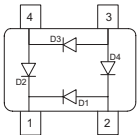


Silicon Switching Diode Array

- 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	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

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

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

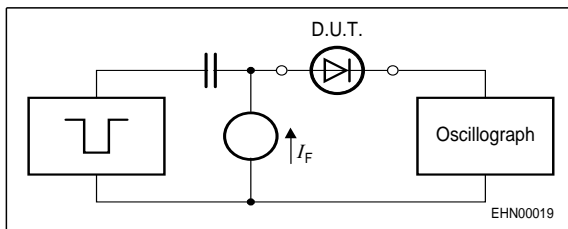
²⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

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

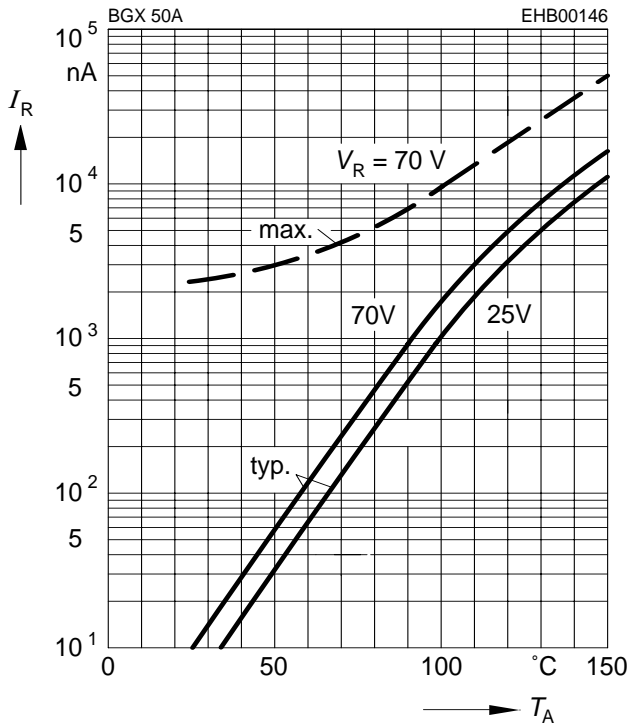
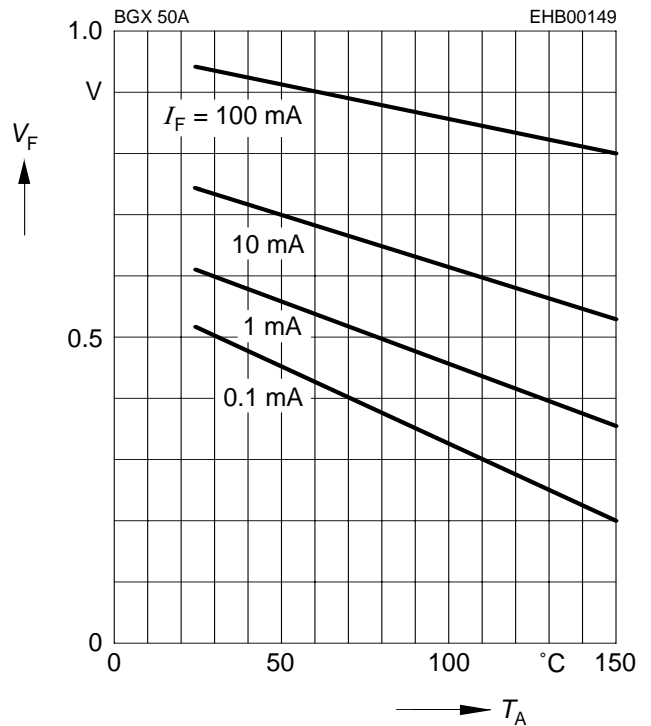
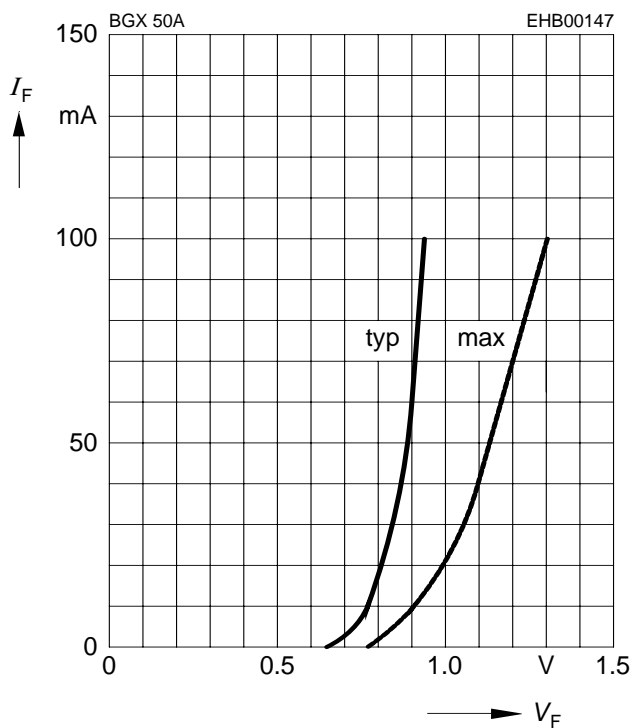
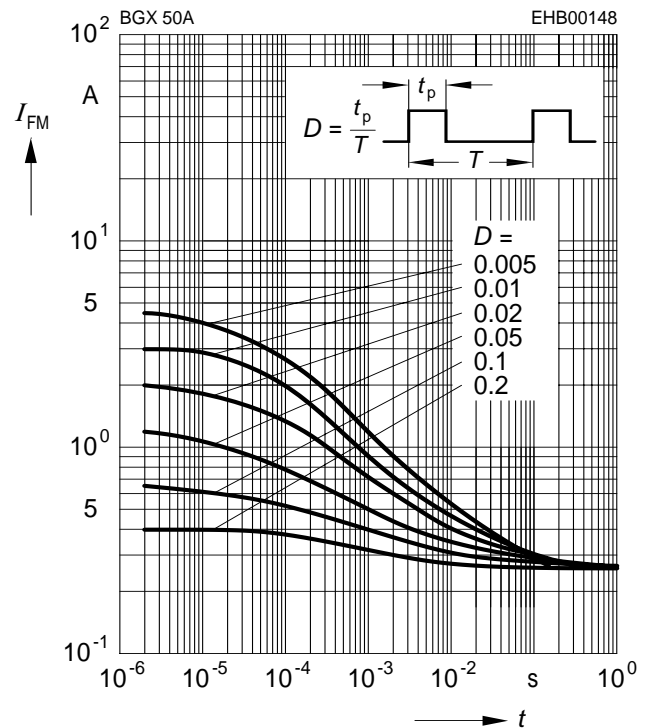
AC Characteristics

Diode capacitance	C_T	-	-	1.5	μF
$V_R = 0\text{ V}, f = 1\text{ MHz}$					
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


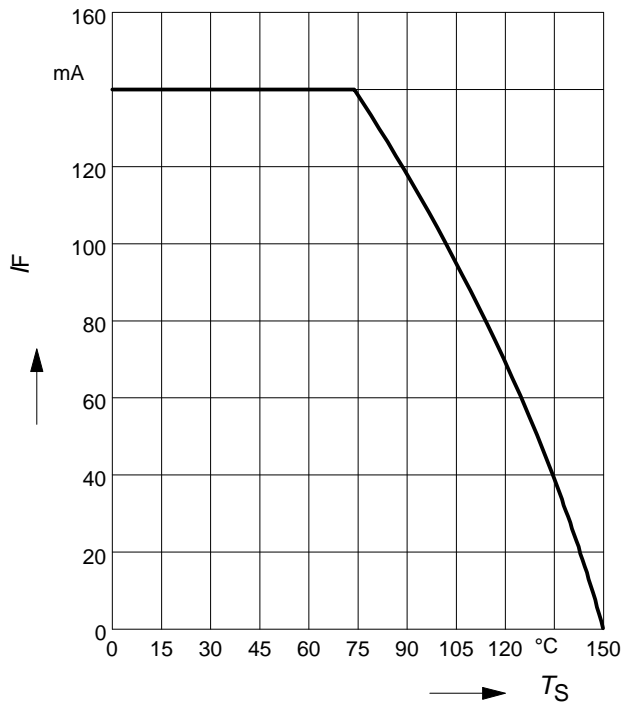
Pulse generator: $t_p = 100\text{ ns}$, $D = 0.05$, $t_r = 0.6\text{ ns}$,
 $R_i = 50\ \Omega$

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



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