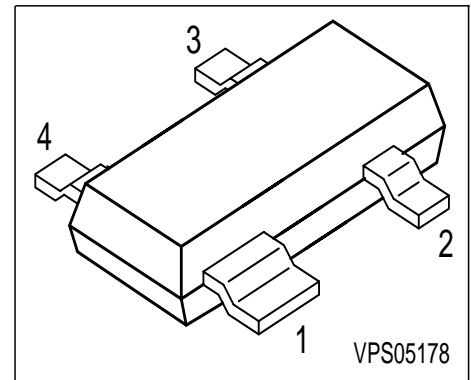
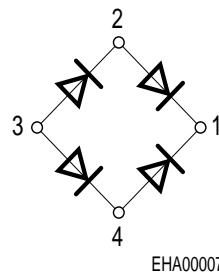


- Bridge configuration
- High-speed switching diode chip



Type	Marking	Pin Configuration				Package
BGX50A	U1s	1=C1/C2	2=A1/C4	3=A3/A4	4=A2/C3	SOT143

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	50	V
Peak reverse voltage	V_{RM}	70	
Forward current	I_F	140	mA
Total power dissipation, $T_S = 74\text{ °C}$	P_{tot}	210	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	65 ... 150	

Thermal Resistance

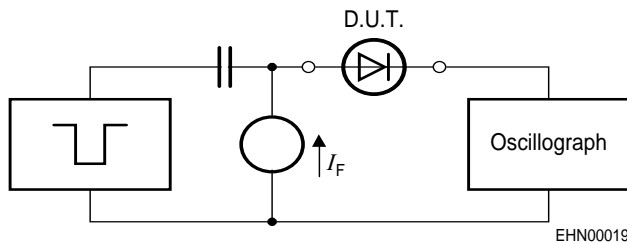
Junction - soldering point ¹⁾	R_{thJS}	≤ 360	K/W
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¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Forward voltage $I_F = 100 \text{ mA}$	V_F	-	-	1.3	V
Reverse current $V_R = 50 \text{ V}$	I_R	-	-	0.2	μA
Reverse current $V_R = 50 \text{ V}, T_A = 150^\circ\text{C}$	I_R	-	-	100	
AC characteristics					
Diode capacitance $V_R = 0 \text{ V}, f = 1 \text{ MHz}$	C_D	-	-	1.5	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, R_L = 100 \Omega$, measured at $I_R = 1 \text{ mA}$	t_{rr}	-	-	6	ns

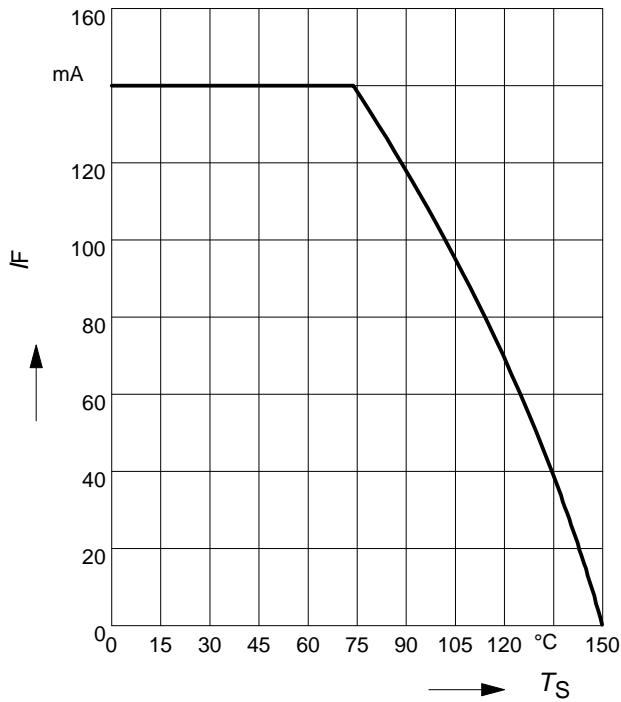
Test circuit for reverse recovery time



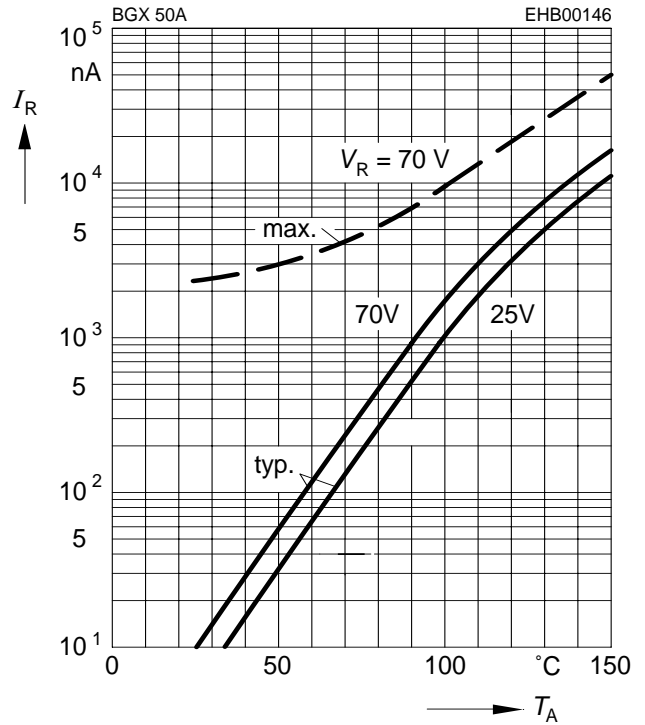
Pulse generator: $t_p = 100\text{ns}$, $D = 0.05$,
 $t_f = 0.6\text{ns}$, $R_i = 50\Omega$

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

Forward current $I_F = f(T_S)$

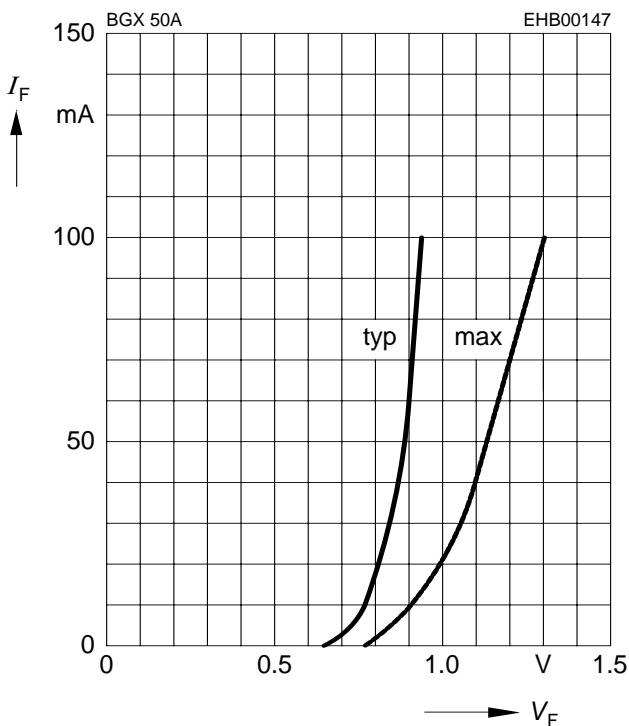


Reverse current $I_R = f(T_A)$



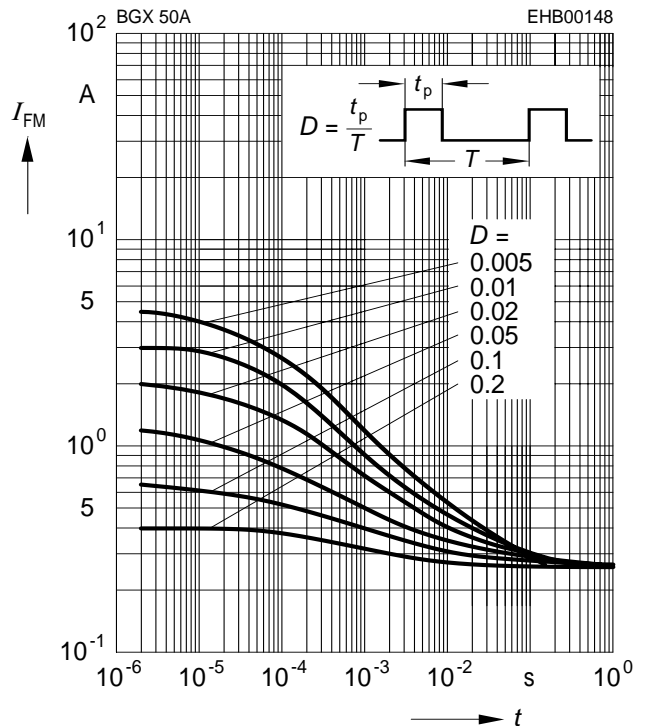
Forward current $I_F = f(V_F)$

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

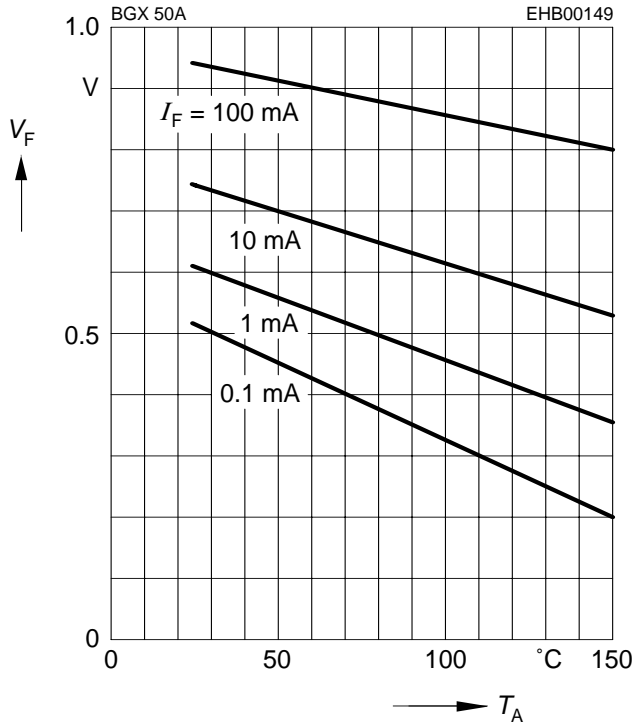


Peak forward current $I_{FM} = f(t_p)$

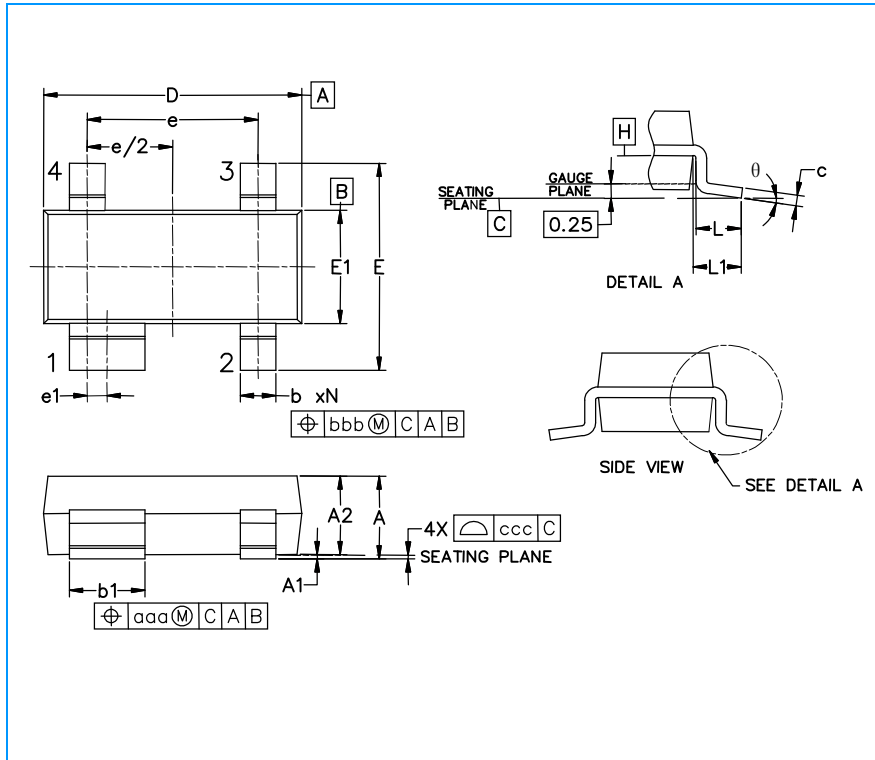
$T_A = 25^\circ\text{C}$



Forward voltage $V_F = f(T_A)$



SOT-143 Package Outline & Dimensions



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	-	0.048	0.80	-	1.22
A1	0.000	-	0.008	0.013	-	0.15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	-	0.020	0.30	-	0.51
b1	0.029	-	0.037	0.76	-	0.94
c	0.003	-	0.008	0.08	-	0.20
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.92 BSC		
e1	0.008			0.20 BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)			(0.54)		
N	4			4		
theta	0°	-	8°	0°	-	8°
aaa	0.006			0.15		
bbb	0.008			0.20		
ccc	0.004			0.10		