



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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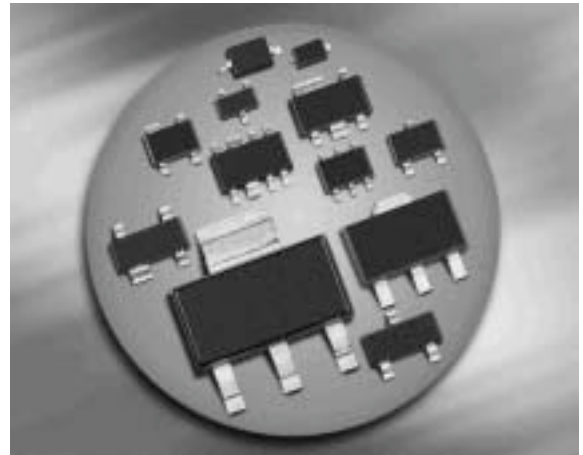
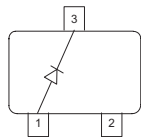
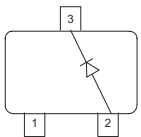
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**Silicon Switching Diode**

- 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

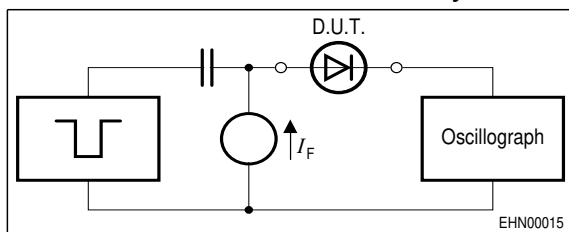
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

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

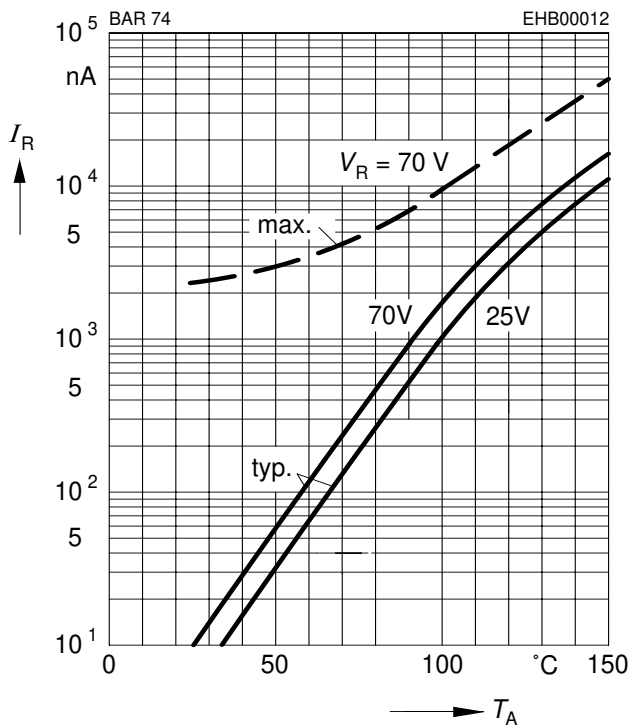
Test circuit for reverse recovery time


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

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

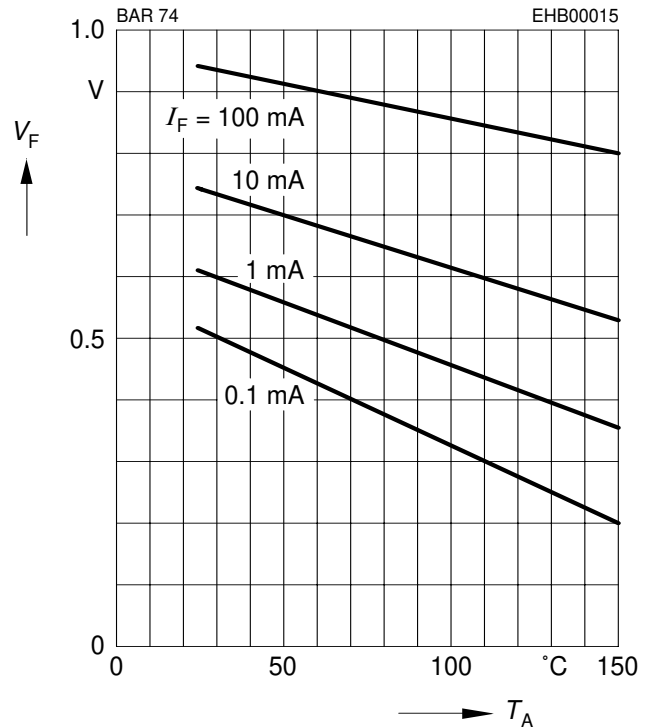
**Reverse current  $I_R = f(T_A)$**

$V_R = \text{Parameter}$

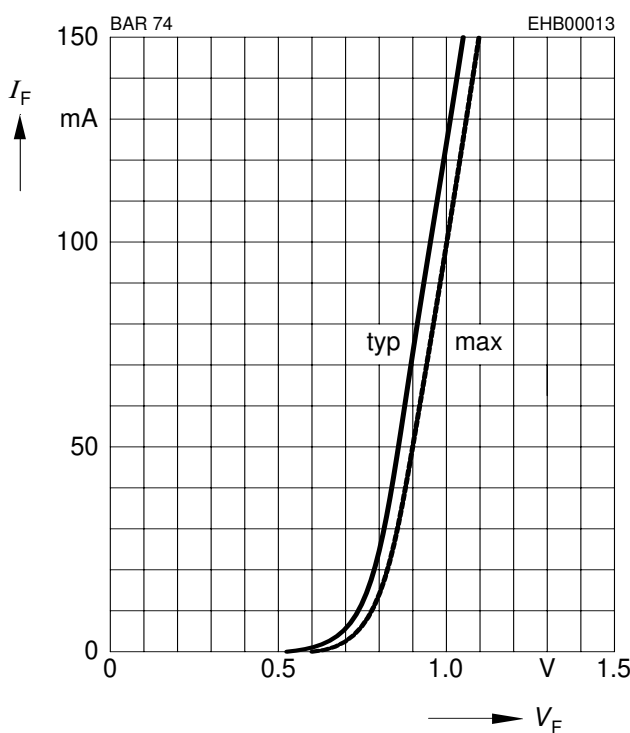


**Forward Voltage  $V_F = f(T_A)$**

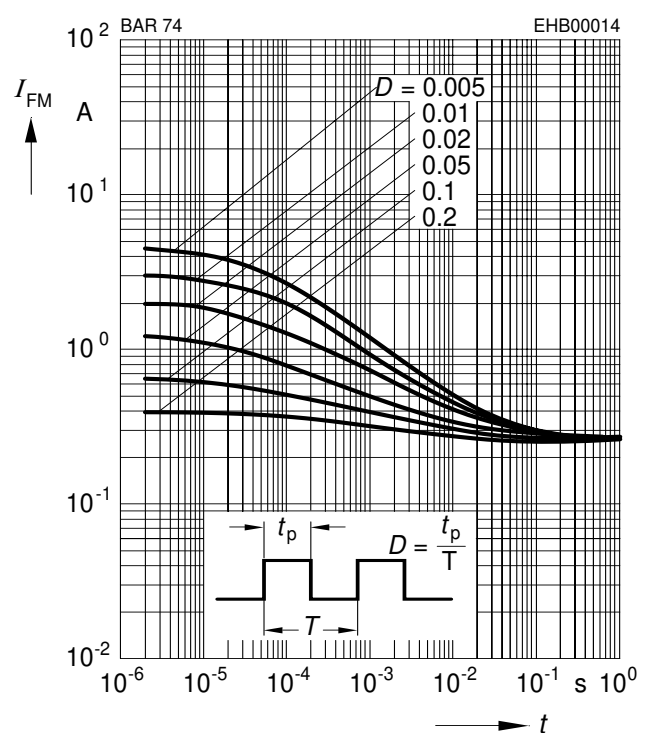
$I_F = \text{Parameter}$



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

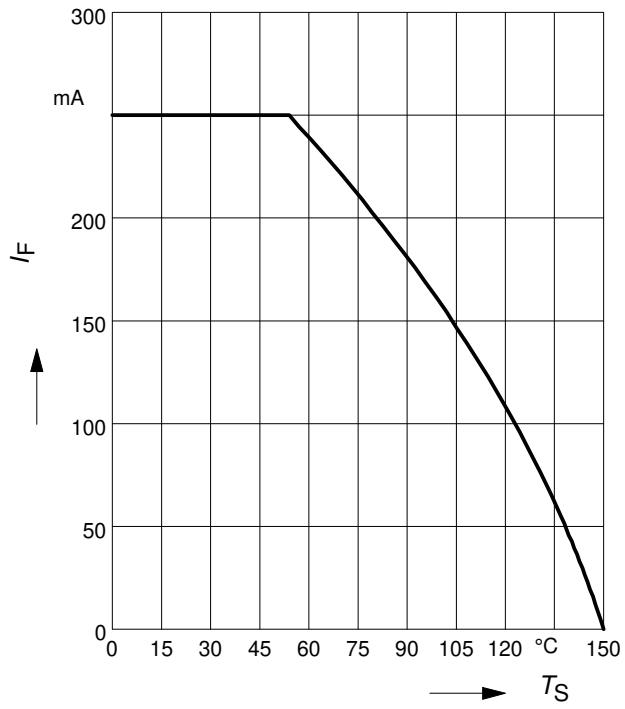


**Peak forward current  $I_{FM} = f(t_p)$**

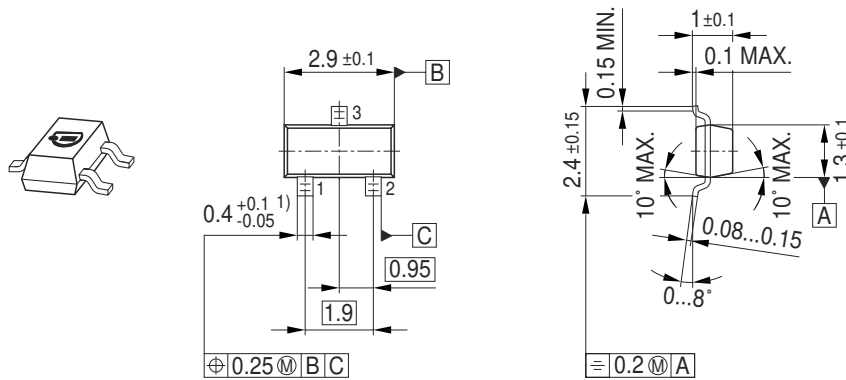


Forward current  $I_F = f(T_S)$

BAL74, BAR74

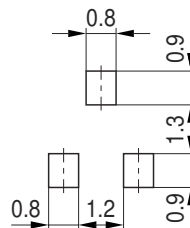


Package Outline

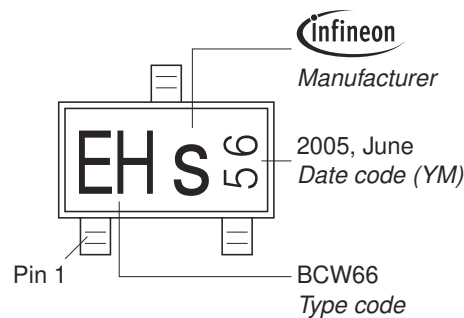


1) Lead width can be 0.6 max. in dambar area

Foot Print

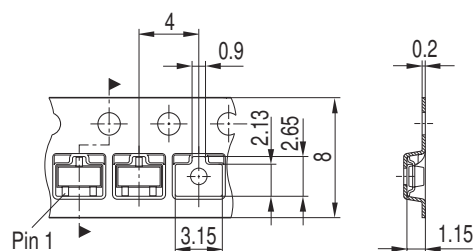


Marking Layout (Example)



Standard Packing

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



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