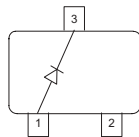
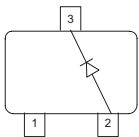


**Silicon Switching Diode**

- For high-speed switching applications
- Pb-free (RoHS compliant) package <sup>1)</sup>
- Qualified according AEC Q101


**BAL74**
**BAR74**


Type	Package	Configuration	Marking
BAL74	SOT23	single	JCs
BAR74	SOT23	single	JBs

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

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

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>2)</sup> , BAL74, BAR74	$R_{thJS}$	$\leq 260$	K/W

<sup>1</sup>Pb-containing package may be available upon special request

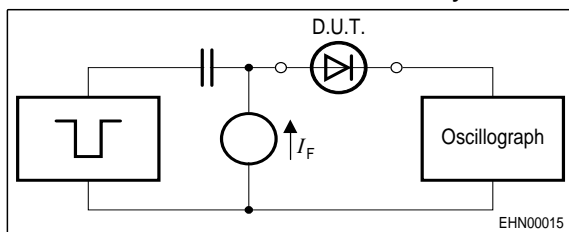
<sup>2</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$	50	-	-	V
Reverse current $V_R = 50 \text{ V}$ $V_R = 50 \text{ V}, T_A = 150^\circ\text{C}$	$I_R$	-	-	0.1 100	$\mu\text{A}$
Forward voltage $I_F = 100 \text{ mA}$	$V_F$	-	-	1	V

**AC Characteristics**

Diode capacitance $V_R = 0 \text{ V}, f = 1 \text{ MHz}$	$C_T$	-	-	2	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}$ , measured at $I_R = 1 \text{ mA}$ , $R_L = 100 \Omega$	$t_{rr}$	-	-	4	ns

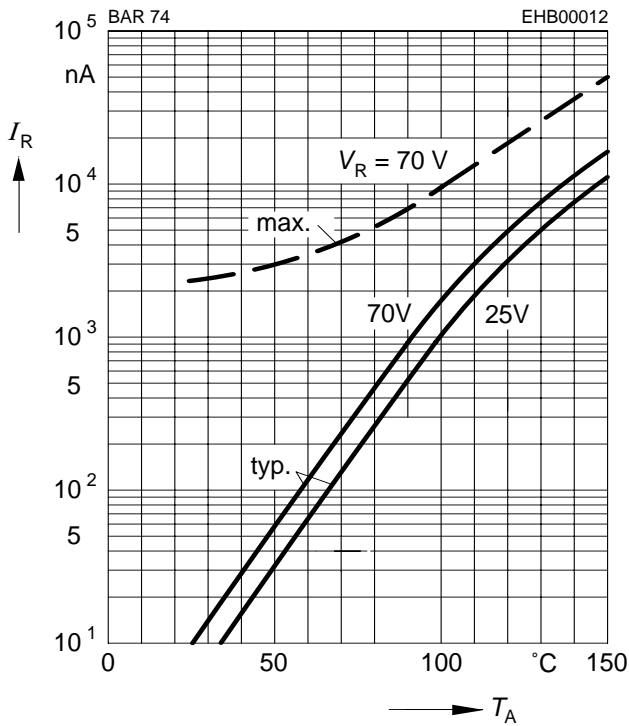
**Test circuit for reverse recovery time**


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

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

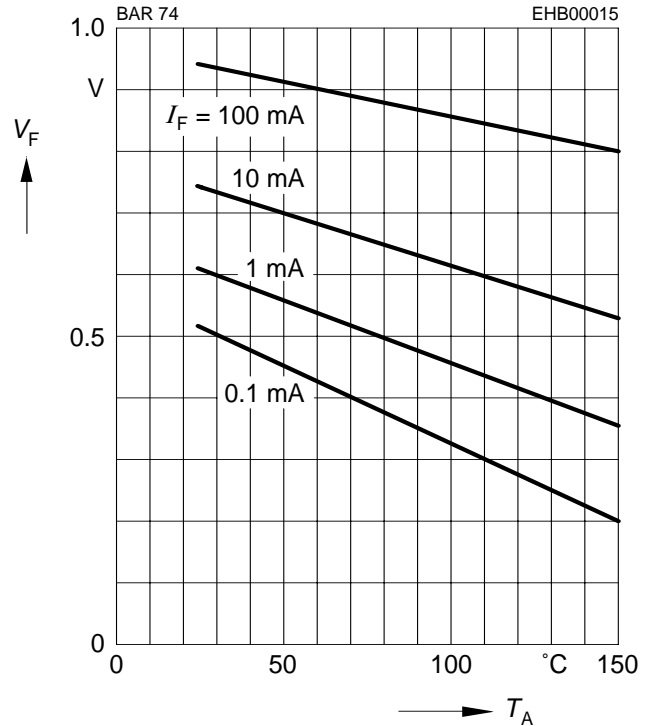
**Reverse current  $I_R = f(T_A)$**

$V_R = \text{Parameter}$

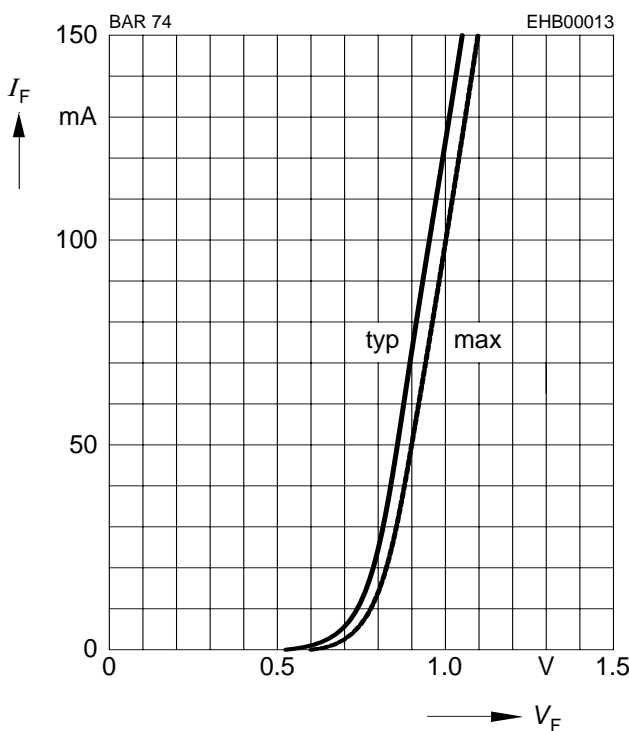


**Forward Voltage  $V_F = f(T_A)$**

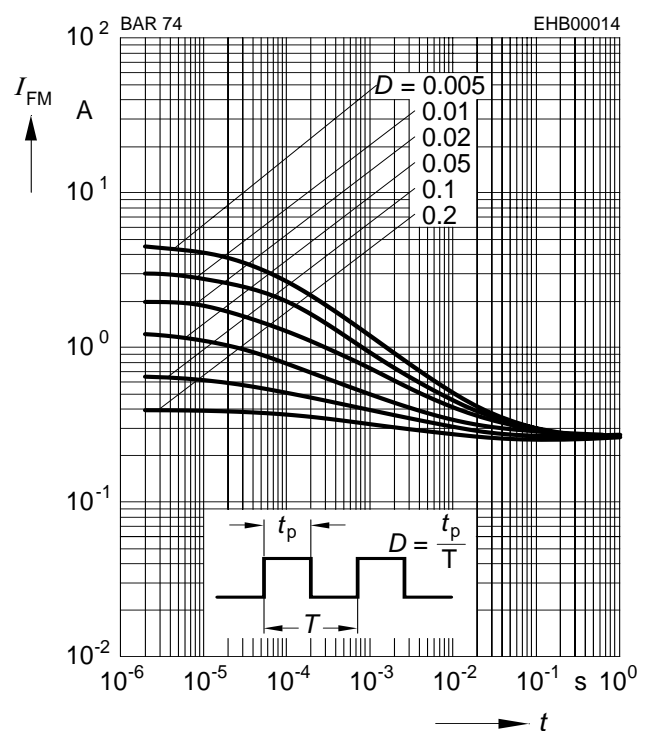
$I_F = \text{Parameter}$



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



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

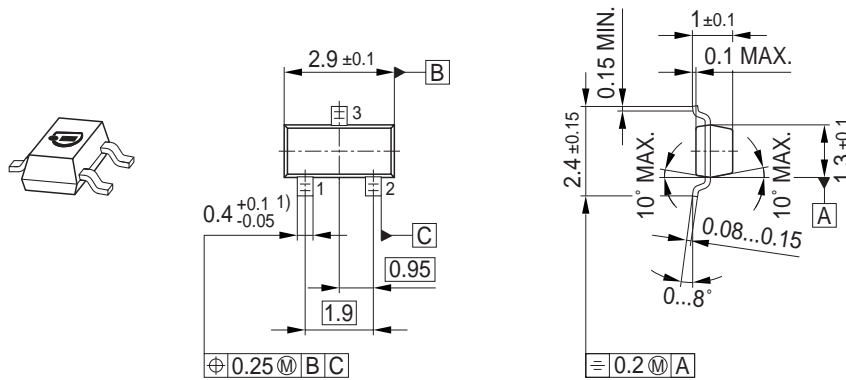


Forward current  $I_F = f(T_S)$

BAL74, BAR74

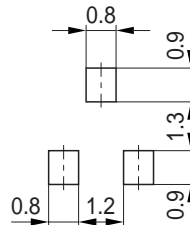


Package Outline



1) Lead width can be 0.6 max. in dambar area

Foot Print



Marking Layout (Example)



Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



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