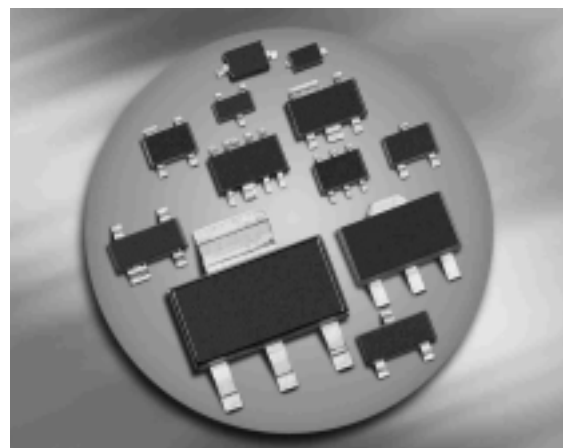
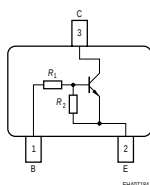


NPN Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor ($R_1=47k\Omega$, $R_2=22k\Omega$)


BCR146/F/L3
BCR146T/W


Type	Marking	Pin Configuration						Package
BCR146	WLs	1=B	2=E	3=C	-	-	-	SOT23
BCR146F	WLs	1=B	2=E	3=C	-	-	-	TSFP-3
BCR146L3	WL	1=B	2=E	3=C	-	-	-	TSLP-3-4
BCR146T	WL	1=B	2=E	3=C	-	-	-	SC75
BCR146W	WLs	1=B	2=E	3=C	-	-	-	SOT323

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	50	V
Collector-base voltage	V_{CBO}	50	
Input forward voltage	$V_{i(fwd)}$	80	
Input reverse voltage	$V_{i(rev)}$	10	
Collector current	I_C	70	mA
Total power dissipation- BCR146, $T_S \leq 102^\circ\text{C}$ BCR146F, $T_S \leq 128^\circ\text{C}$ BCR146L3, $T_S \leq 135^\circ\text{C}$ BCR146T, $T_S \leq 109^\circ\text{C}$ BCR146W, $T_S \leq 124^\circ\text{C}$	P_{tot}	200 250 250 250 250	mW
Junction temperature	T_j	150	
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾ BCR146 BCR146F BCR146L3 BCR146T BCR146W	R_{thJS}	≤ 240 ≤ 90 ≤ 60 ≤ 165 ≤ 105	K/W

¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

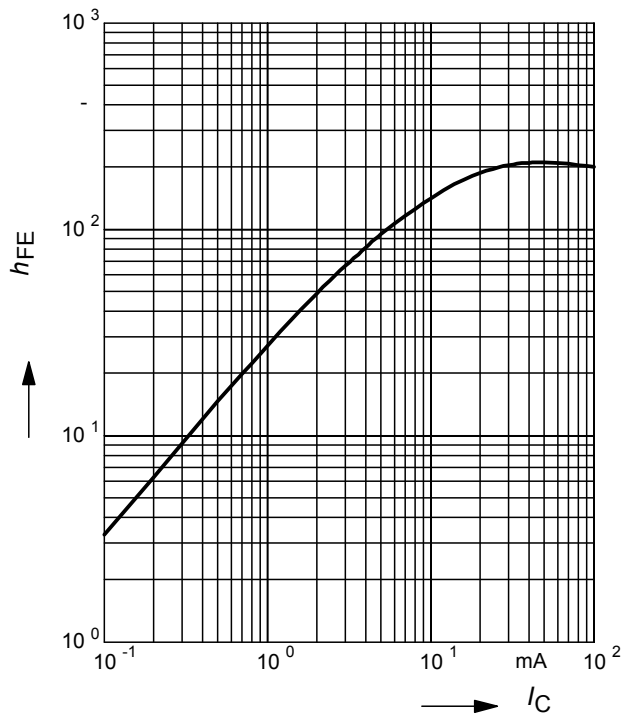
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 100\ \mu\text{A}$, $I_B = 0$	$V_{(\text{BR})\text{CEO}}$	50	-	-	V
Collector-base breakdown voltage $I_C = 10\ \mu\text{A}$, $I_E = 0$	$V_{(\text{BR})\text{CBO}}$	50	-	-	
Collector-base cutoff current $V_{\text{CB}} = 40\ \text{V}$, $I_E = 0$	I_{CBO}	-	-	100	nA
Emitter-base cutoff current $V_{\text{EB}} = 10\ \text{V}$, $I_C = 0$	I_{EBO}	-	-	220	μA
DC current gain ¹⁾ $I_C = 5\ \text{mA}$, $V_{\text{CE}} = 5\ \text{V}$	h_{FE}	50	-	-	-
Collector-emitter saturation voltage ¹⁾ $I_C = 10\ \text{mA}$, $I_B = 0.5\ \text{mA}$	V_{CEsat}	-	-	0.3	V
Input off voltage $I_C = 100\ \mu\text{A}$, $V_{\text{CE}} = 5\ \text{V}$	$V_{\text{i(off)}}$	1.2	-	2.6	
Input on voltage $I_C = 2\ \text{mA}$, $V_{\text{CE}} = 0.3\ \text{V}$	$V_{\text{i(on)}}$	1.5	-	4	
Input resistor	R_1	32	47	62	k Ω
Resistor ratio	R_1/R_2	1.92	2.14	2.36	-
AC Characteristics					
Transition frequency $I_C = 10\ \text{mA}$, $V_{\text{CE}} = 5\ \text{V}$, $f = 100\ \text{MHz}$	f_{T}	-	150	-	MHz
Collector-base capacitance $V_{\text{CB}} = 10\ \text{V}$, $f = 1\ \text{MHz}$	C_{cb}	-	3	-	pF

¹⁾Pulse test: $t < 300\ \mu\text{s}$; $D < 2\%$

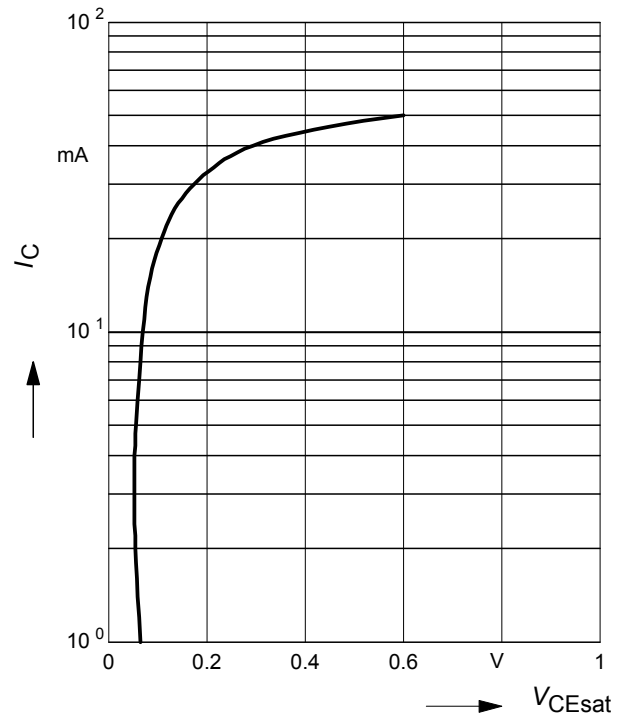
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 5V$ (common emitter configuration)



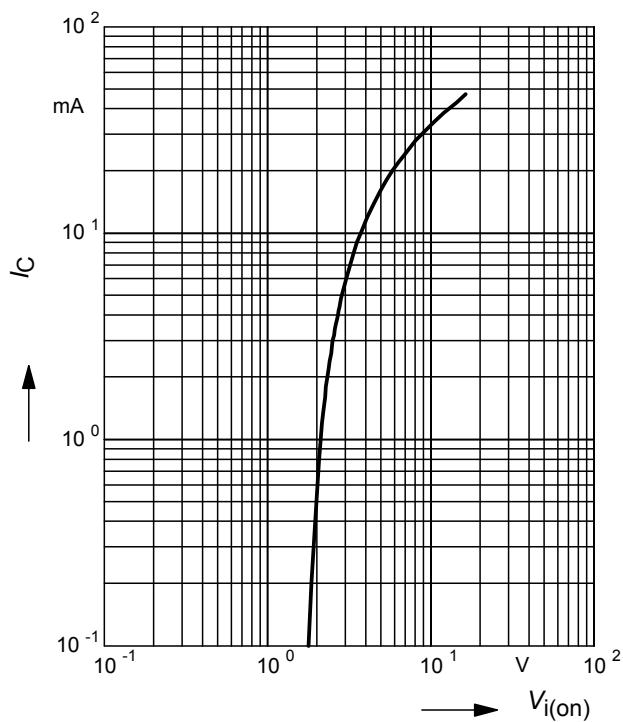
Collector-emitter saturation voltage

$V_{CEsat} = f(I_C), h_{FE} = 20$



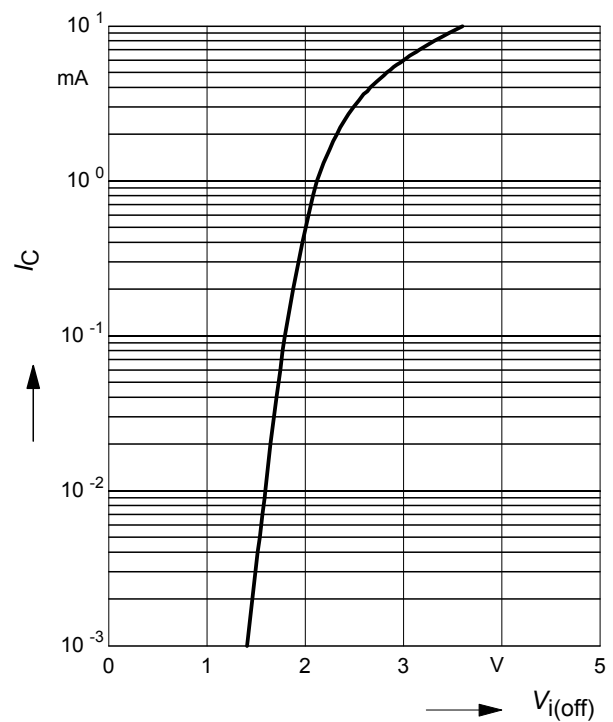
Input on Voltage $V_{i(on)} = f(I_C)$

$V_{CE} = 0.3V$ (common emitter configuration)



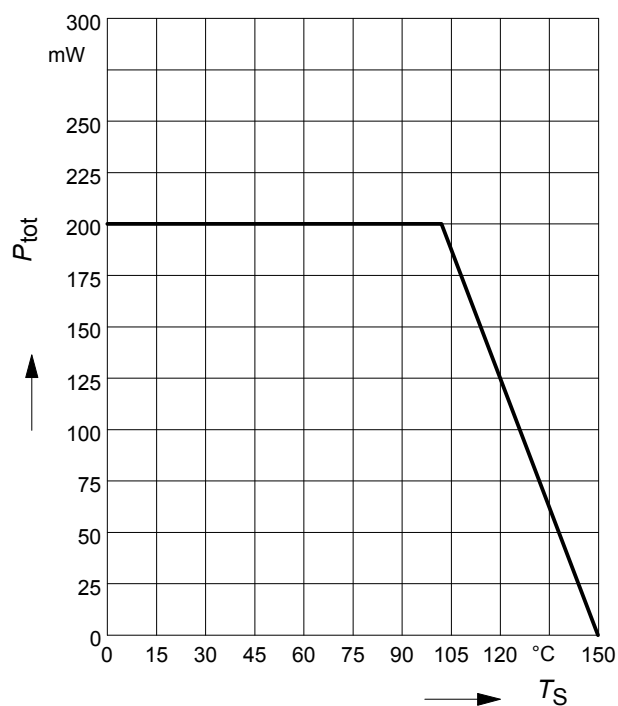
Input off voltage $V_{i(off)} = f(I_C)$

$V_{CE} = 5V$ (common emitter configuration)



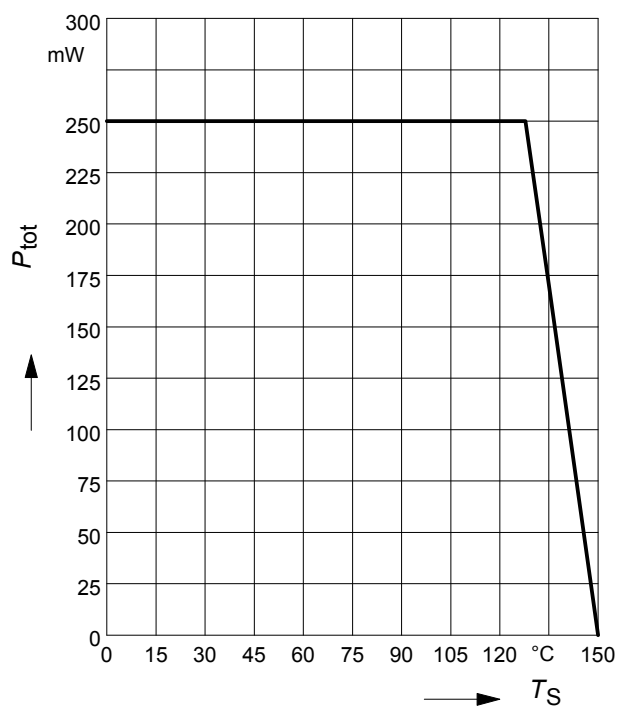
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR146



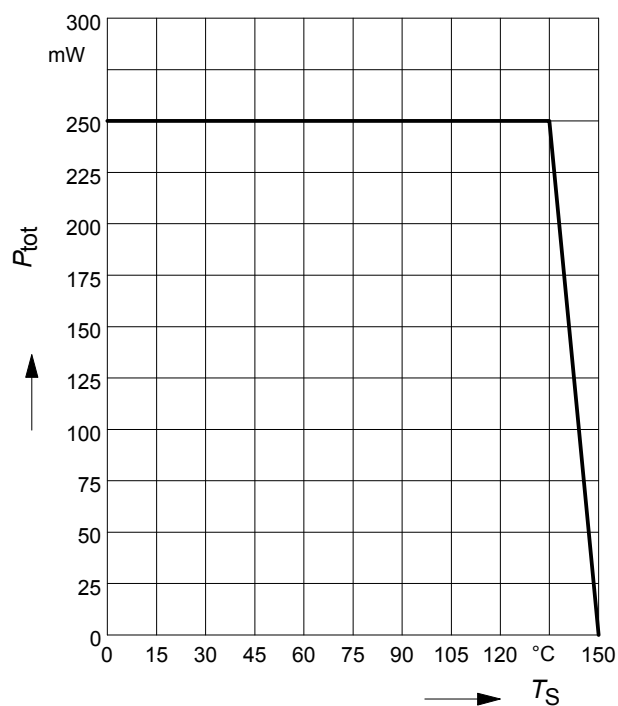
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR146F



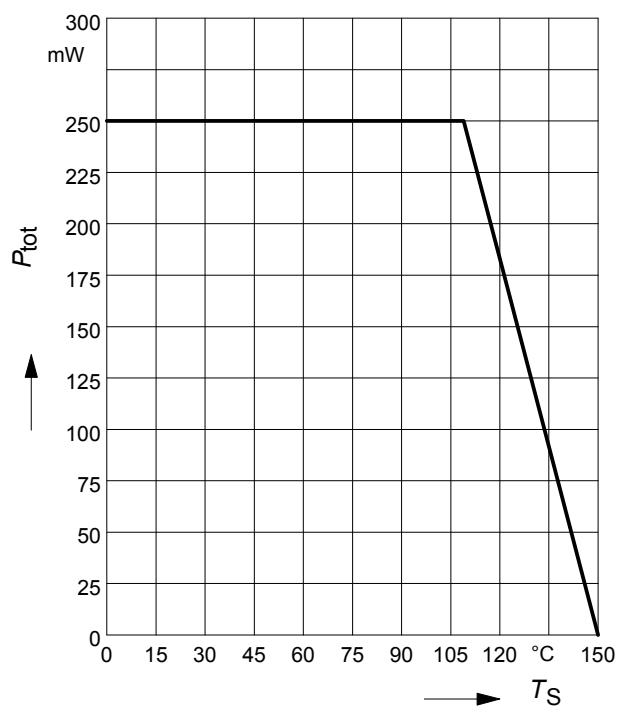
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR146L3



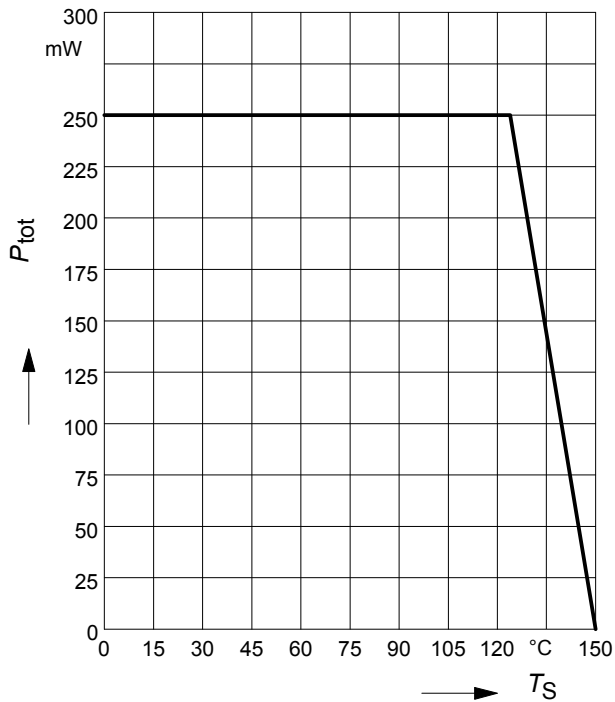
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR146T



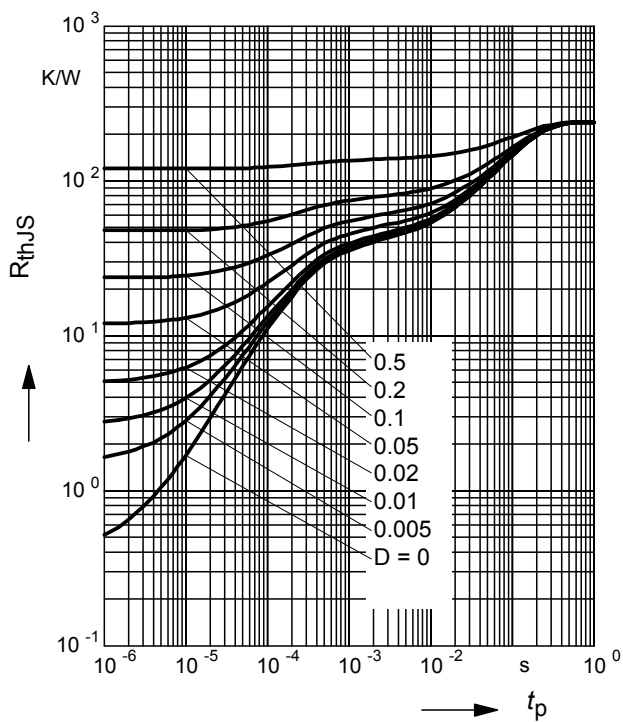
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR146W



Permissible Pulse Load $R_{\text{thJS}} = f(t_p)$

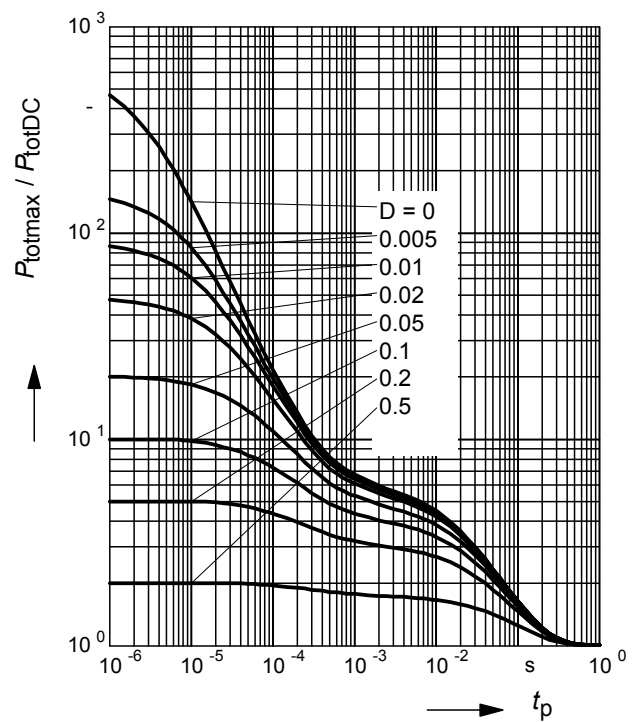
BCR146



Permissible Pulse Load

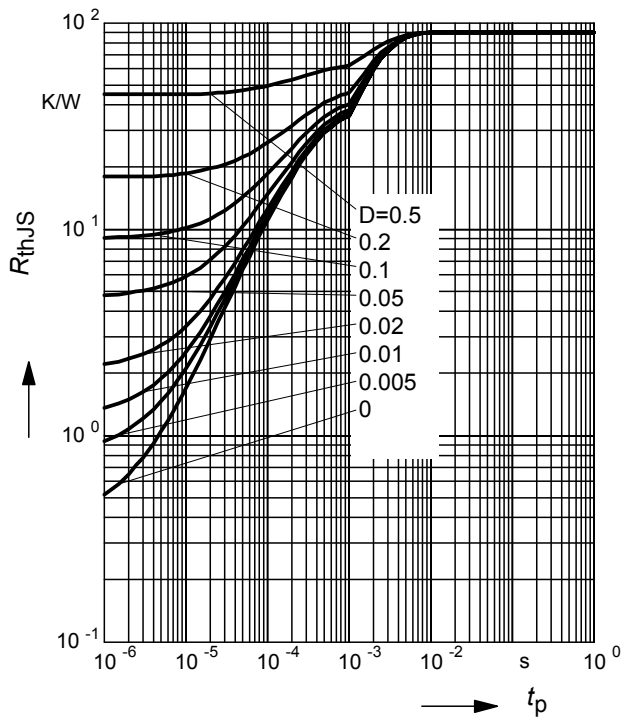
$P_{\text{totmax}}/P_{\text{totDC}} = f(t_p)$

BCR146



Permissible Puls Load $R_{thJS} = f(t_p)$

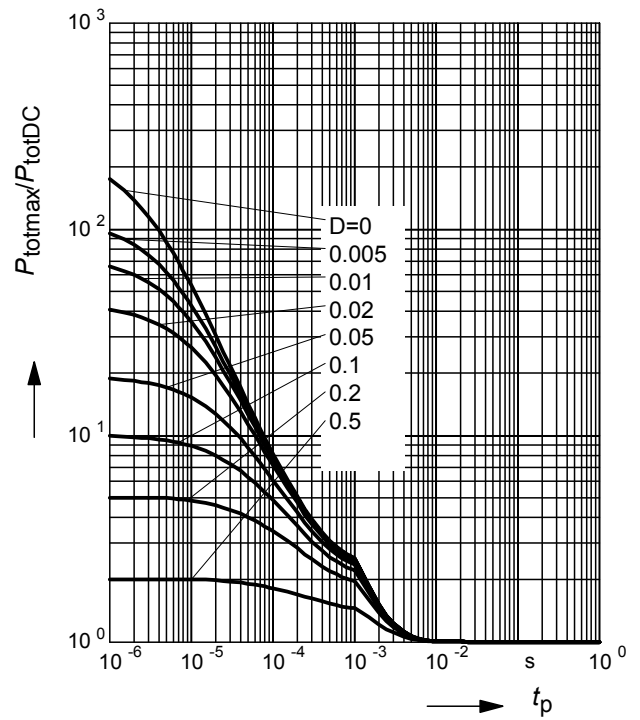
BCR146F



Permissible Pulse Load

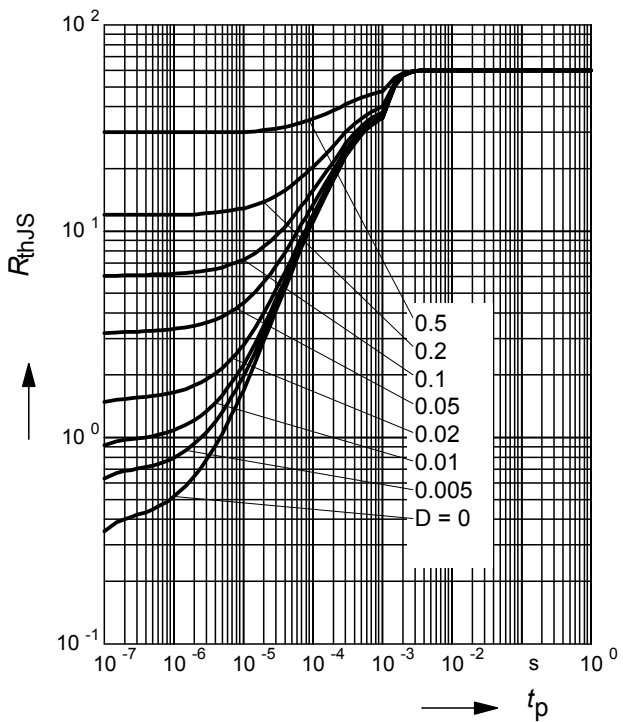
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR146F



Permissible Puls Load $R_{thJS} = f(t_p)$

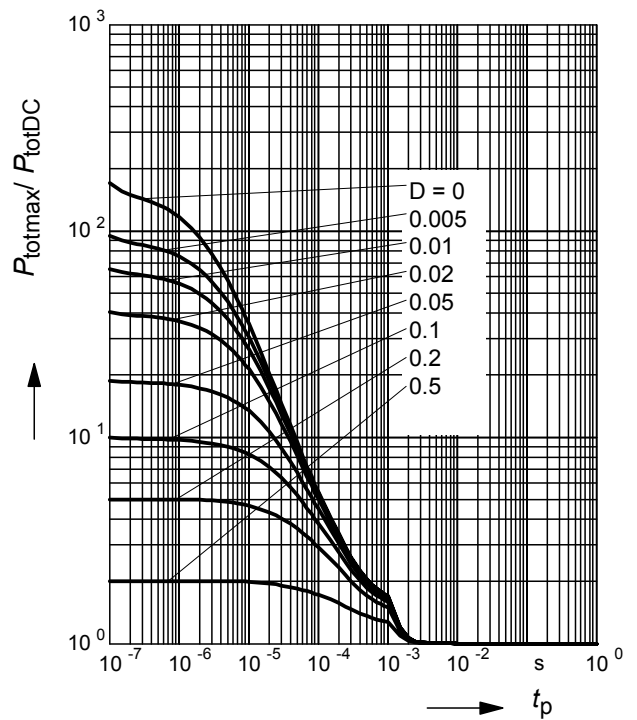
BCR146L3



Permissible Pulse Load

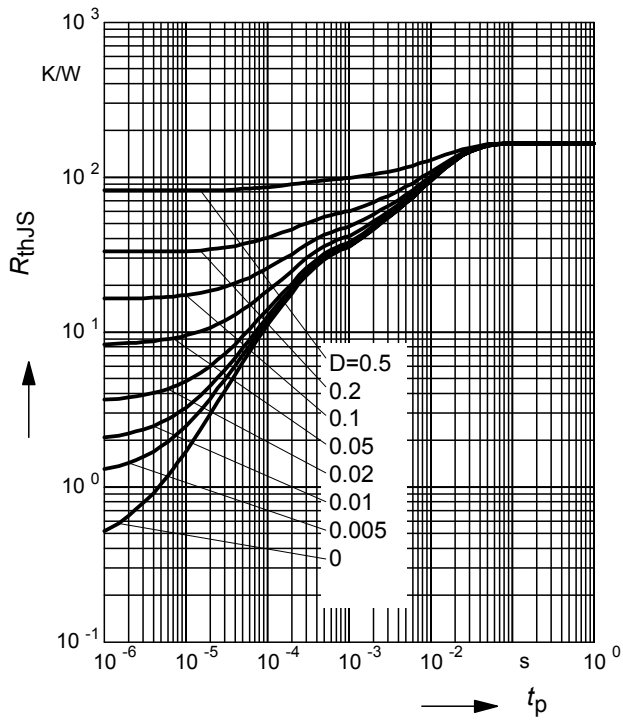
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR146L3



Permissible Puls Load $R_{thJS} = f(t_p)$

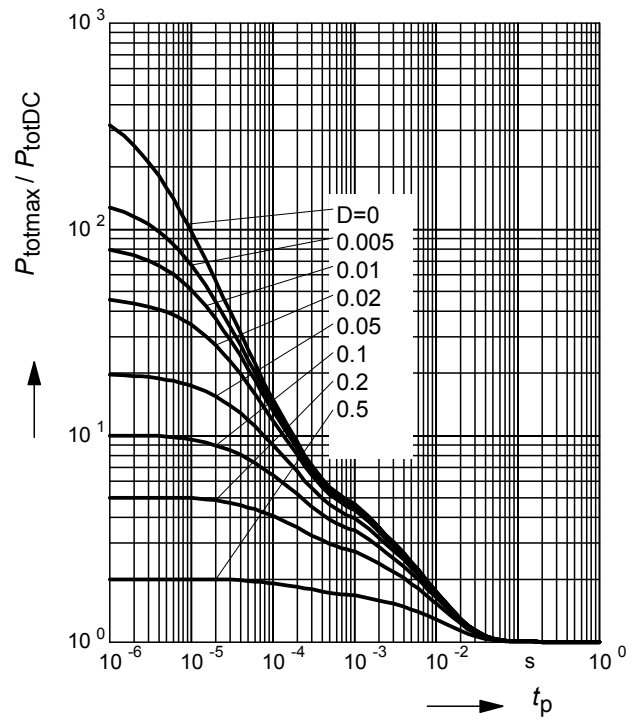
BCR146T



Permissible Pulse Load

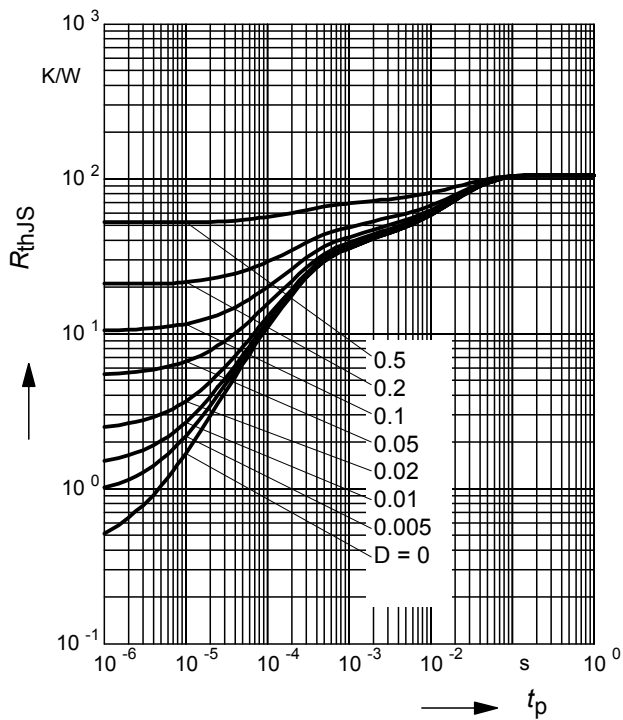
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR146T



Permissible Puls Load $R_{thJS} = f(t_p)$

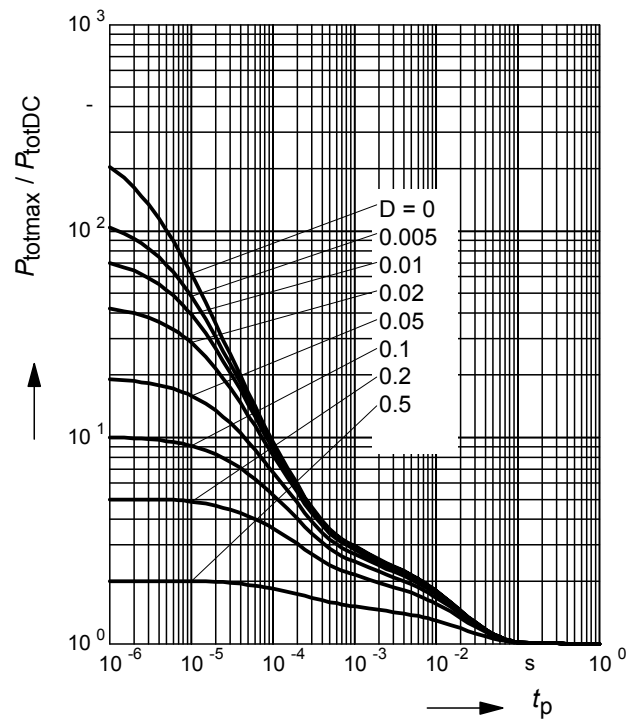
BCR146W



Permissible Pulse Load

$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR146W



The technical drawing shows two views of the M8x16mm cable gland:

- Front View (Left):** Shows the main body with a total width of 1.6 ± 0.2 . The distance between the mounting holes is $0.2^{+0.1}_{-0.05}$. The hole diameter is $\varnothing 0.5$. The mounting hole diameter is $\varnothing 0.10$ (M). There are three mounting tabs labeled 1, 2, and 3.
- Side View (Right):** Shows the profile of the gland. The height is 1.9 ± 0.2 . The top flange has a thickness of 0.1 MAX. and a radius of 0.7 ± 0.1 . The bottom flange has a thickness of 0.15 ± 0.1 . The internal bore has a diameter of $\varnothing 0.8 \pm 0.1$ and a depth of 10° MAX. .

Technical drawing of a mechanical part with dimensions. The part is symmetrical about a vertical centerline. The overall width is 1.15. The height of the central section is 0.65. The width of the central section is 0.4. The width of the side sections is 0.5. The height of the side sections is 0.4. The distance between the centerlines of the side sections is 0.5. The distance between the centerline of the side section and the centerline of the central section is 0.65. The distance between the centerline of the side section and the centerline of the central section is 0.65. The distance between the centerline of the side section and the centerline of the central section is 0.65.

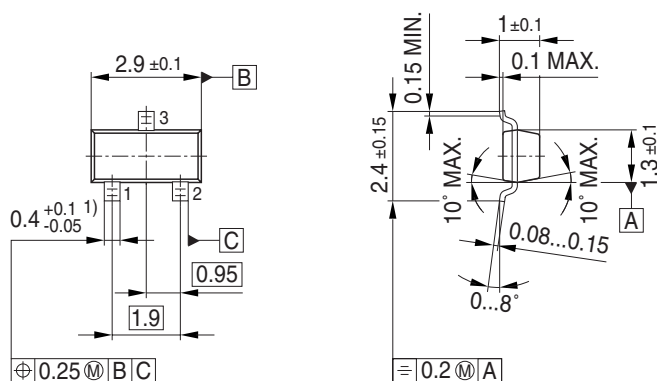
Diagram illustrating the component markings for the BCR108T:

- Date code:** 2005, December (indicated by the top marking)
- Type code:** BCR108T (indicated by the bottom marking)
- Pin 1:** Indicated by the bottom-left marking.

Date Code marking for discrete packages with one digit (SCD80, SC79, SC75¹⁾) CES-Code

Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	j	y	J	Y
10	k	z	K	Z	k	z	K	Z	k	z	K	Z
11	l	2	L	4	l	2	L	4	l	2	L	4
12	n	3	N	5	n	3	N	5	n	3	N	5

1) New Marking Layout for SC75, implemented at October 2005.



Foot Print

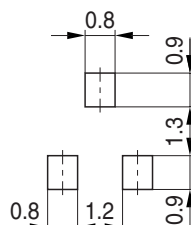
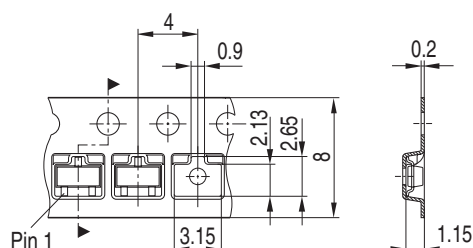


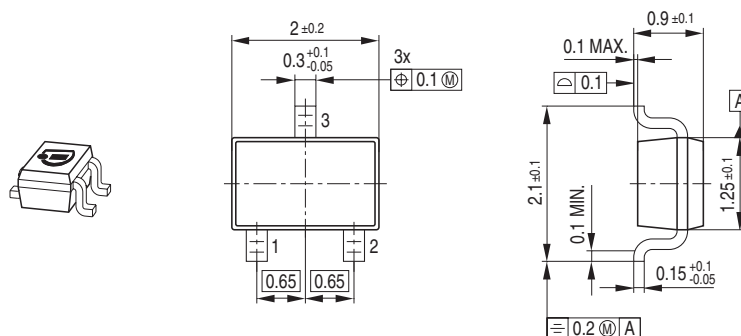
Diagram illustrating the marking on the BCW66 component:

- Manufacturer:** infineon
- Date code (YM):** 2005, June (represented by 65)
- Pin 1:** Indicated by a line pointing to the first pin.
- Type code:** BCW66

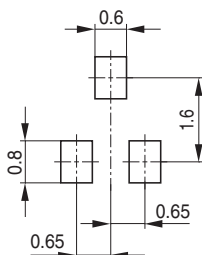
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



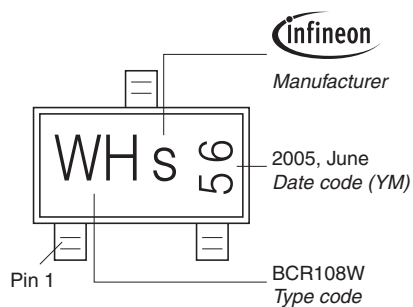
Package Outline



Foot Print

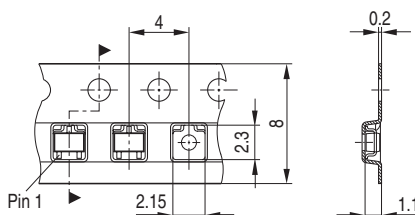


Marking Layout (Example)

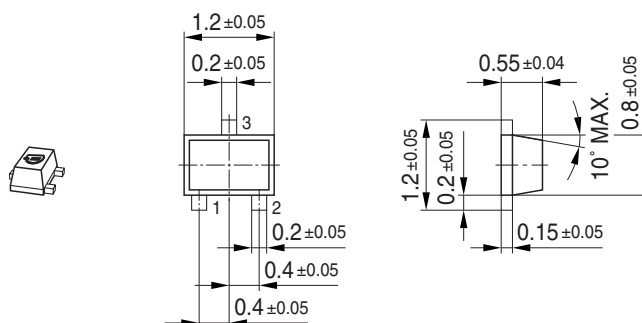


Standard Packing

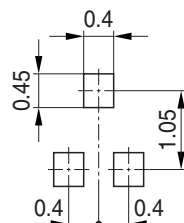
Reel $\varnothing 180$ mm = 3.000 Pieces/Reel
 Reel $\varnothing 330$ mm = 10.000 Pieces/Reel



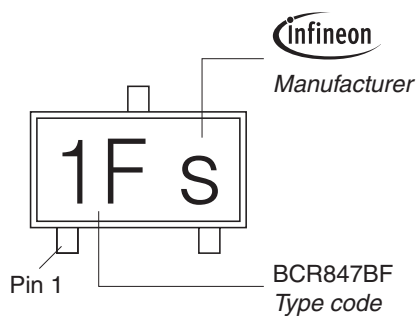
Package Outline



Foot Print

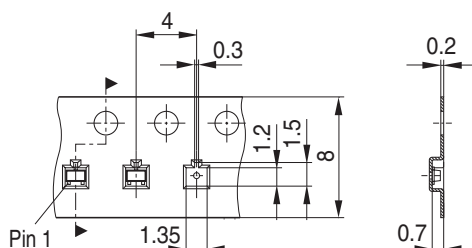


Marking Layout (Example)

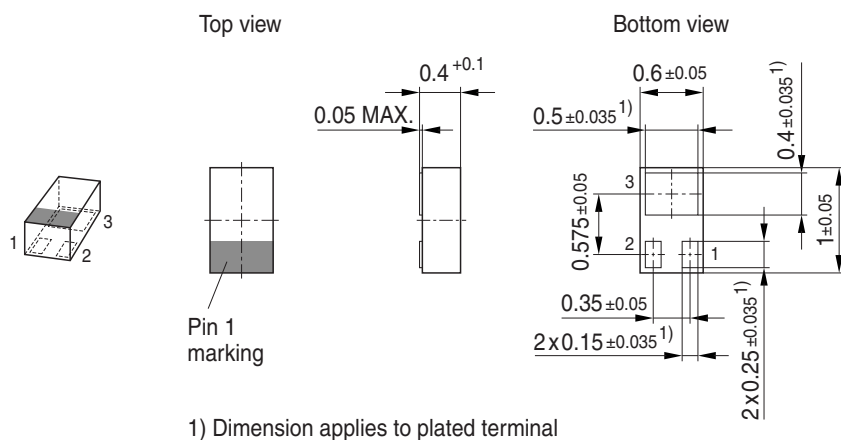


Standard Packing

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

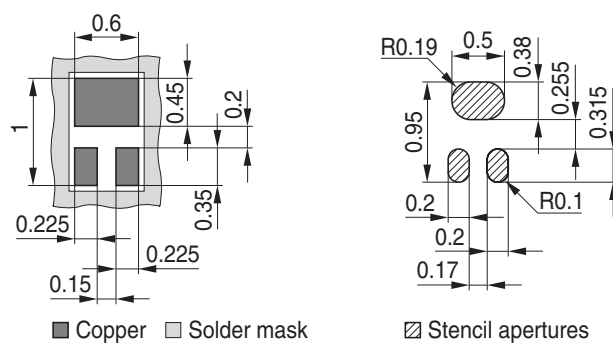


Package Outline

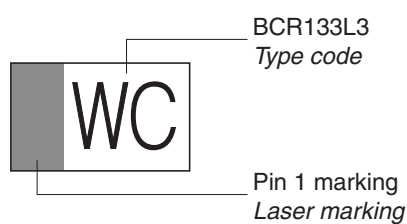


Foot Print

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

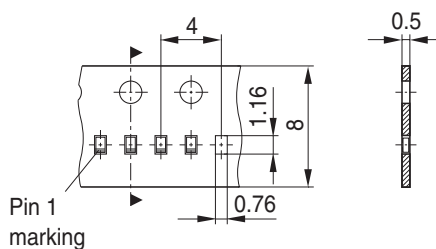


Marking Layout



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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