

**Silicon Low Leakage Diode**

- Low-leakage applications
- Medium speed switching times
- Pb-free (RoHS compliant) package <sup>1)</sup>
- Qualified according AEC Q101


**BAS116**


Type	Package	Configuration	Marking
BAS116	SOT23	single	JVs

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	80	V
Peak reverse voltage	$V_{RM}$	85	
Forward current	$I_F$	250	mA
Non-repetitive peak surge forward current	$I_{FSM}$		A
$t = 1 \mu\text{s}$		4.5	
$t = 1 \text{s}$		0.5	
Total power dissipation $T_S \leq 54^\circ\text{C}$	$P_{tot}$	370	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-65 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>2)</sup>	$R_{thJS}$	$\leq 260$	K/W
BAS116			

<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 $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$	85	-	-	V
Reverse current $V_R = 75 \text{ V}$ $V_R = 75 \text{ V}, T_A = 150^\circ\text{C}$	$I_R$	-	-	5 80	nA
Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 150 \text{ mA}$	$V_F$	-	-	900 1000 1100 1250	mV

**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 $I_R = 1 \text{ mA}$ , $R_L = 100 \Omega$	$t_{rr}$	-	0.6	1.5	$\mu\text{s}$

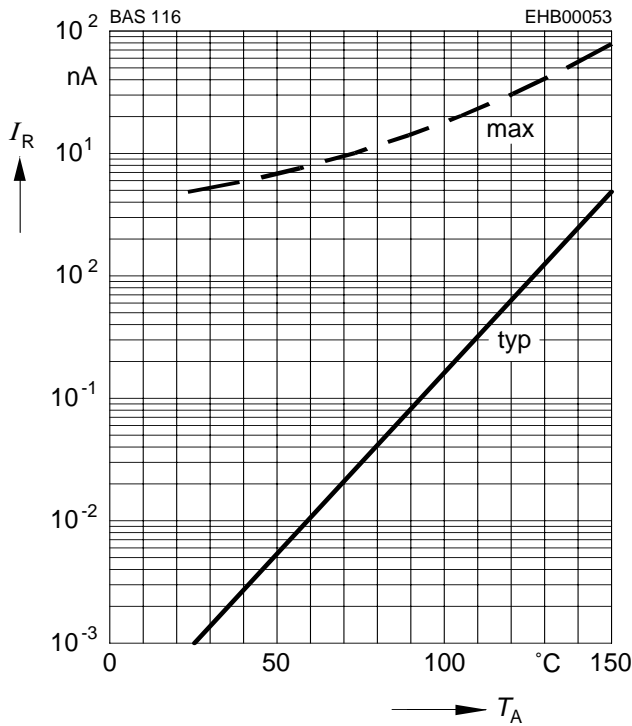
**Test circuit for reverse recovery time**


Puls generator:  $t_p = 10 \mu\text{s}$ ,  $D = 0.05$ ,  
 $t_r = 0.6 \text{ ns}$ ,  $R_i = 50 \Omega$

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

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

$V_R = \text{Parameter}$



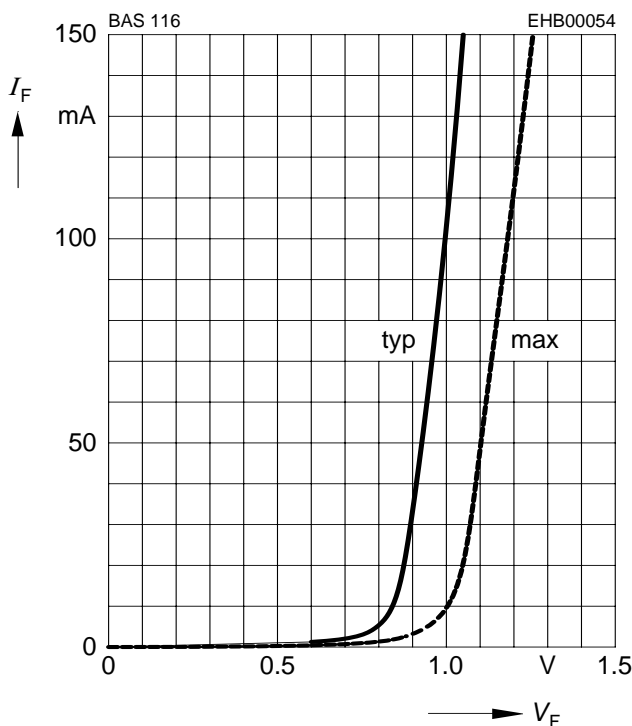
**Forward Voltage  $V_F = f(T_A)$**

$I_F = \text{Parameter}$



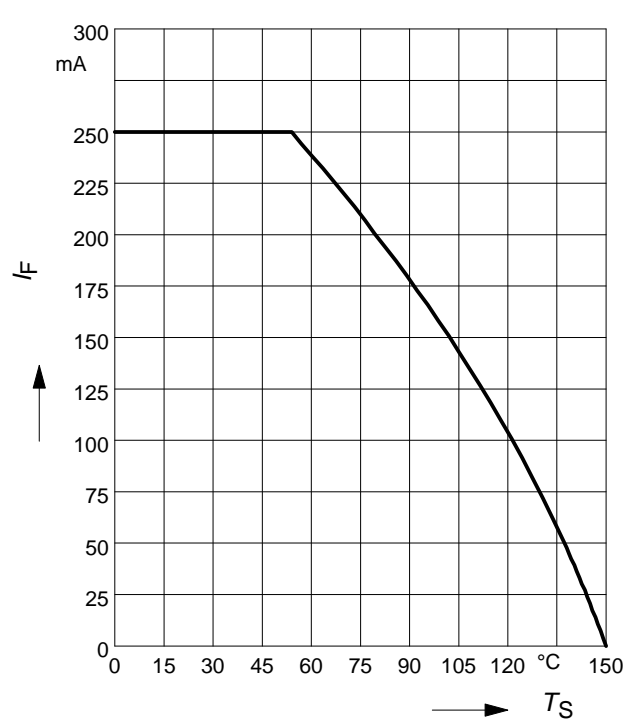
**Forward current  $I_F = f(V_F)$**

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



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

BAS116



Permissible Puls Load  $R_{thJS} = f(t_p)$

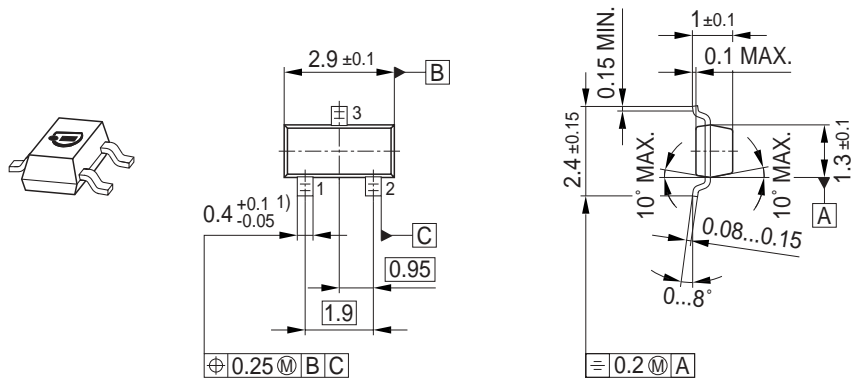


Permissible Pulse Load

$I_{Fmax} / I_{FDC} = f(t_p)$

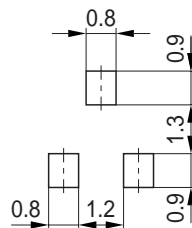


Package Outline



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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