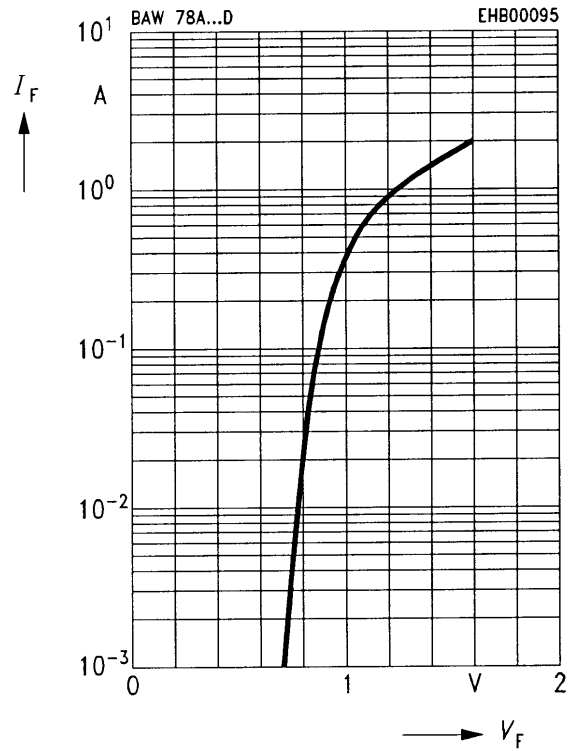
Forward current $I_F = f(T_A^*; T_S)$

* Package mounted on epoxy



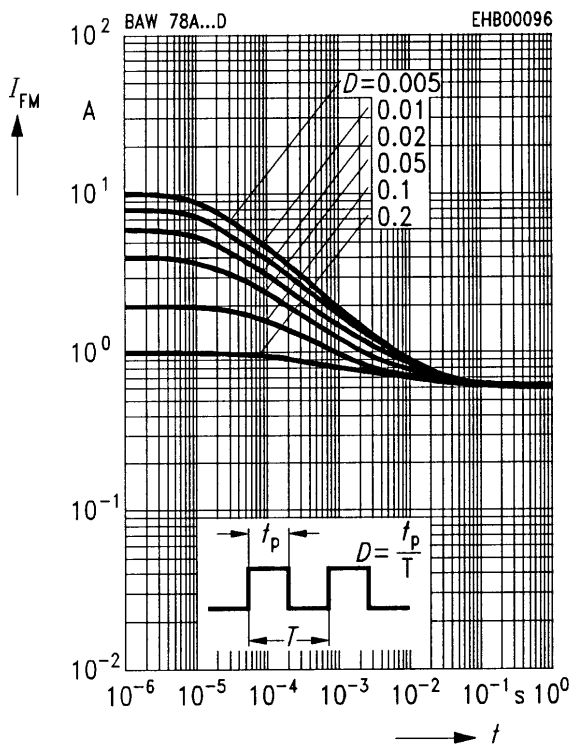
Forward current $I_F = f(V_F)$

$T_A = 25\text{ °C}$



Peak forward current $I_{FM} = f(t)$

$T_A = 25\text{ °C}$



Reverse current $I_R = f(T_A)$

$V_R = V_{Rmax}$

