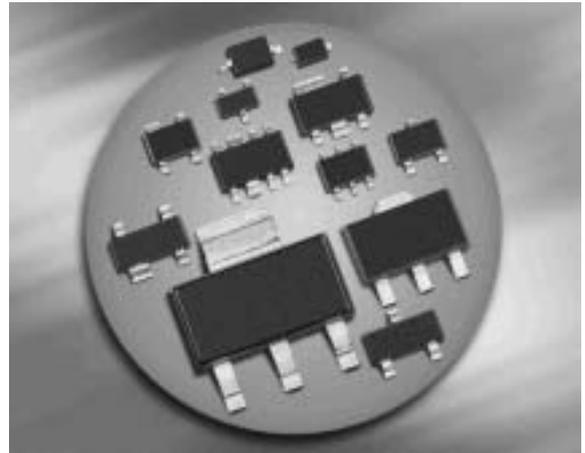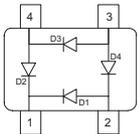## Silicon Switching Diode Array

- Bridge configuration

- High-speed switching diode chip

- Pb-free (RoHS compliant) package[1]

- Qualified according AEC Q101

BGX50A

Type	Package	Configuration	Marking
BGX50A	SOT143	bridge	U1s

Maximum Ratings at T_A = 25°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 $T_S \leq 74°C$	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

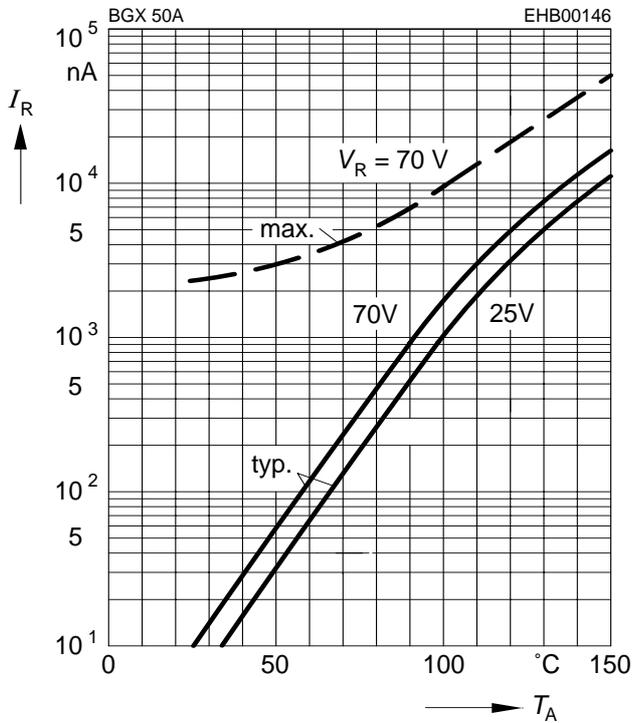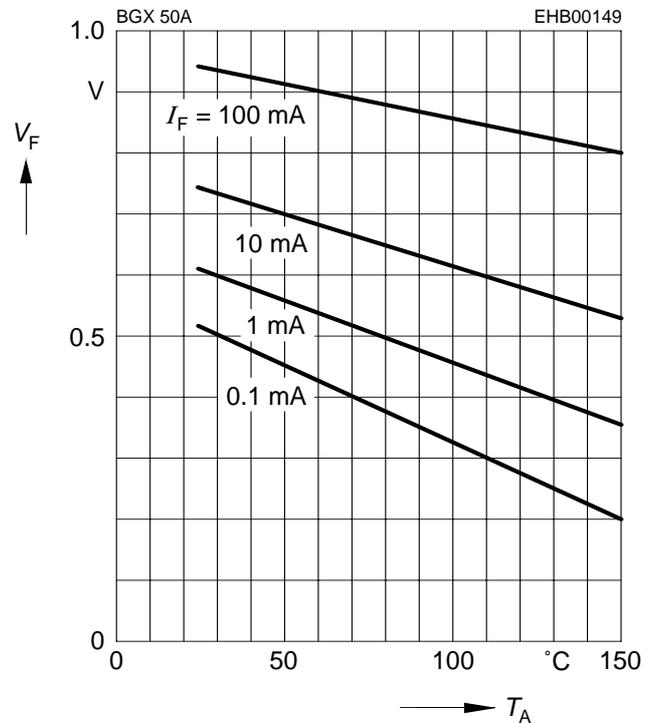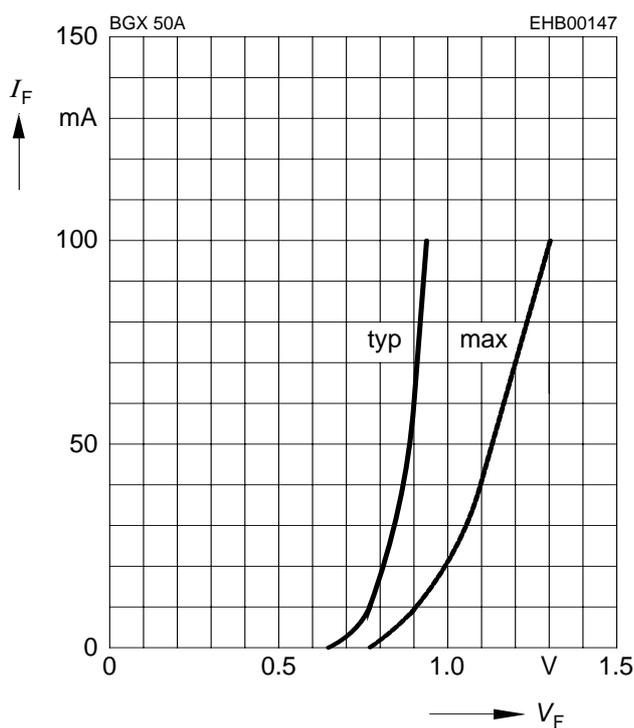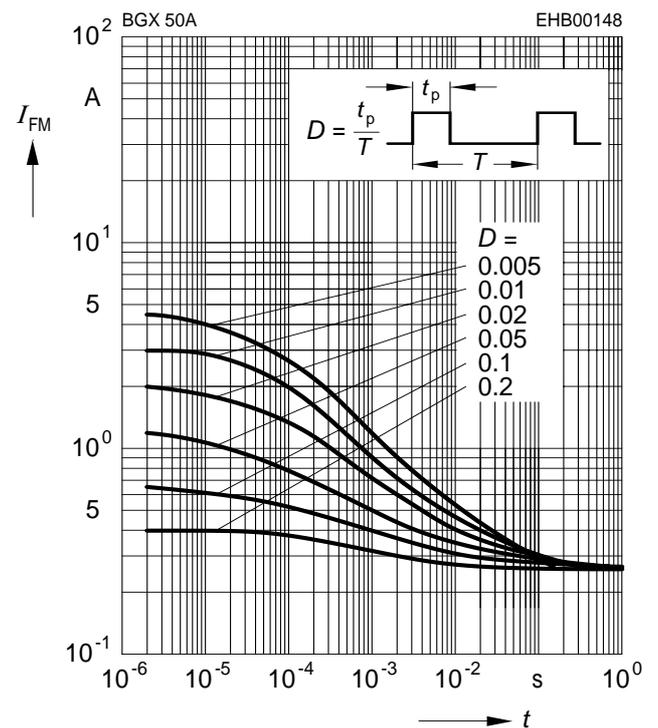2007-03-27

Electrical Characteristics at $T_A = 25°C$, unless otherwise specified

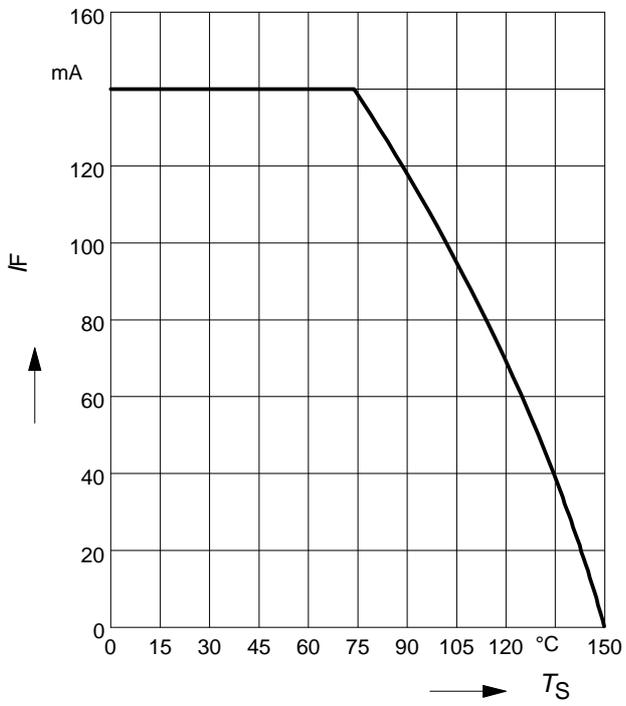| Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage	$V_{(BR)}$	-	-	-	
Reverse current	I_R				µA
$V_R = 50$ V		-	-	0.2	
$V_R = 50$ V, $T_A = 150$ °C		-	-	100	
Forward voltage	V_F	-	-	1.3	V
$I_F = 100$ mA					
AC Characteristics					
Diode capacitance	C_T	-	-	1.5	pF
$V_R = 0$ V, $f = 1$ MHz					
Reverse recovery time	t_{rr}	-	-	6	ns
$I_F = 10$ mA, $I_R = 10$ mA, measured at $I_R = 1$mA ,					
$R_L = 100$ Ω					

Test circuit for reverse recovery time
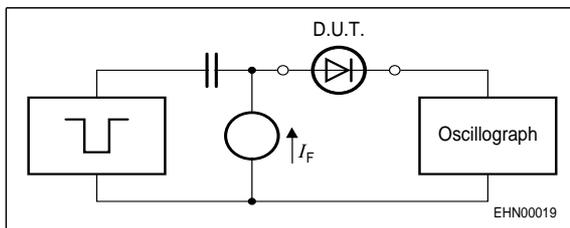
Pulse generator: $t_p = 100$ns, $D = 0.05$, $t_r = 0.6$ns, $R_i = 50$Ω

Oscillograph: $R = 50$Ω, $t_f = 0.35$ns, $C \leq 1$pF

Reverse current $I_R = f(T_A)$

V_R = Parameter

BGX 50A   EHB00146

V_R = 70 V

max.

70V   25V

typ.

Forward Voltage $V_F = f(T_A)$

I_F = Parameter

BGX 50A   EHB00149

I_F = 100 mA

10 mA

1 mA

0.1 mA

Forward current $I_F = f(V_F)$

$T_A = 25°C$

BGX 50A   EHB00147

typ   max

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

$T_A = 25°C$

BGX 50A   EHB00148

$D = \dfrac{t_p}{T}$

$D =$
0.005
0.01
0.02
0.05
0.1
0.2

3   2007-03-27

Forward current $I_F = f\,(T_S)$

BGX50A

2007-03-27

Package Outline


```
2.9 ±0.1          B
  1.9
4        3
          1          2
  0.2
0.8 +0.1 -0.05
          0.4 +0.1 -0.05    ⊕ 0.25 Ⓜ B
  1.7
```

```
0.15 MIN.    1 ±0.1
             0.1 MAX.
2.4 ±0.15
10° MAX.    10° MAX.    1.3 ±0.1
                              A
0.08...0.15
0...8°
= 0.2 Ⓜ A
```

Foot Print

```
0.8  1.2  0.8
                 0.9
                 1.1
1.2      0.8     0.9
0.8
```

Marking Layout (Example)

Infineon
Manufacturer

RF s 56

2005, June
Date code (YM)

Pin 1
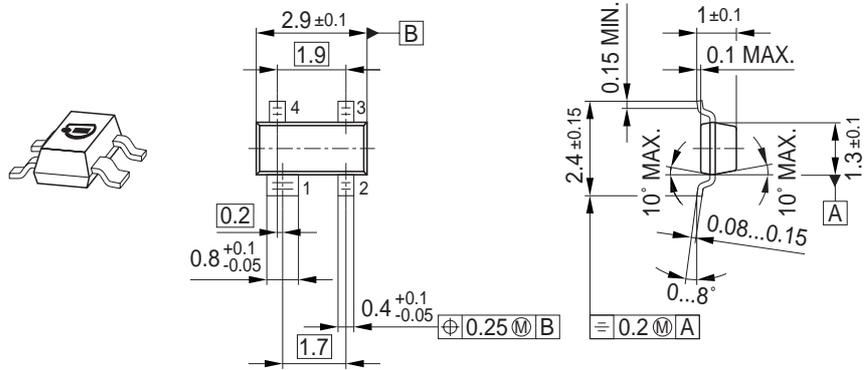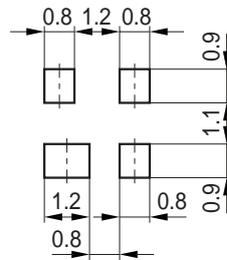
BFP181
Type code
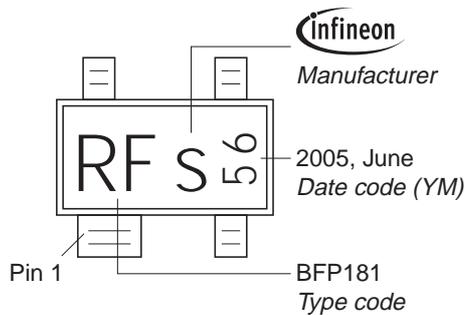
Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel
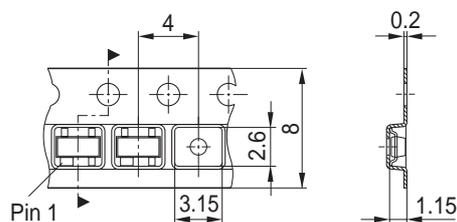
```
        4                    0.2
  ▶
                    8
              2.6
Pin 1  ▶  3.15          1.15
```

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