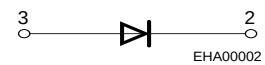
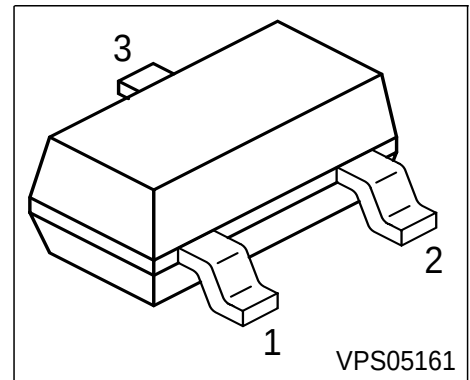


Silicon Switching Diode

- For high-speed switching applications



Type	Marking	Pin Configuration			Package
BAL99	JFs	1 = n.c.	2 = C	3 = A	SOT23

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	70	V
Peak reverse voltage	V_{RM}	70	
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	

Thermal Resistance

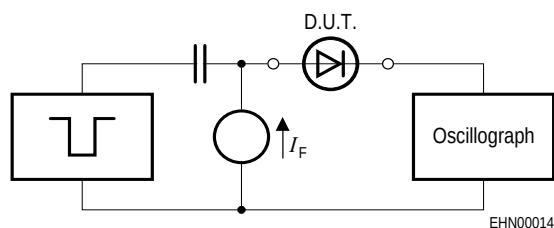
Junction - soldering point ¹⁾	R_{thJS}	≤ 260	K/W
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¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Breakdown voltage $I_{(BR)} = 100\ \mu\text{A}$	$V_{(BR)}$	-	-	-	V
Forward voltage $I_F = 1\ \text{mA}$ $I_F = 10\ \text{mA}$ $I_F = 50\ \text{mA}$ $I_F = 150\ \text{mA}$	V_F	- - - -	- - - -	715 855 1000 1250	mV
Reverse current $V_R = 70\ \text{V}$	I_R	-	-	2.5	μA
Reverse current $V_R = 25\ \text{V}, T_A = 150\ ^\circ\text{C}$	I_R	-	-	30	
$V_R = 70\ \text{V}$		-	-	50	
AC characteristics					
Diode capacitance $V_R = 0\ \text{V}, f = 1\ \text{MHz}$	C_D	-	-	1.5	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}	-	-	6	ns

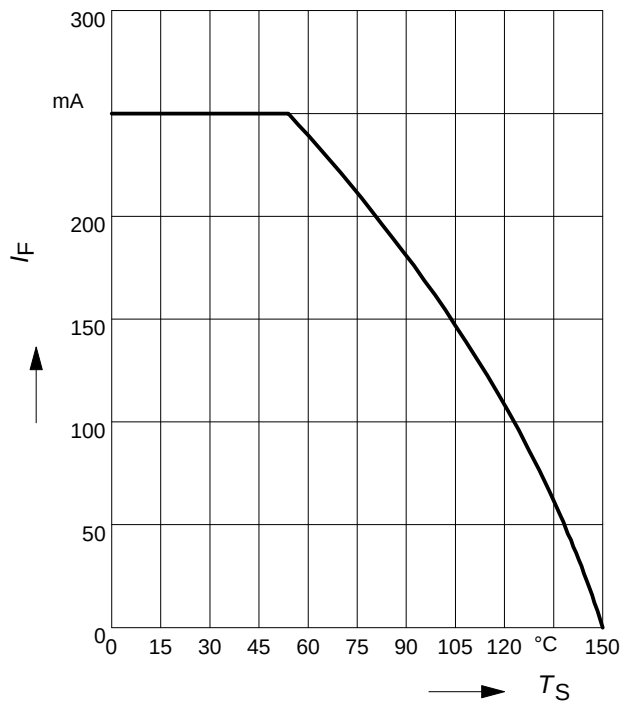
Test circuit for reverse recovery time



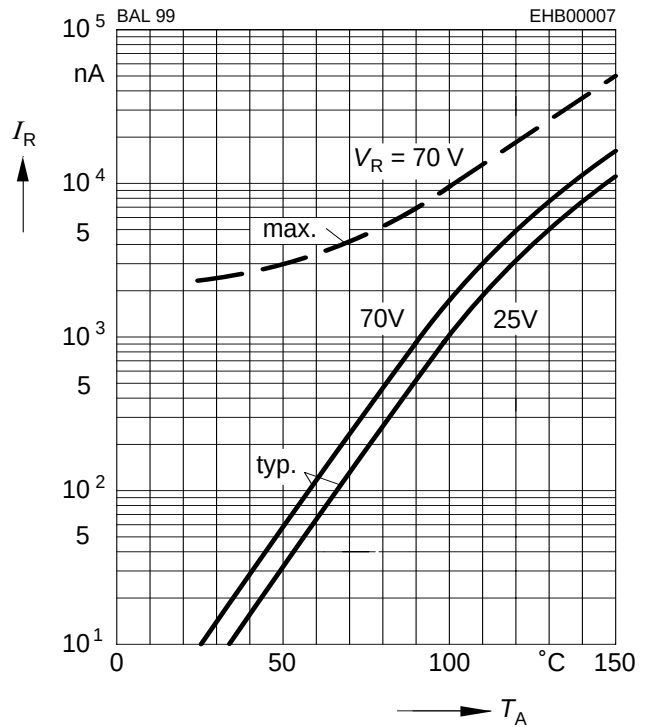
Pulse generator: $t_p = 100\text{ns}$, $D = 0.05$,
 $t_r = 0.6\text{ns}$, $R_i = 50\Omega$

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

Forward current $I_F = f(T_S)$

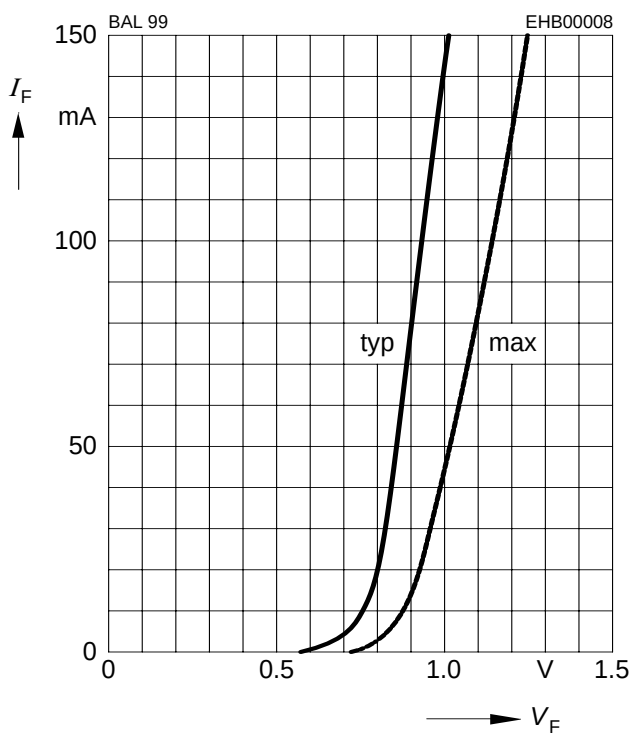


Reverse current $I_R = f(T_A)$



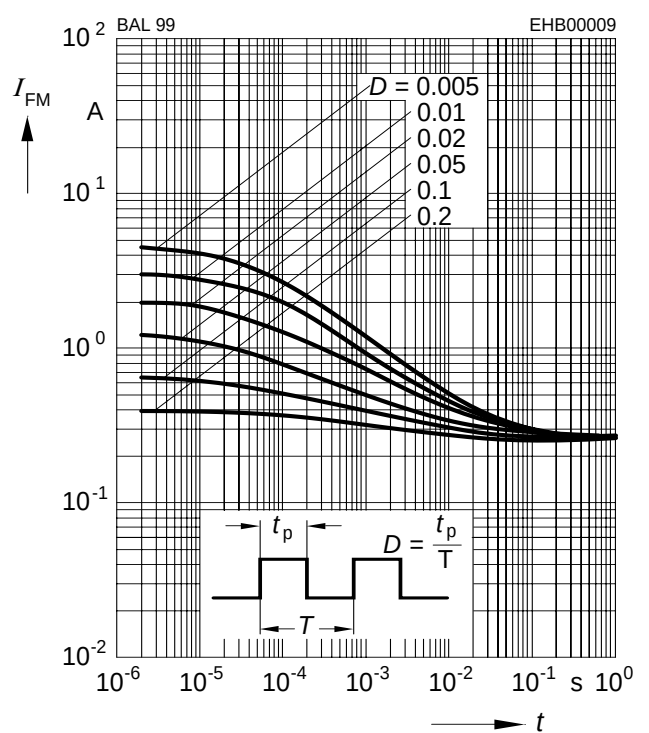
Forward current $I_F = f(V_F)$

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



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

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



Forward voltage $V_F = f(T_A)$

