

Silicon Schottky Diode

- High current rectifier Schottky diode with very low V_F drop (typ. 0.24 V at $I_F = 10\text{mA}$)
- For power supply applications
- For clamping and protection in low voltage applications
- For detection and step-up-conversion
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



BAT60B



ESD (Electrostatic discharge) sensitive device, observe handling precaution!

Type	Package	Configuration	Marking
BAT60B	SOD323	single	white/5

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

Parameter	Symbol	Value	Unit
Diode reverse voltage ²⁾	V_R	10	V
Forward current	I_F	3	A
Non-repetitive peak surge forward current ($t \leq 10\text{ms}$)	I_{FSM}	5	
Total power dissipation $T_S \leq 28^\circ\text{C}$	P_{tot}	1350	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

¹⁾Pb-containing package may be available upon special request

²⁾For $T_A > 25^\circ\text{C}$ the derating of V_R has to be considered. Please refer to curve Permissible reverse voltage.

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}	≤ 90	K/W

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Reverse current ²⁾	I_R				μA
$V_R = 5\text{ V}$		-	5	15	
$V_R = 8\text{ V}$		-	10	25	
$V_R = 5\text{ V}, T_A = 80^\circ\text{C}$		-	100	800	
$V_R = 8\text{ V}, T_A = 80^\circ\text{C}$		-	410	1500	
Forward voltage ²⁾	V_F				V
$I_F = 10\text{ mA}$		0.2	0.24	0.3	
$I_F = 100\text{ mA}$		0.26	0.32	0.38	
$I_F = 500\text{ mA}$		0.32	0.4	0.5	
$I_F = 1000\text{ mA}$		0.36	0.48	0.6	

AC Characteristics

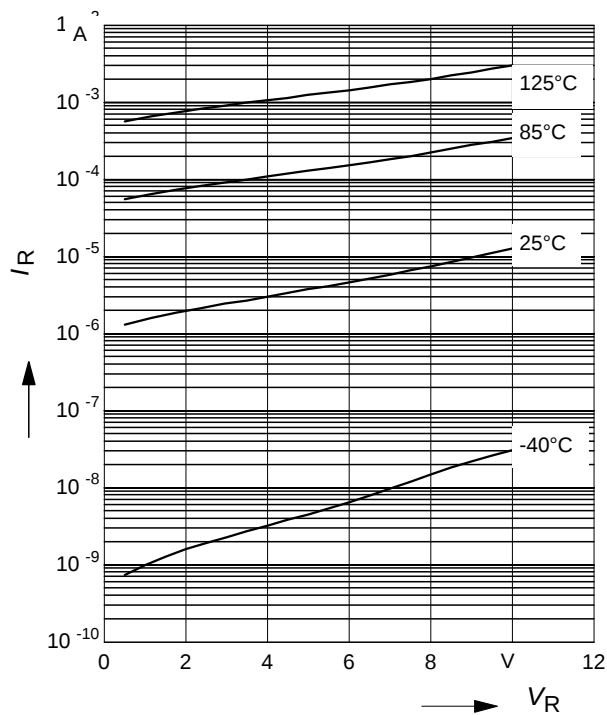
Diode capacitance	C_T	12	25	30	pF
$V_R = 5\text{ V}, f = 1\text{ MHz}$					

¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

²⁾Pulsed test: $t_p = 300\text{ }\mu\text{s}$; $D = 0.01$

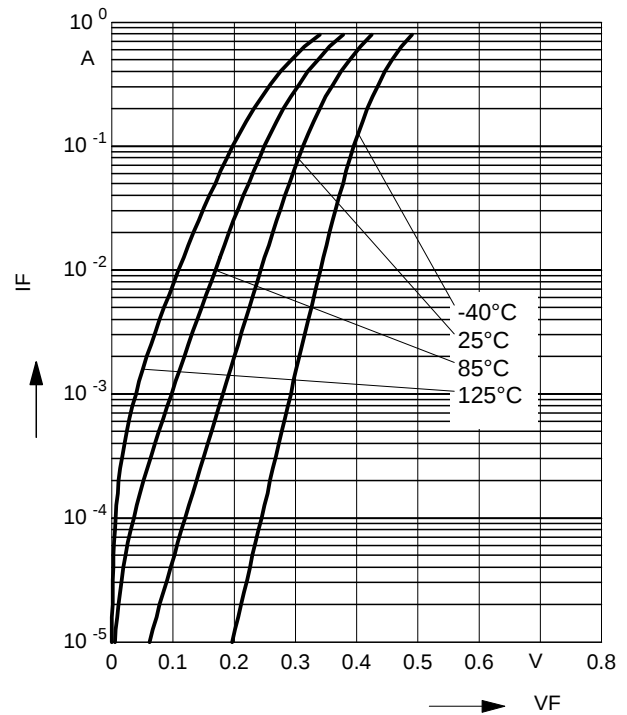
Reverse current $I_R = f(V_R)$

T_A = Parameter



Forward current $I_F = f(V_F)$

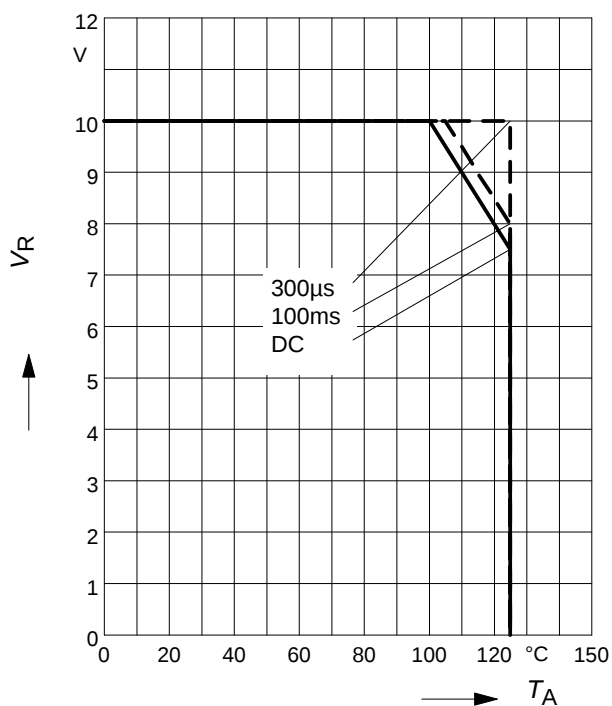
T_A = Parameter



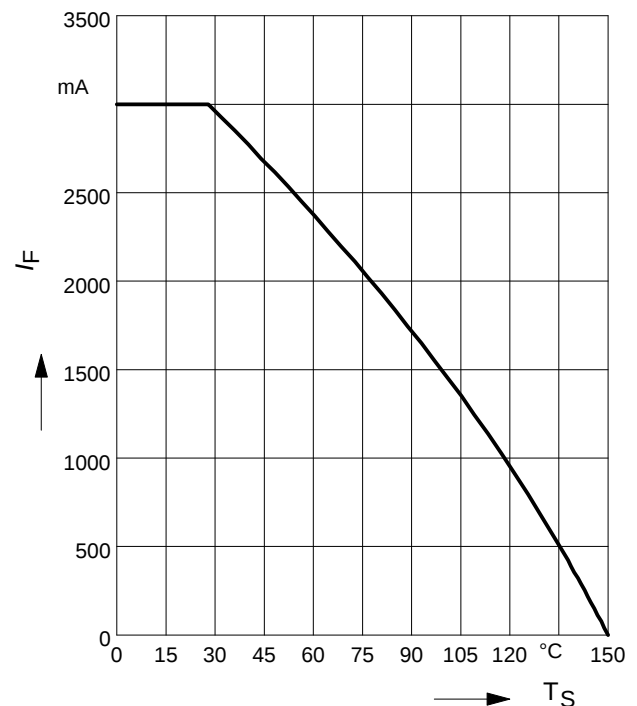
Permissible Reverse voltage $V_R = f(T_A)$

t_p = Parameter; duty cycle < 0.01

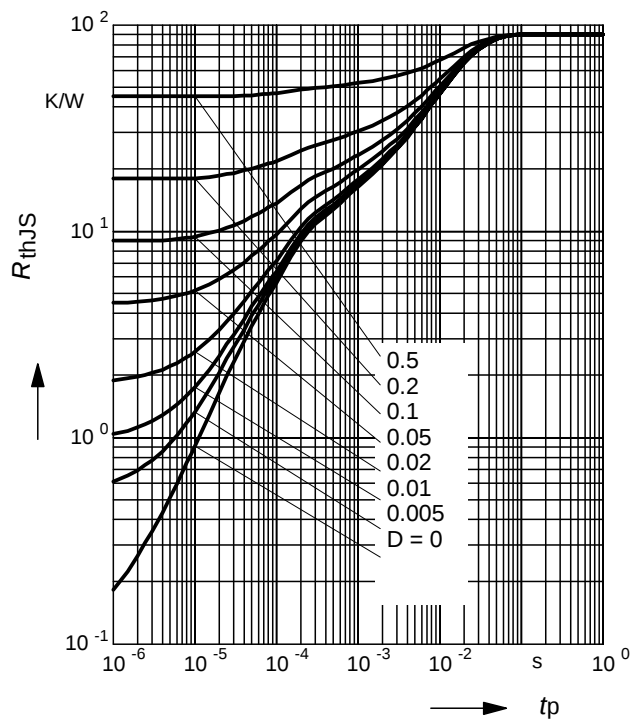
Device mounted on PCB with $R_{th} = 160$ K/W



Forward current $I_F = f(T_S)$

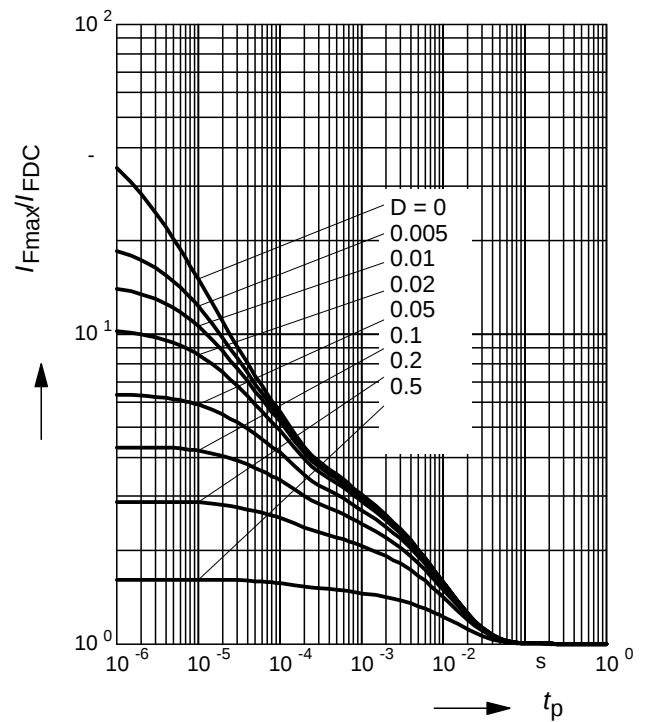


Permissible Puls Load $R_{thJS} = f(t_p)$



Permissible Pulse Load

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



Package Outline



Foot Print

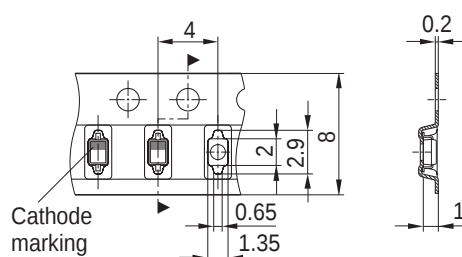


Marking Layout (Example)



Standard Packing

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



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

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