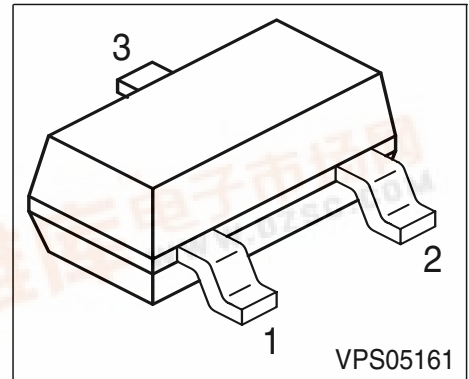




BAR 74

Silicon Switching Diode

- For high-speed switching applications



Type	Marking	Pin Configuration			Package
BAR 74	JBs	1 = A	2 = n.c.	3 = C	SOT-23

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	50	V
Peak reverse voltage	V_{RM}	50	V
Forward current	I_F	250	mA
Surge forward current, $t = 1 \mu s$	I_{FS}	4.5	A
Total power dissipation, $T_S = 54^\circ C$	P_{tot}	370	mW
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-65 ... 150	$^\circ C$

Thermal Resistance

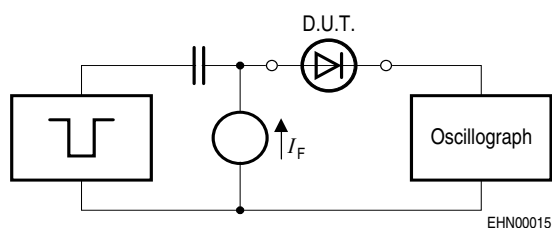
Junction - ambient ¹⁾	R_{thJA}	≤ 330	K/W
Junction - soldering point	R_{thJS}	≤ 260	K/W

1) Package mounted on epoxy pcb 40mm x 40mm x 1.5mm / 6cm² Cu

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Breakdown voltage $I_{(BR)} = 100\ \mu\text{A}$	$V_{(BR)}$	50	-	-	V
Forward voltage $I_F = 100\ \text{mA}$	V_F	-	-	1	
Reverse current $V_R = 50\ \text{V}$	I_R	-	-	0.1	μA
Reverse current $V_R = 50\ \text{V}, T_A = 150\ ^\circ\text{C}$	I_R	-	-	100	
AC characteristics					
Diode capacitance $V_R = 0\ \text{V}, f = 20\ \text{MHz}$	C_D	-	-	2	pF
Reverse recovery time $I_F = 10\ \text{mA}, I_R = 10\ \text{mA}, R_L = 100\ \Omega,$ measured at $I_R = 1\text{mA}$	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time

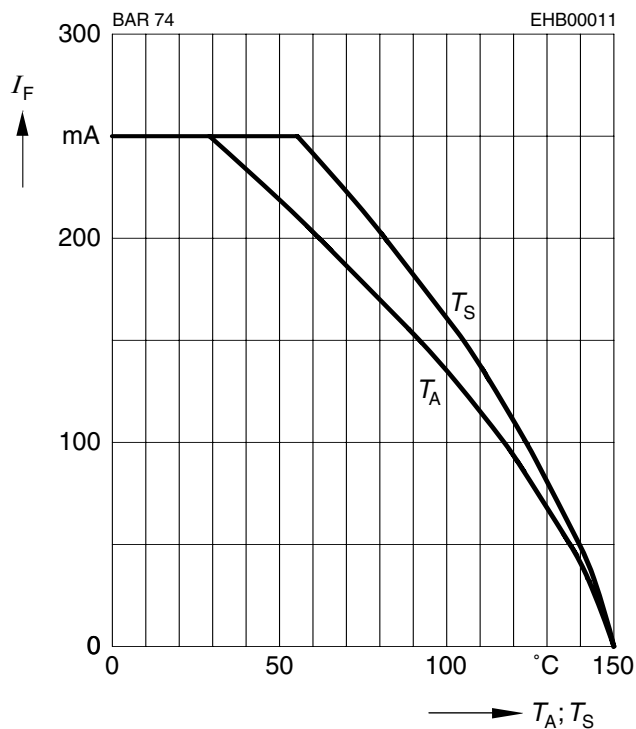


Pulse generator: $t_p = 100\text{ns}$, $D = 0.05$,
 $t_r = 0.6\text{ns}$, $R_i = 50\ \Omega$

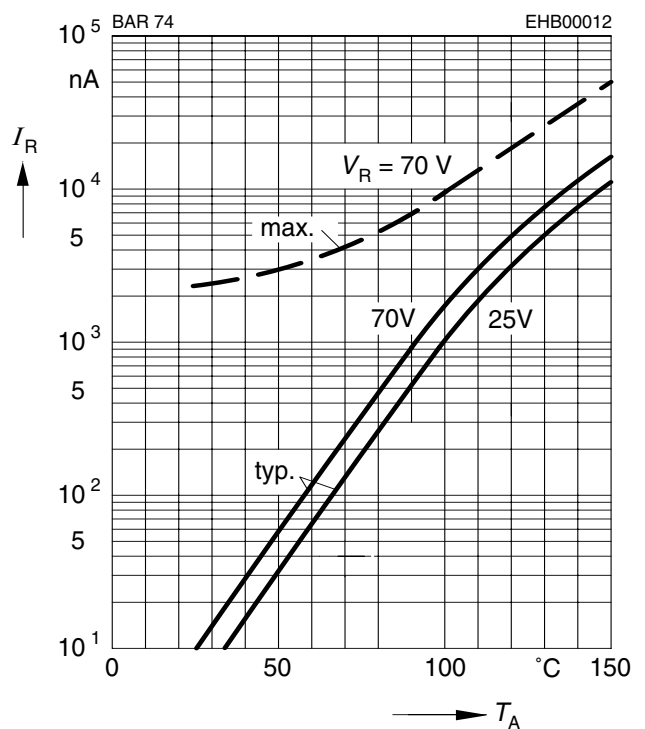
Oscilloscope: $R = 50\ \Omega$, $t_r = 0.35\text{ns}$,
 $C \leq 1\text{pF}$

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

* Package mounted on epoxy

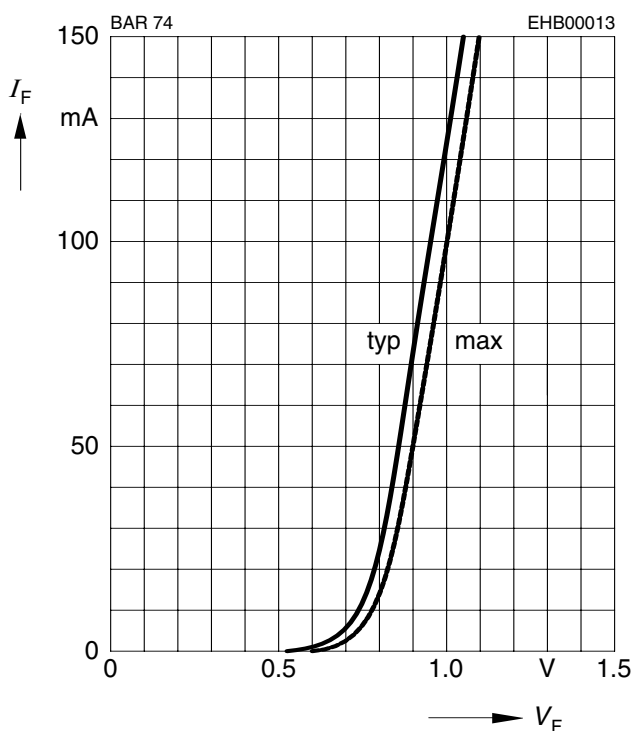


Reverse current $I_R = f(T_A)$



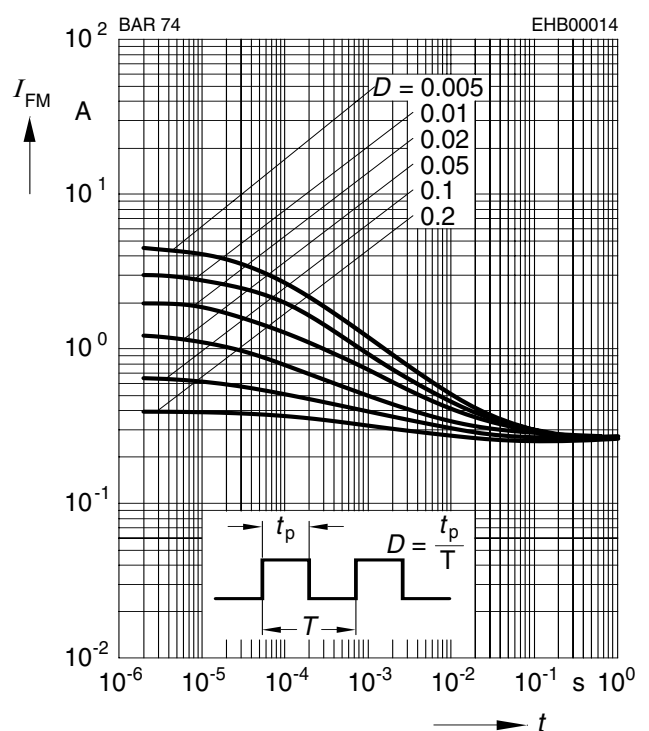
Forward current $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$



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

$T_A = 25^\circ\text{C}$



Forward voltage $V_F = f(T_A)$

