![Chipsmall logo]

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!


Contact us

Silicon Schottky Diodes

- Low barrier type for DBS mixer applications up to 12 GHz, phase detectors and modulators
- Low noise figure
- Pb-free (RoHS compliant) package

RoHS ✓
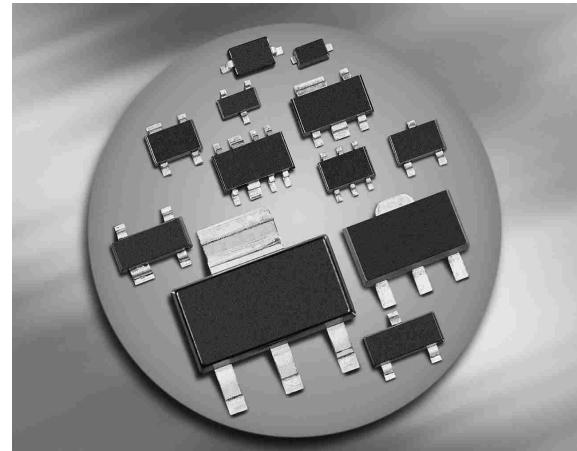
| **BAT15-02EL** **BAT15-02ELS** **BAT15-03W**	**BAT15-04W**	**BAT15-05W**	**BAT15-099**	**BAT15-099R**
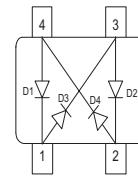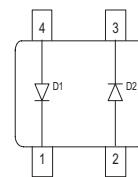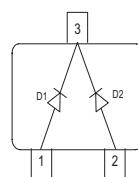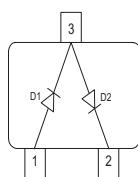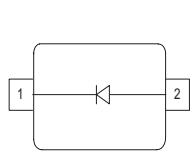
ESD (**E**lectro**s**tatic **d**ischarge) sensitive device, observe handling precaution!

Type	Package	Configuration	L_S(nH)	Marking
BAT15-02EL	TSLP-2-19	single, leadless	0.4	NN
BAT15-02ELS	TSSLP-2-3	single, leadless	0.2	S underline
BAT15-03W	SOD323	single	1.8	white P
BAT15-04W	SOT323	series	1.4	S8s
BAT15-05W	SOT323	common cathode	1.4	S5s
BAT15-099	SOT143	anti-parallel pair	2	S5s
BAT15-099R	SOT143	cross-over ring	2	S6s

2015-01-27

Maximum Ratings at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	4	V
Forward current	I_F	110	mA
Total power dissipation	P_{tot}		
BAT15-02ELS, $T_S \leq 73$ °C		100	
BAT15-02EL, $T_S \leq 76$ °C		100	
BAT15-03W, $T_S \leq 70$ °C		100	
BAT15-04W, $T_S \leq 68$ °C		100	
BAT15-05W, $T_S \leq 65$ °C		100	
BAT15-099, $T_S \leq 48$ °C		100	
BAT15-099R, $T_S \leq 67$ °C		100	
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 150	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1]	R_{thJS}		
BAT15-02ELS		≤ 770	
BAT15-02EL		≤ 780	
BAT15-03W		≤ 795	
BAT15-04W		≤ 820	
BAT15-05W		≤ 850	
BAT15-099		≤ 1020	
BAT15-099R		≤ 830	

[1]For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

2015-01-27

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 100 µA	$V_{(BR)}$	4	-	-	V
Reverse current V_R = 1 V	I_R	-	-	5	µA
Forward voltage I_F = 1 mA I_F = 10 mA	V_F	 0.16 0.25	 0.23 0.32	 0.32 0.41	V
Forward voltage matching[1] I_F = 10 mA	ΔV_F	-	-	20	mV
AC Characteristics					
Diode capacitance V_R = 0 V, f = 1 MHz, BAT15-02ELS V_R = 0 V, f = 1 MHz, BAT15-099R V_R = 0 V, f = 1 MHz, all others types	C_T	 - - -	 - - -	 0.23 0.5 0.35	pF
Differential forward resistance I_F = 10 mA / 50 mA	R_F	-	5.5	-	Ω

[1]ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

2015-01-27

**Diode capacitance** $C_T = f(V_R)$

f = 1MHz

EHD07082
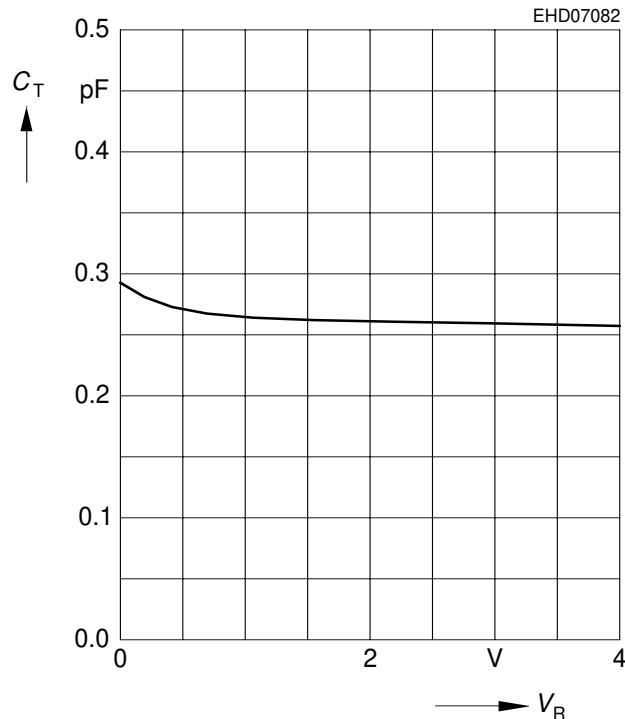
Reverse current $I_R = f(V_R)$

T_A = Parameter

EHD07081
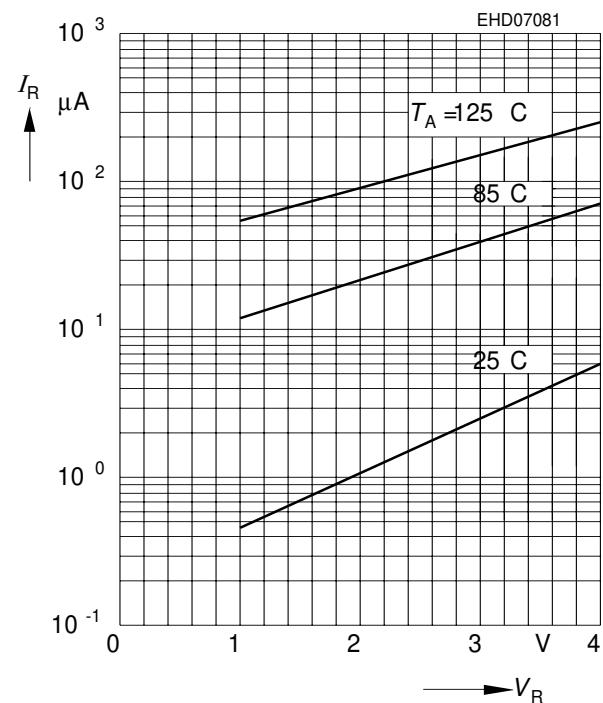
Forward current $I_F = f(V_F)$

T_A = Parameter

BAT 15-099R   EHD07077

T_A = -40 °C
25 °C
85 °C
125 °C

Forward current $I_F = f(T_S)$

BAT15-02EL

2015-01-27
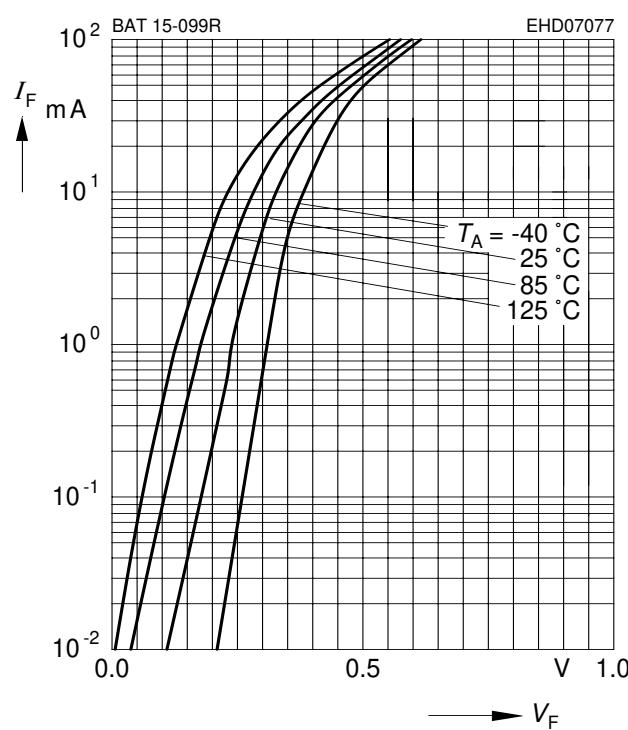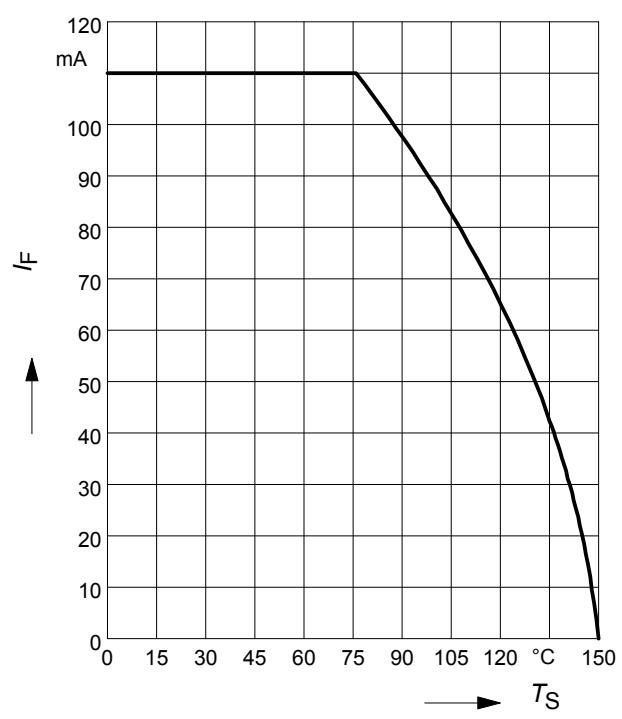
**Forward current** $I_F = f(T_S)$
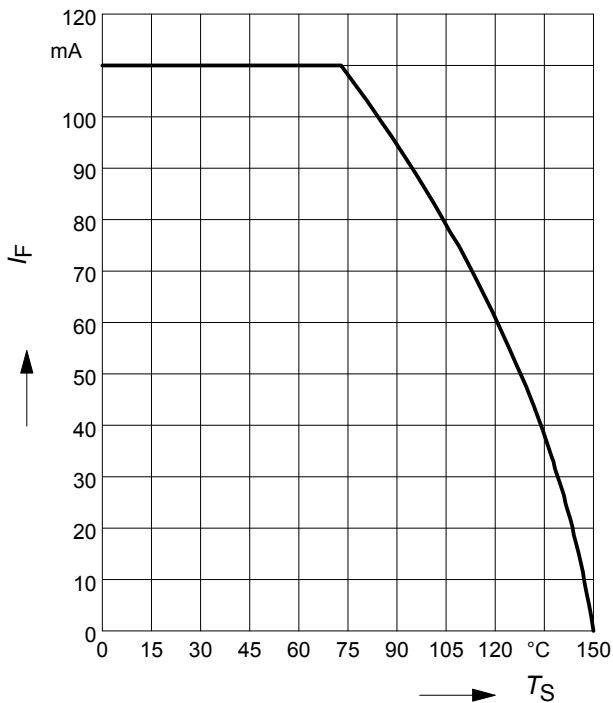
BAT15-02ELS

Forward current $I_F = f(T_S)$

BAT15-03W
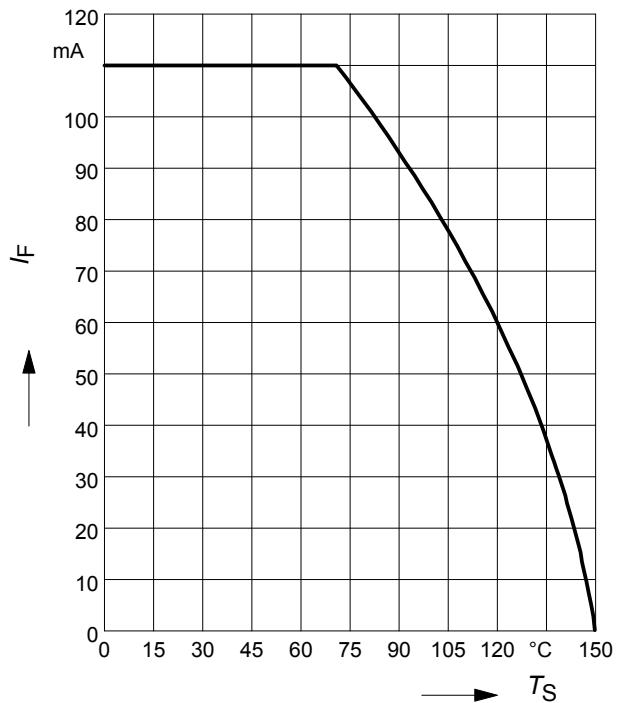
Forward current $I_F = f(T_S)$

BAT15-04W
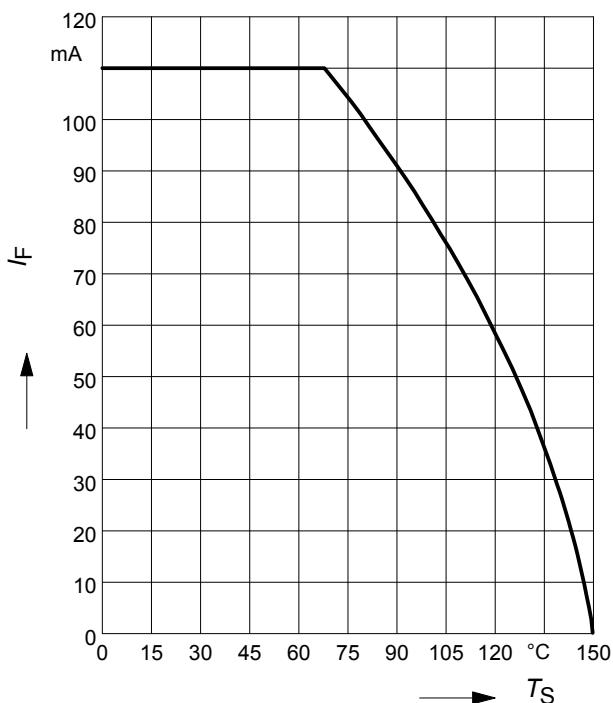
Forward current $I_F = f(T_S)$

BAT15-05W


5
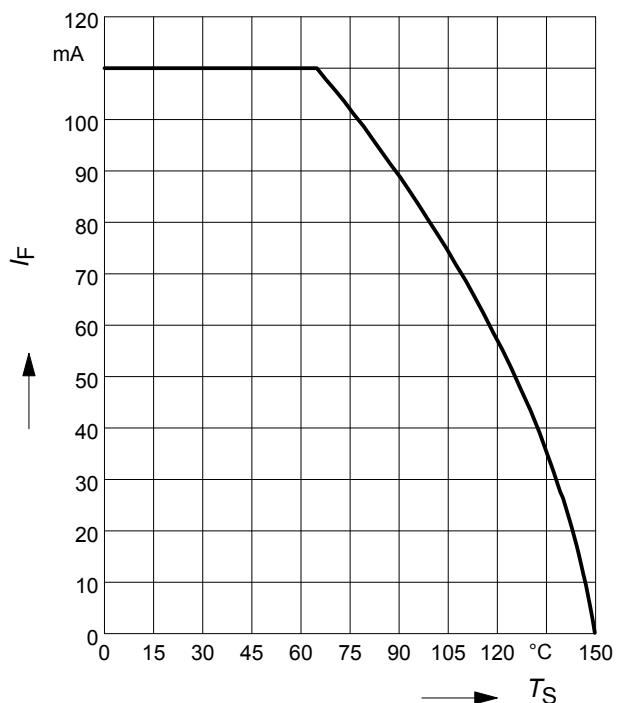
Forward current $I_F = f(T_S)$
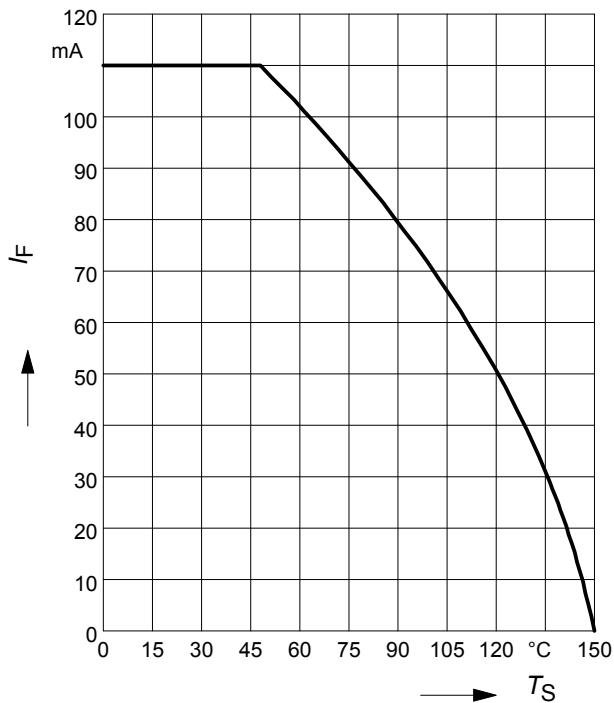
BAT15-099

Forward current $I_F = f(T_S)$

BAT15-099R
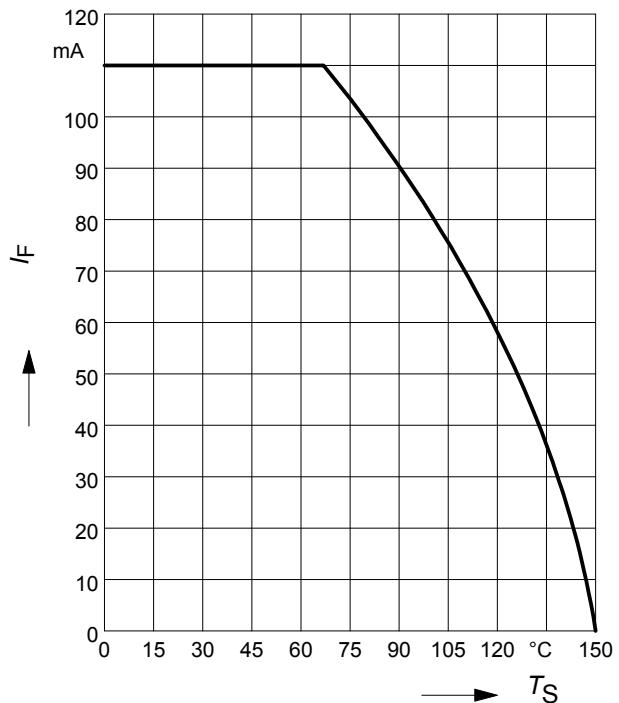
Permissible Puls Load $R_{thJS} = f(t_p)$

BAT15-02EL
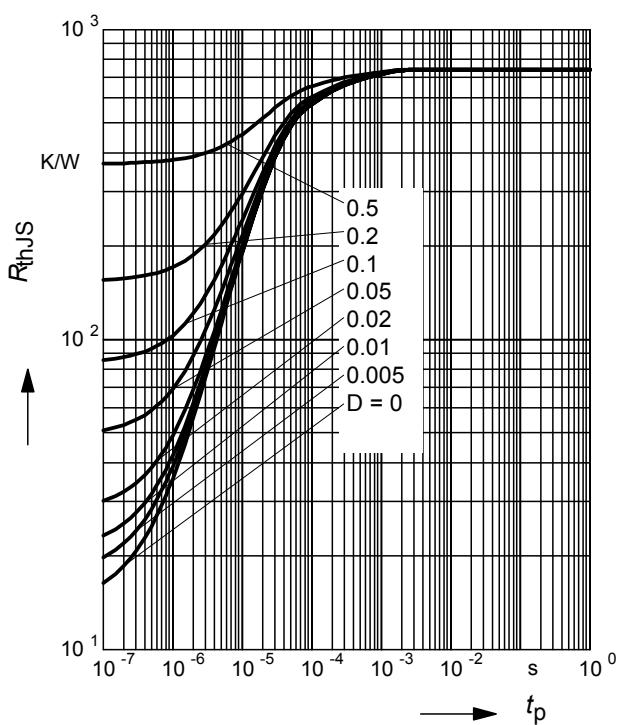
Permissible Pulse Load

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

BAT15-02EL

2015-01-27
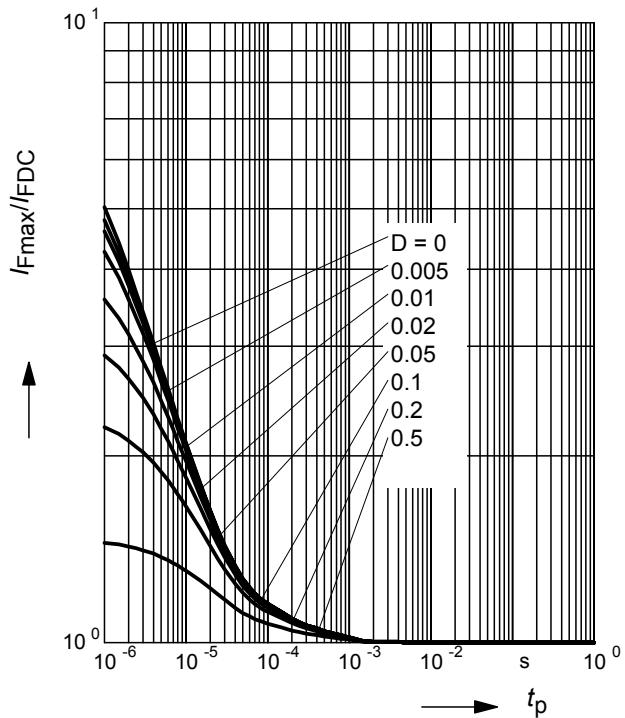
Permissible Puls Load $R_{\text{thJS}} = f(t_p)$

BAT15-03W
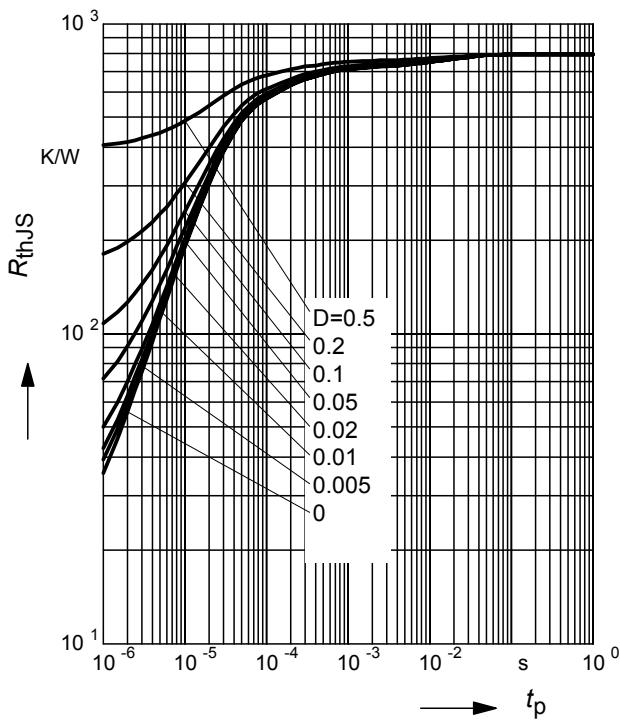
Permissible Pulse Load

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

BAT15-03W
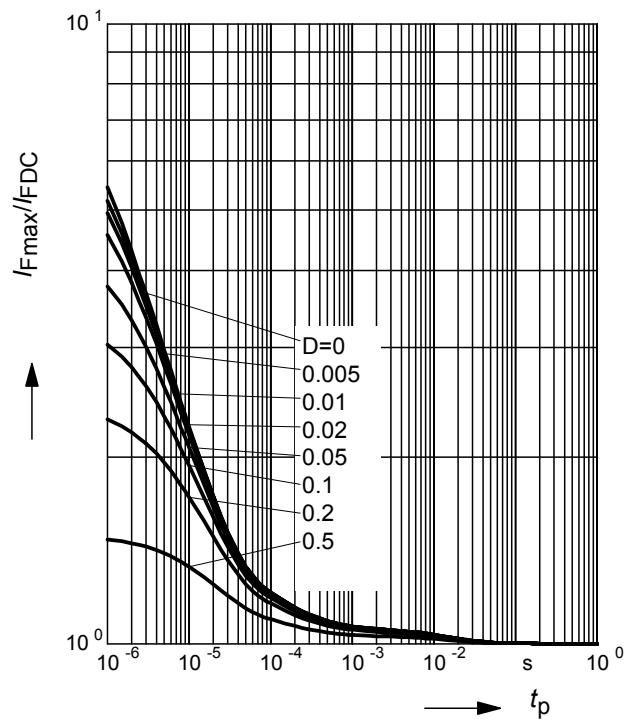
Permissible Puls Load $R_{\text{thJS}} = f(t_p)$

BAT15-04W
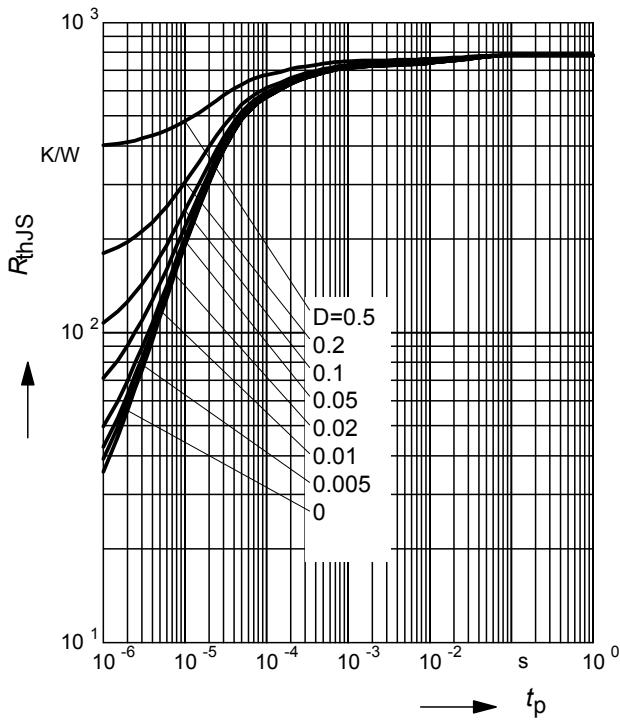
Permissible Pulse Load

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

BAT15-04W

2015-01-27
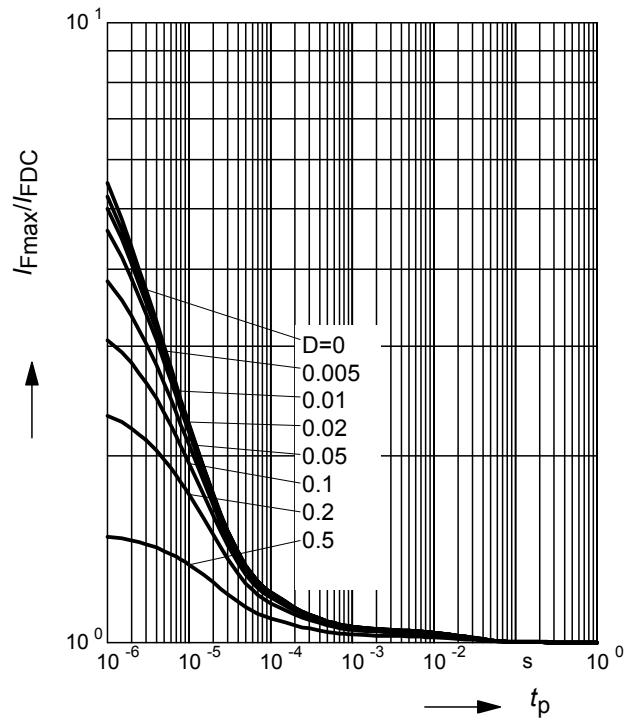
Permissible Puls Load $R_{thJS} = f(t_p)$

BAT15-05W
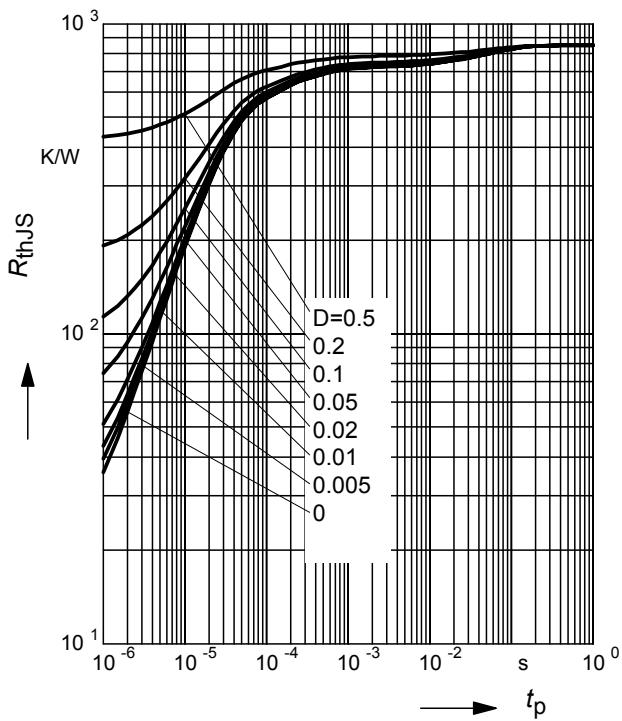
Permissible Pulse Load

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

BAT15-05W
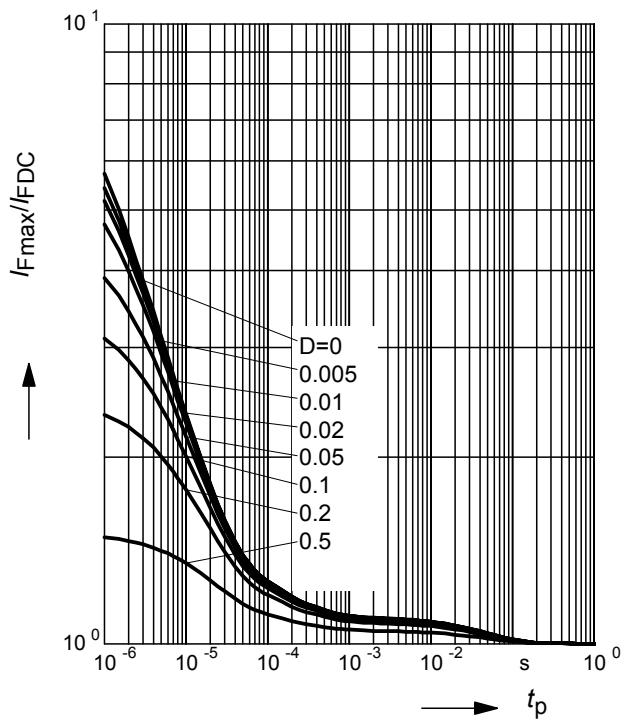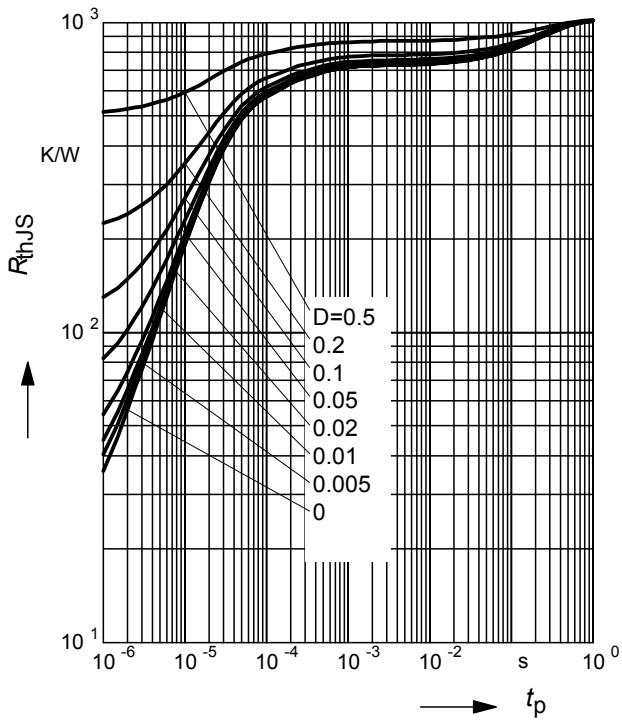
Permissible Puls Load $R_{thJS} = f(t_p)$

BAT15-099


**Permissible Pulse Load**

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

BAT15-099

8   2015-01-27
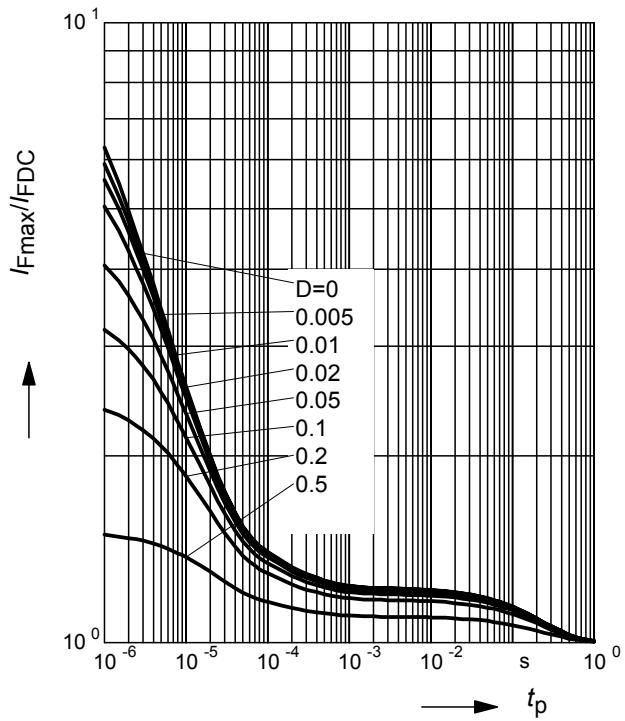
Permissible Puls Load $R_{thJS} = f(t_p)$

BAT15-099R
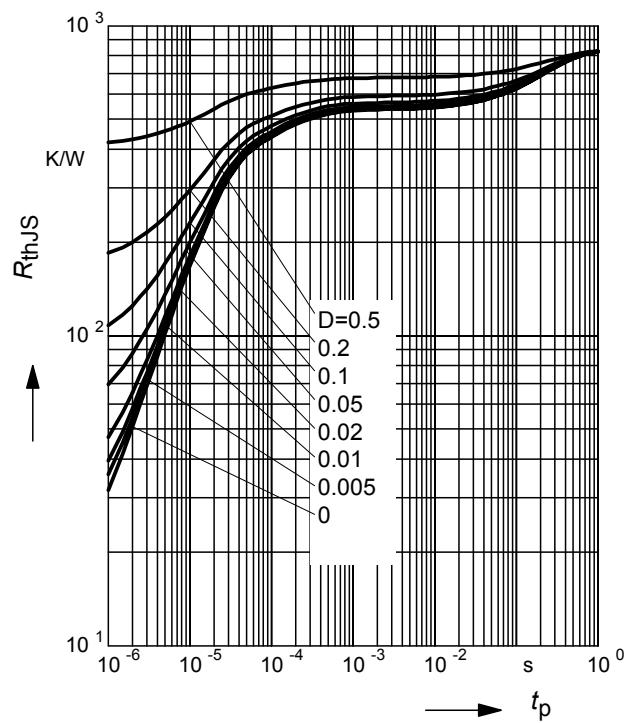
Permissible Pulse Load

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

BAT15-099R

2015-01-27
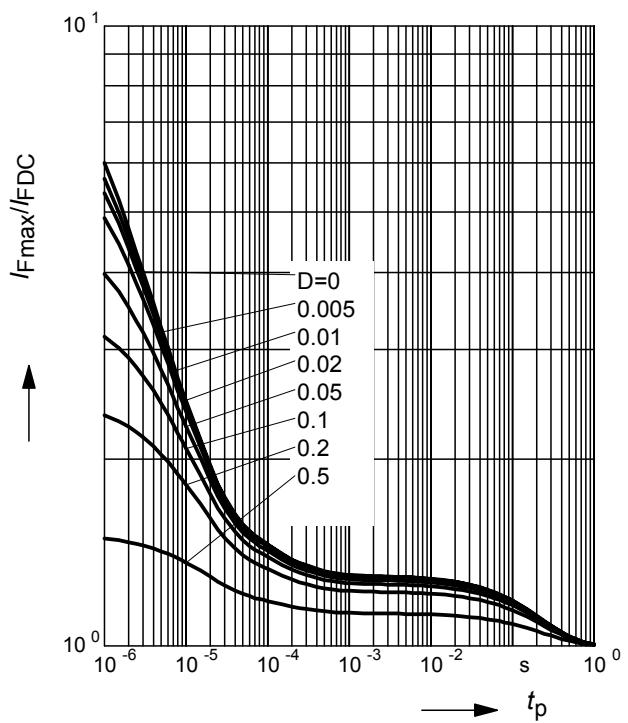
S_{11}-Parameters for BAT15-099

Typical impedance characteristics (with external bias *I* and Zo = 50Ω)

f	*I* = 0.02 mA		*I* = 0.05 mA		*I* = 0.1 mA		*I* = 0.2 mA		*I* = 0.5 mA	
GHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1	0.94	-16.4	0.84	-16.6	0.77	-16.4	0.59	-17.2	0.19	-16.7
2	0.93	-33.8	0.88	-33.8	0.77	-34.5	0.58	-35.2	0.15	-36.1
3	0.92	-53.8	0.86	-54.5	0.75	-54.1	0.58	-56.1	0.13	-64.8
4	0.91	-74.3	0.84	-75.3	0.72	-76.4	0.51	-78.4	0.11	-104.8
5	0.91	-96.6	0.84	-97.6	0.72	-99.1	0.53	-102.3	0.15	-135.7
6	0.91	-115.4	0.84	-116.7	0.73	-118.7	0.53	-122.9	0.18	-160.9
7	0.91	-131	0.84	-132.3	0.73	-134.1	0.54	-138.1	0.2	-168.8
8	0.91	-143	0.84	-144.5	0.73	-146.8	0.55	-150.5	0.81	179.4
9	0.91	-155.6	0.83	-150.2	0.71	-159.7	0.53	-163.9	0.18	179.4
10	0.9	-167.3	0.83	-169.7	0.71	-178.8	0.51	-175.8	0.14	151.2
11	0.89	175.5	0.8	172.6	0.7	170	0.45	164.9	0.09	105.5
12	0.88	175.5	0.76	146.5	0.62	142.8	0.39	134.2	0.14	43.6

S_{11} = (*f, I*) BAT15-099
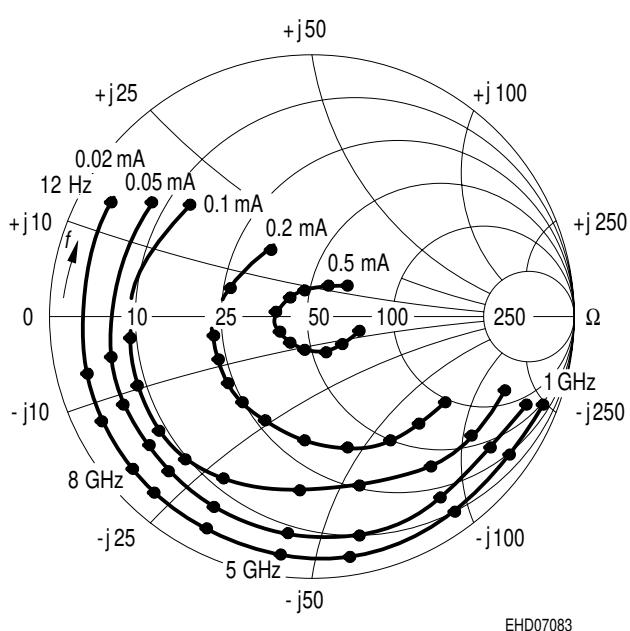
EHD07083
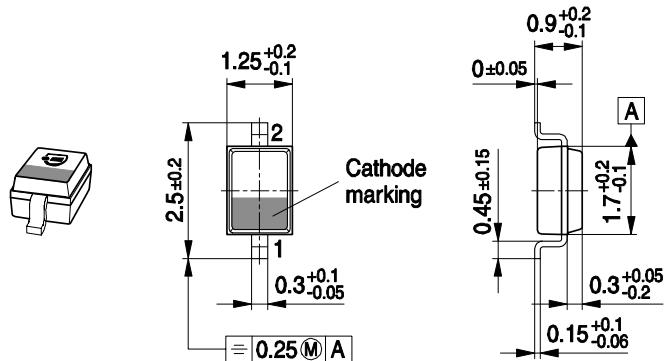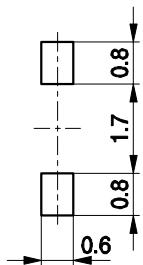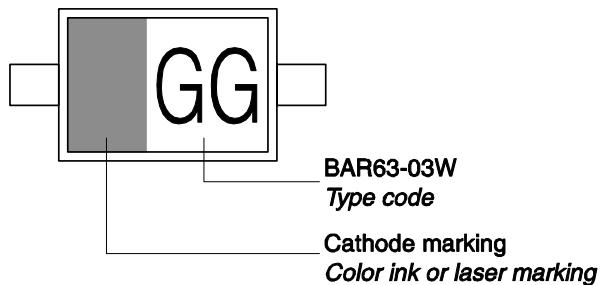
2015-01-27

Package Outline

1.25 +0.2 -0.1

2.5±0.2

2

1

Cathode marking

0.3 +0.1 -0.05

0.25 Ⓜ A

0.9 +0.2 -0.1

0±0.05

A

0.45±0.15

1.7 +0.2 -0.1

0.3 +0.05 -0.2

0.15 +0.1 -0.06

Foot Print

0.8

1.7

0.8

0.6

Marking Layout (Example)

GG

BAR63-03W
Type code

Cathode marking
Color ink or laser marking

Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel

4

0.2

2.9

2

8

Cathode marking

0.65

1.35

1
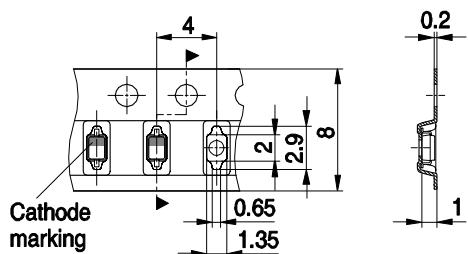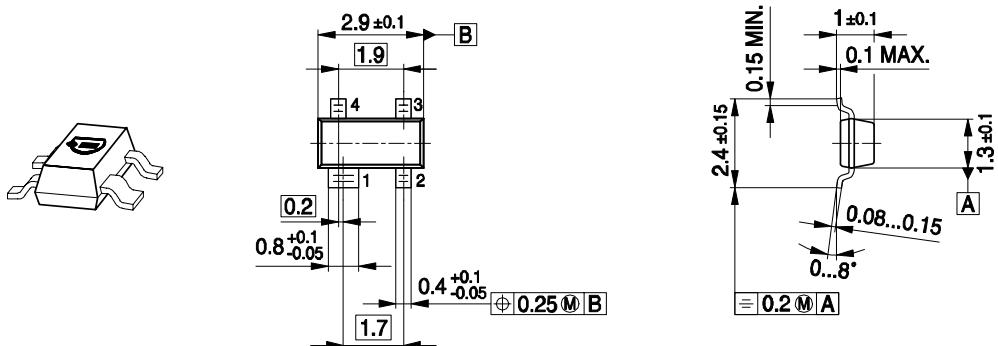
Package Outline

Note: Mold flash, protrusions or gate burrs of 0,2 mm max. per side are not included

SOT143-PO V09

Foot Print
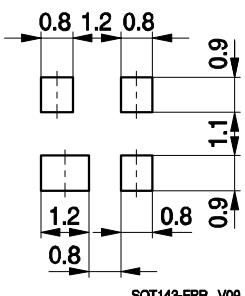
SOT143-FPR V09

Marking Layout (Example)
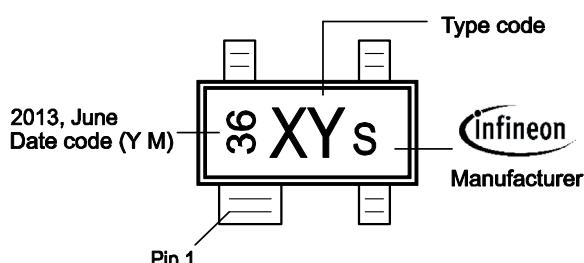
Type code

2013, June
Date code (Y M)

Manufacturer

Pin 1

Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel

SOT143-TP

2015-01-27

Package Outline

2 ±0.2

0.3 +0.1 -0.05   3x   ⊕ 0.1 Ⓜ

3

0.65   0.65

1   2

0.9 ±0.1

0.1 MAX.

◠ 0.1   A

2.1 ±0.1

0.1 MIN.

1.25 ±0.1

0.15 +0.1 -0.05

⯐ 0.2 Ⓜ A

Foot Print

0.6

1.6

0.8

0.65

0.65

Marking Layout (Example)

Infineon

Manufacturer

WH s 5 6

2005, June
Date code (YM)

Pin 1

BCR108W
Type code

Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel

4

0.2

8

2.3

Pin 1   2.15   1.1

2015-01-27

Package Outline

Top view   Bottom view

$0.31 ^{+0.01}_{-0.02}$

0.05 MAX.

0.6 ±0.05

0.65 ±0.05

1 ±0.05

Cathode
marking

0.5 ±0.035 1)

0.25 ±0.035 1)

1) Dimension applies to plated terminals

TSLP-2-19, -20-PO   V01

Foot Print

For board assembly information please refer to Infineon website „Packages"

0.6

0.35

0.3

1

0.35

0.45

0.28

0.93

0.28

0.38
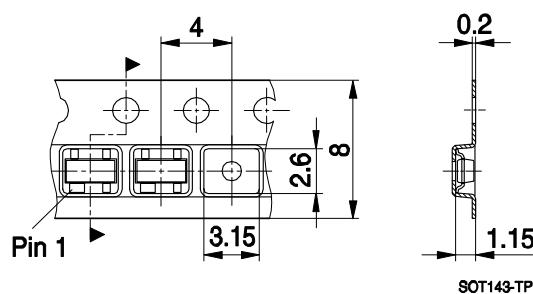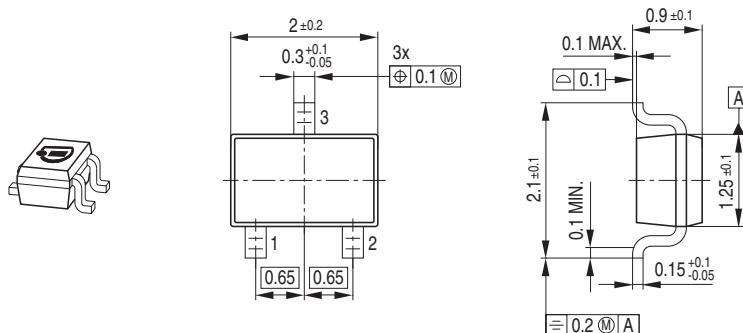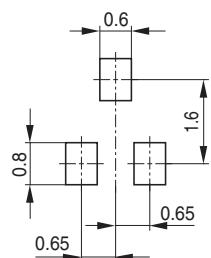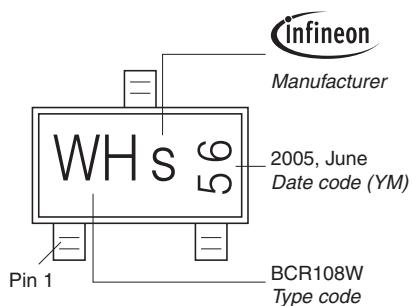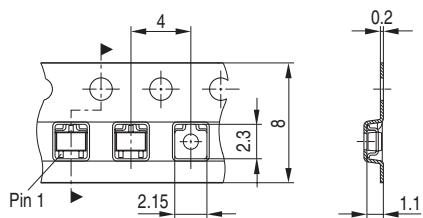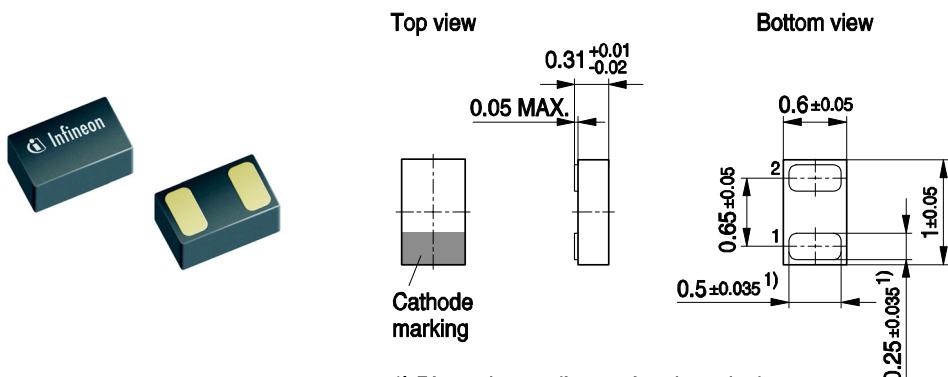
■ Copper   □ Solder mask   ☒ Stencil apertures
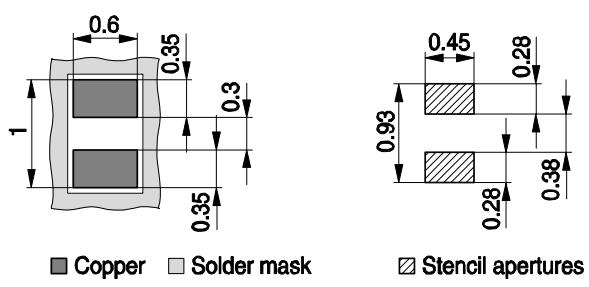
TSLP-2-19, -20-FP   V01

Marking layout (Example)

Type code

12

Cathode marking
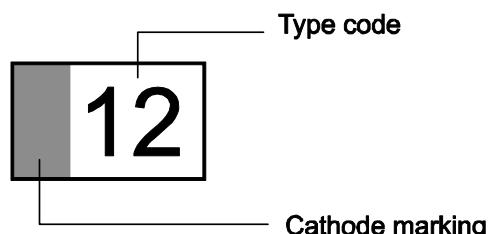
Standard Packing

Reel Ø 180 mm: 15.000 Pieces / Reel
Reels/Box: 1
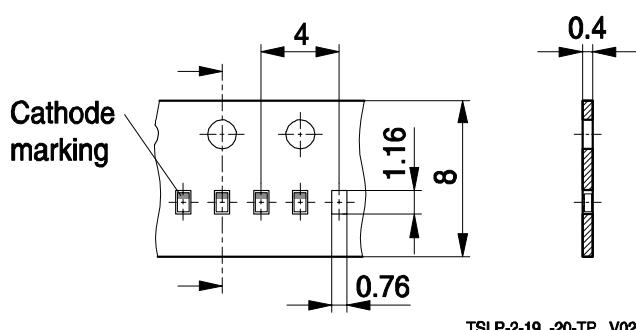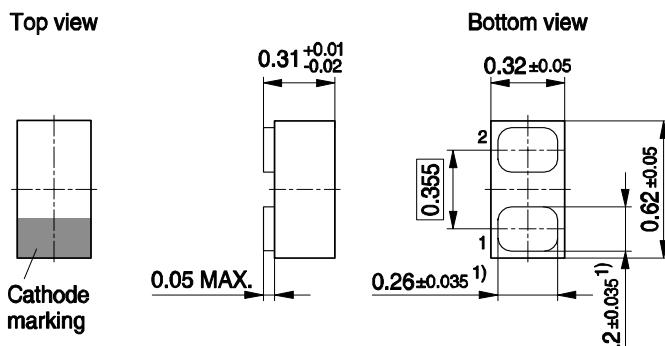
Cathode
marking

4

1.16

8

0.4

0.76

TSLP-2-19, -20-TP   V02

Package Outline

Top view

$0.31 ^{+0.01}_{-0.02}$

Bottom view

0.32 ± 0.05

0.355

0.62 ± 0.05

Cathode
marking

0.05 MAX.

0.26 ± 0.035 1)

0.2 ± 0.035 1)

2

1

1) Dimension applies to plated terminals

Foot Print

For board assembly information please refer to Infineon website "Packages"

0.32

0.24

0.14

0.62

0.24

0.27

0.19

0.57

0.19

0.19

0.19

■ Copper   □ Solder mask   ▨ Stencil apertures

Marking Layout (Example)

Type code

Cathode marking

Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

4

0.35

Ey

8

Cathode
marking

Ex
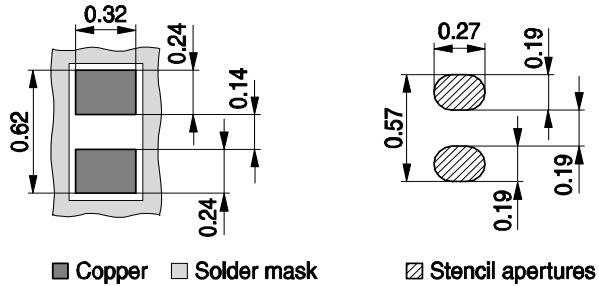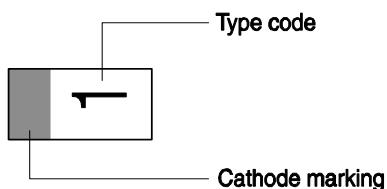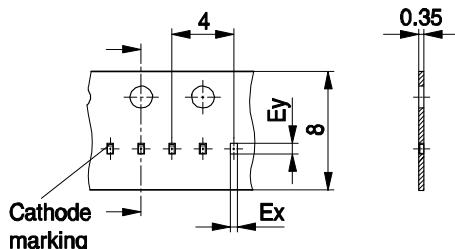
Tape type	Ex	Ey
Punched Tape	0.43	0.73
Embossed Tape	0.37	0.67

Deliveries can be both tape types (no selection possible).
Specification allows identical processing (pick & place) by users.

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For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (<www.infineon.com>).

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