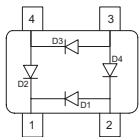


Silicon Switching Diode Array

- Bridge configuration
- High-speed switching diode chip
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



BGX50A



Type	Package	Configuration	Marking
BGX50A	SOT143	bridge	U1s

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}	70	
Forward current	I_F	140	mA
Non-repetitive peak surge forward current	I_{FSM}	-	
Total power dissipation $T_S \leq 74^\circ\text{C}$	P_{tot}	210	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ²⁾ BGX50A	R_{thJS}	360	K/W

¹Pb-containing package may be available upon special request

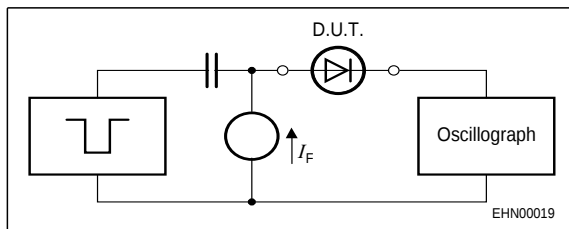
²For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage	$V_{(BR)}$	-	-	-	
Reverse current	I_R				μA
$V_R = 50\text{ V}$		-	-	0.2	
$V_R = 50\text{ V}, T_A = 150\text{ }^{\circ}\text{C}$		-	-	100	
Forward voltage	V_F	-	-	1.3	V
$I_F = 100\text{ mA}$					

AC Characteristics					
Diode capacitance	C_T	-	-	1.5	pF
$V_R = 0\text{ V}, f = 1\text{ MHz}$					
Reverse recovery time	t_{rr}	-	-	6	ns
$I_F = 10\text{ mA}, I_R = 10\text{ mA}$, measured at $I_R = 1\text{ mA}$, $R_L = 100\ \Omega$					

Test circuit for reverse recovery time

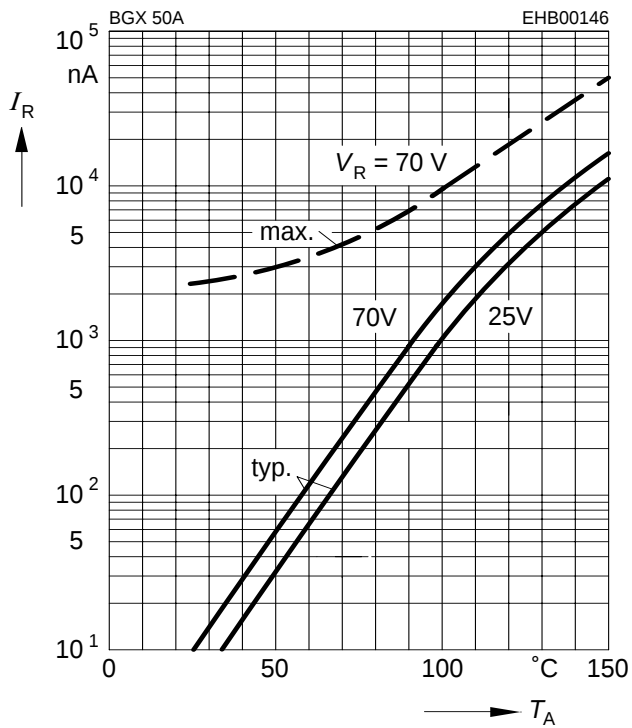


Pulse generator: $t_p = 100\text{ ns}$, $D = 0.05$, $t_r = 0.6\text{ ns}$,
 $R_i = 50\ \Omega$

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

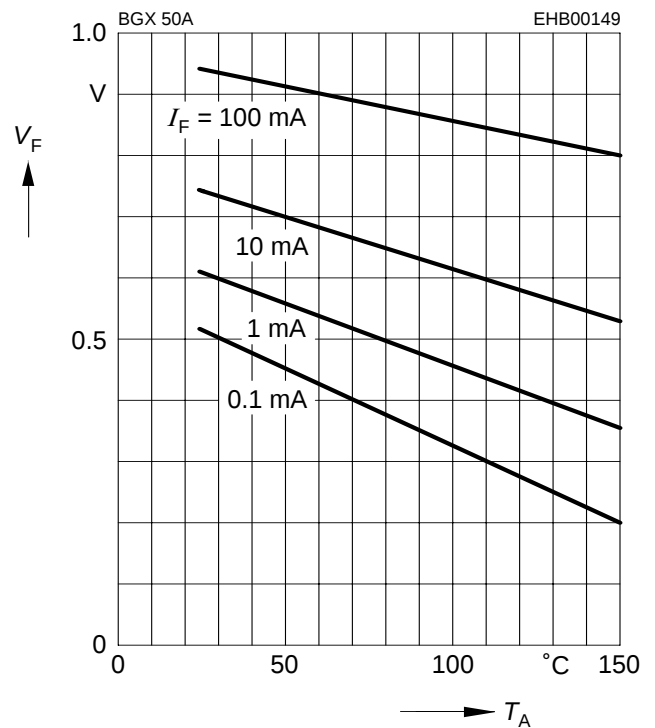
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



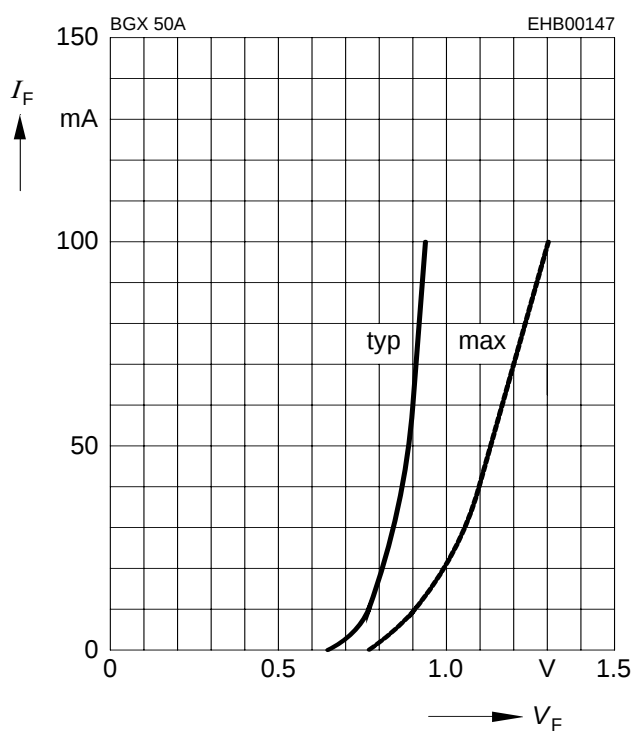
Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



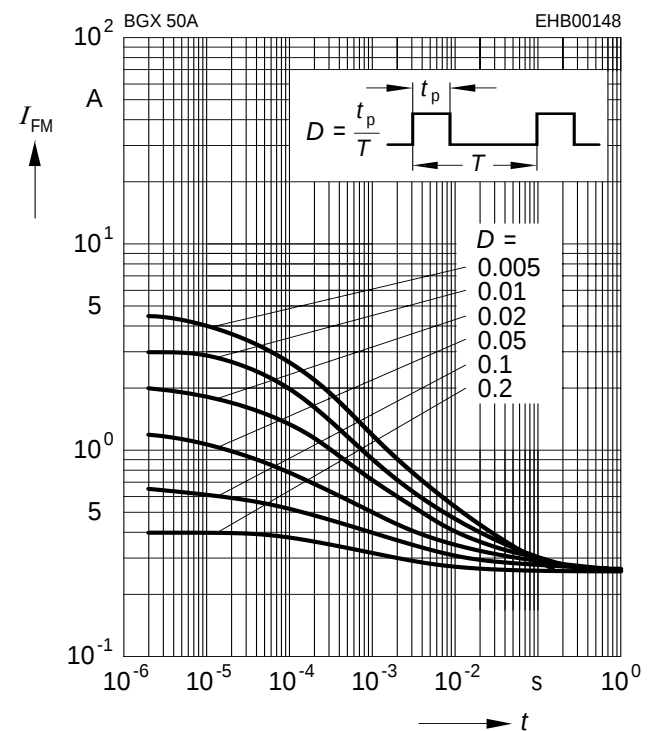
Forward current $I_F = f(V_F)$

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



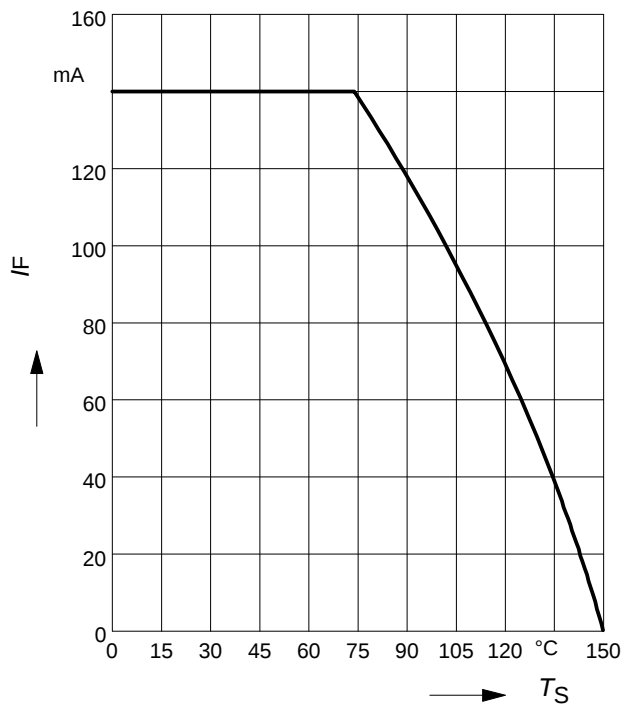
Peak forward current $I_{FM} = f(t_p)$

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



Forward current $I_F = f(T_S)$

BGX50A



The technical drawing shows two views of a 4-pin connector:

- Top View (Left):** Shows a rectangular component with four pins labeled 1, 2, 3, and 4. Dimensions include a total width of 2.9 ± 0.1 , a pin pitch of 1.9 , and a mounting hole diameter of $\varnothing 0.2$. The distance from the edge to the first pin is $0.8^{+0.1}_{-0.05}$.
- Side View (Right):** Shows the profile of the connector. Key dimensions include a maximum height of 1 ± 0.1 , a minimum standoff of 0.15 MIN. , a maximum thickness of 0.1 MAX. , and a maximum length of 2.4 ± 0.15 . It also specifies corner radii of $R_{10^\circ} \text{ MAX.}$ and a bottom flange thickness of $0.08 \dots 0.15$ at a $0 \dots 8^\circ$ angle.

Diagram illustrating the marking on the BFP181 package:

- Manufacturer:** infineon
- Date code (YM):** 2005, June
- Pin 1:** Indicated by a line pointing to the first pin.
- Type code:** BFP181

Technical drawing of a mechanical part showing top and side views with dimensions:

- Top View Dimensions:**
 - Overall width: 4
 - Overall height: 8
 - Distance from left edge to center of first hole: 3.15
 - Distance between centers of first and second holes: 2.6
 - Distance between centers of second and third holes: 2.6
 - Distance from center of third hole to right edge: 2.6
- Side View Dimensions:**
 - Overall height: 1.15
 - Distance from top edge to center of hole: 0.2
- Other Features:**
 - Three circular holes are shown in the top view.
 - A rectangular feature is shown on the left side of the top view.
 - A dimension line labeled "Pin 1" points to the left edge of the part.

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