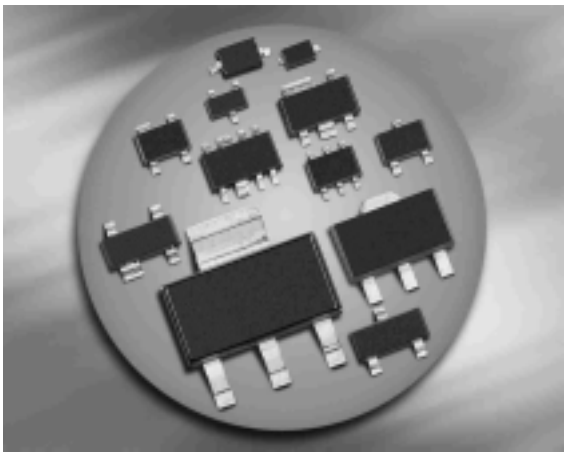
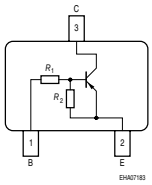
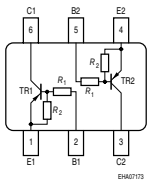
PNP Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor (R1 = 47 kΩ , R2 = 47 kΩ)
- BCR198S: Two internally isolated transistors with good matching in one multichip package
- BCR198S: For orientation in reel see package information below



BCR198/F/L3 BCR198S
BCR198T/W





Type	Marking	Pin Configuration						Package
BCR198	WRs	1=B	2=E	3=C	-	-	-	SOT23
BCR198F	WRs	1=B	2=E	3=C	-	-	-	TSFP-3
BCR198L3	WR	1=B	2=E	3=C	-	-	-	TSLP-3-4
BCR198S	WRs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SOT363
BCR198T	WR	1=B	2=E	3=C	-	-	-	SC75
BCR198W	WRs	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-	P_{tot}		mW
BCR198, $T_S \leq 102°C$		200	
BCR198F, $T_S \leq 128°C$		250	
BCR198L3, $T_S \leq 135°C$		250	
BCR198S, $T_S \leq 115°C$		250	
BCR198T, $T_S \leq 109°C$		250	
BCR198W, $T_S \leq 124°C$		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BCR198		≤ 240	
BCR198F		≤ 90	
BCR198L3		≤ 60	
BCR198S		≤ 140	
BCR198T		≤ 165	
BCR198W		≤ 105	

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

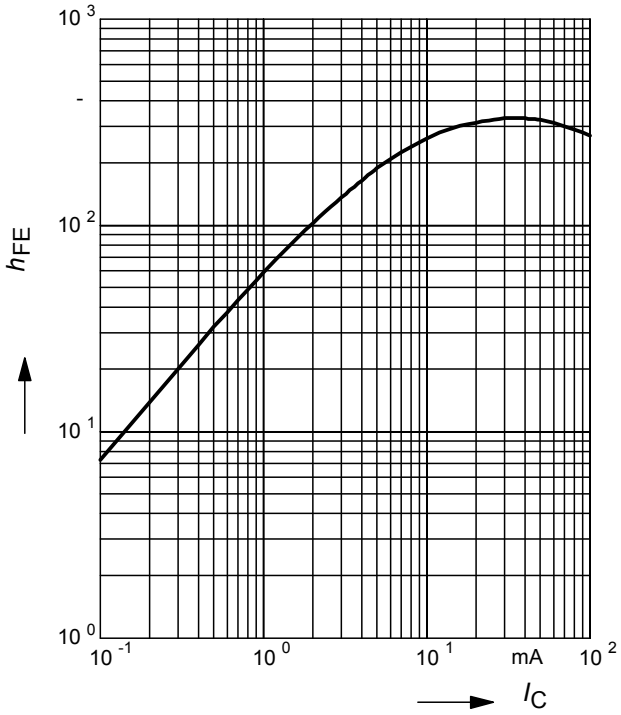
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage I_C = 100 µA, I_B = 0	$V_{(BR)CEO}$	50	-	-	V
Collector-base breakdown voltage I_C = 10 µA, I_E = 0	$V_{(BR)CBO}$	50	-	-	
Collector-base cutoff current V_{CB} = 40 V, I_E = 0	I_{CBO}	-	-	100	nA
Emitter-base cutoff current V_{EB} = 10 V, I_C = 0	I_{EBO}	-	-	164	µA
DC current gain[1)] I_C = 5 V, V_{CE} = 5 V	h_{FE}	70	-	-	-
Collector-emitter saturation voltage[1)] I_C = 10 mA, I_B = 0.5 mA	V_{CEsat}	-	-	0.3	V
Input off voltage I_C = 100 µA, V_{CE} = 5 V	$V_{i(off)}$	0.8	-	1.5	
Input on voltage I_C = 2 mA, V_{CE} = 0.3 V	$V_{i(on)}$	1	-	3	
Input resistor	R_1	32	47	62	kΩ
Resistor ratio	R_1/R_2	0.9	1	1.1	-
AC Characteristics					
Transition frequency I_C = 10 mA, V_{CE} = 5 V, f = 100 MHz	f_T	-	190	-	MHz
Collector-base capacitance V_{CB} = 10 V, f = 1 MHz	C_{cb}	-	3	-	pF

[1]Pulse test: t < 300µs; D < 2%

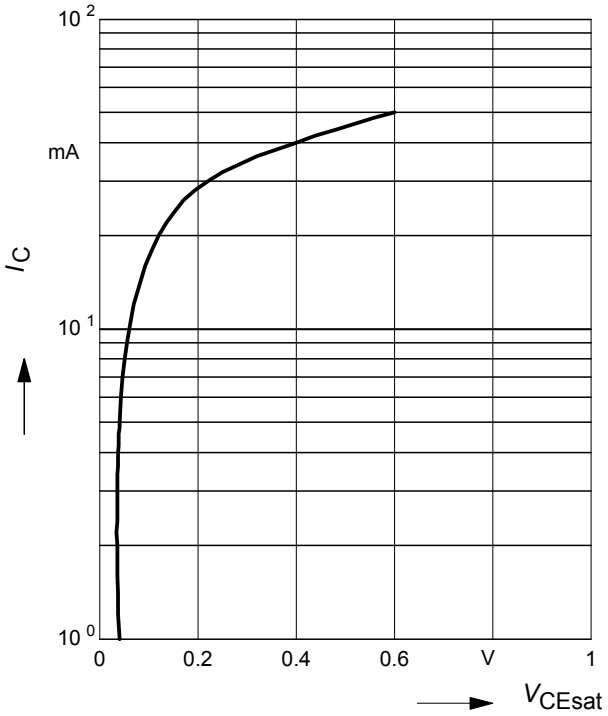
DC current gain $h_{FE} = f(I_C)$

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



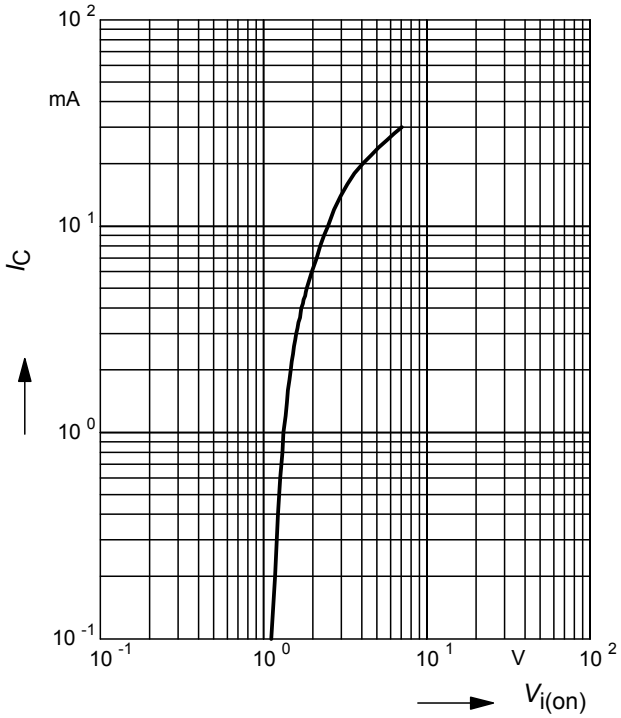
Collector-emitter saturation voltage

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



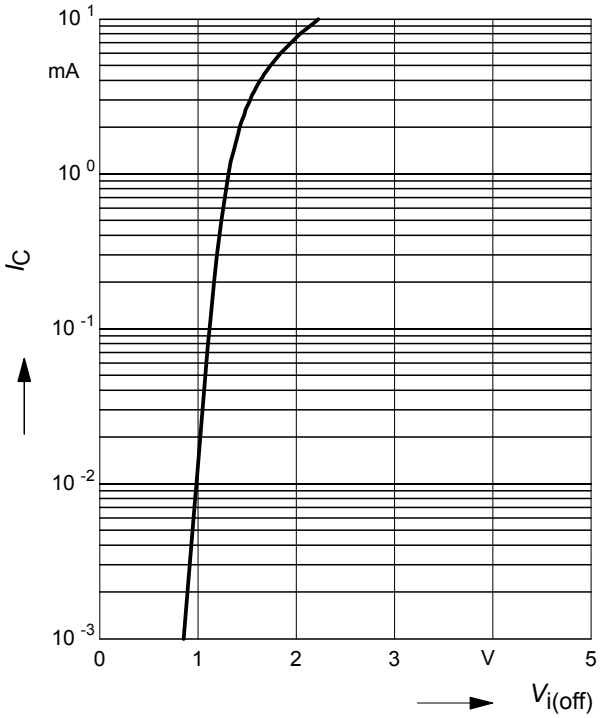
Input on Voltage $V_{i(on)} = f(I_C)$

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

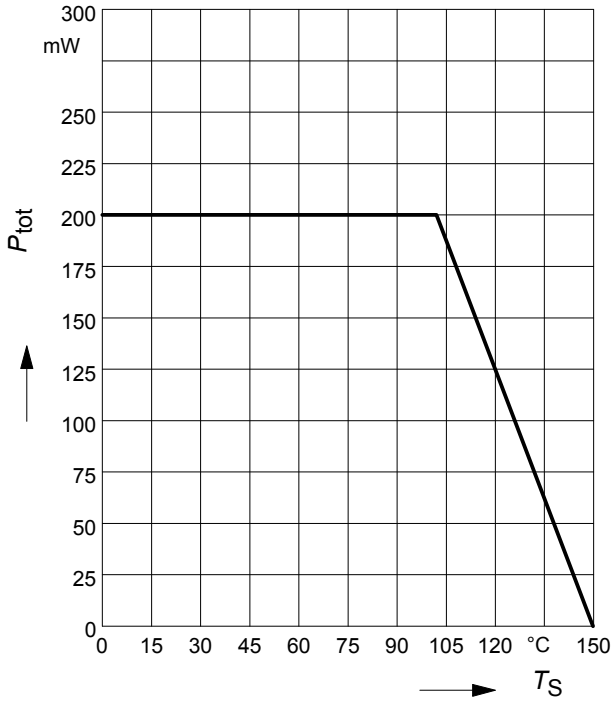


Input off voltage $V_{i(off)} = f(I_C)$

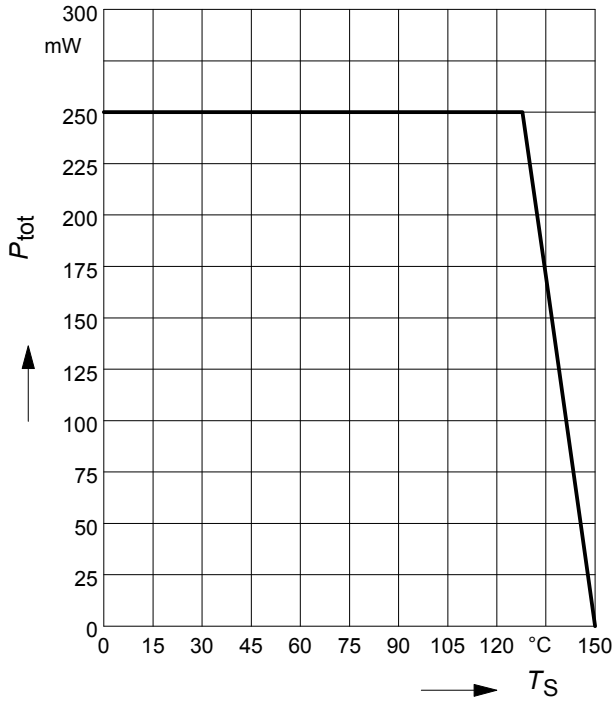
V_{CE} = 5V (common emitter configuration)



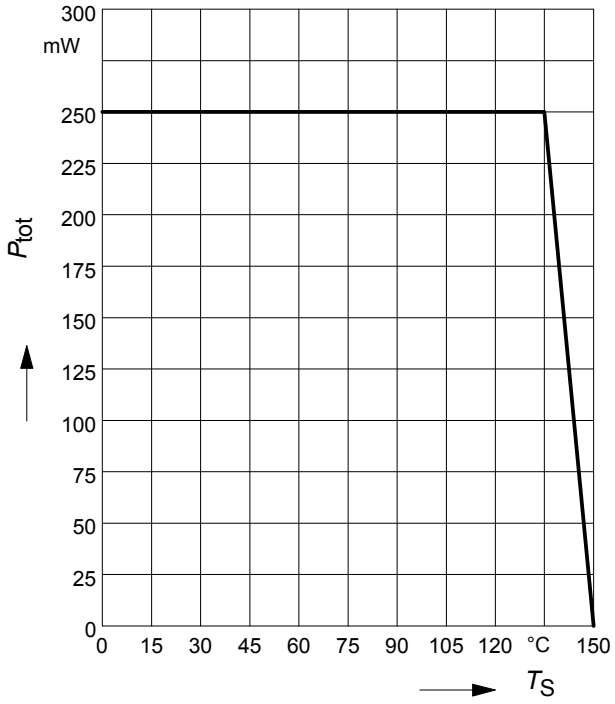
Total power dissipation $P_{tot} = f(T_S)$
BCR198



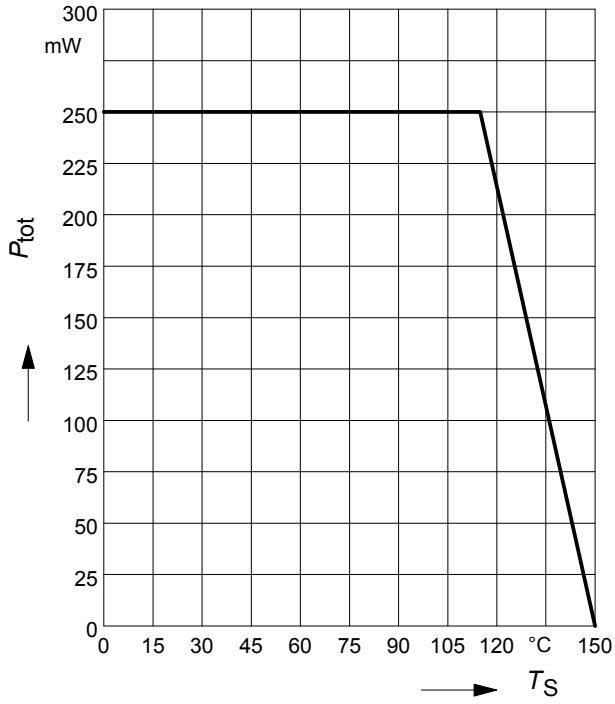
Total power dissipation $P_{tot} = f(T_S)$
BCR198F



Total power dissipation $P_{tot} = f(T_S)$
BCR198L3

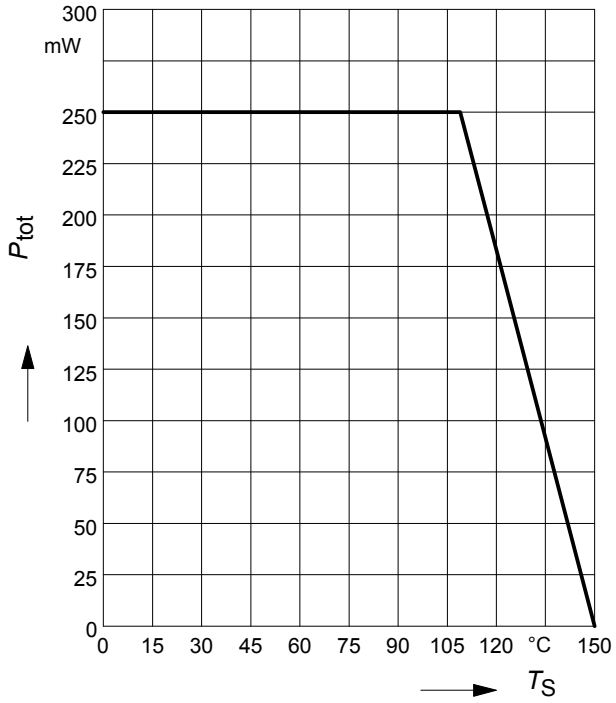


Total power dissipation $P_{tot} = f(T_S)$
BCR198S



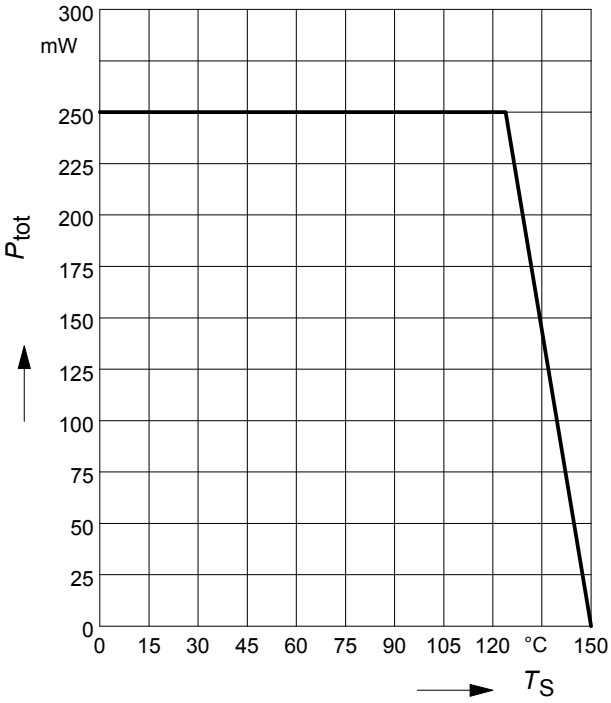
Total power dissipation $P_{tot} = f(T_S)$

BCR198T



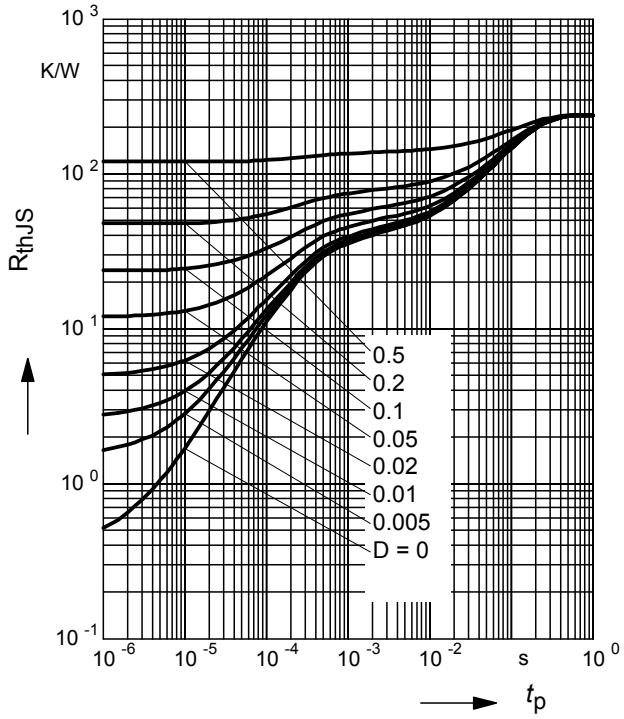
Total power dissipation $P_{tot} = f(T_S)$

BCR198W



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

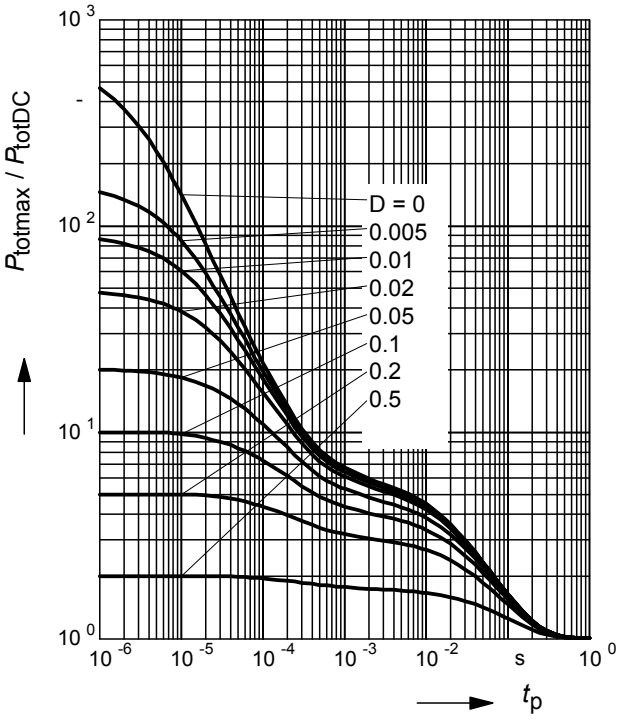
BCR198



Permissible Pulse Load

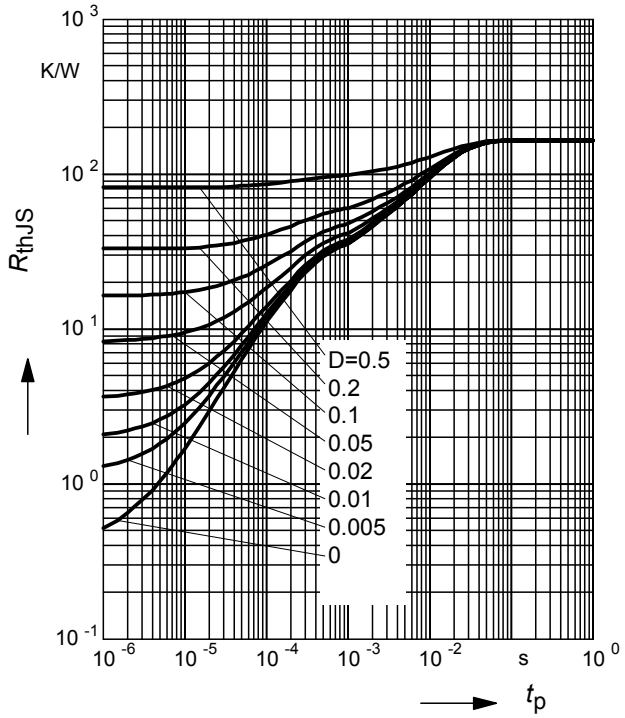
$P_{totmax}/P_{totDC} = f(t_p)$

BCR198



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

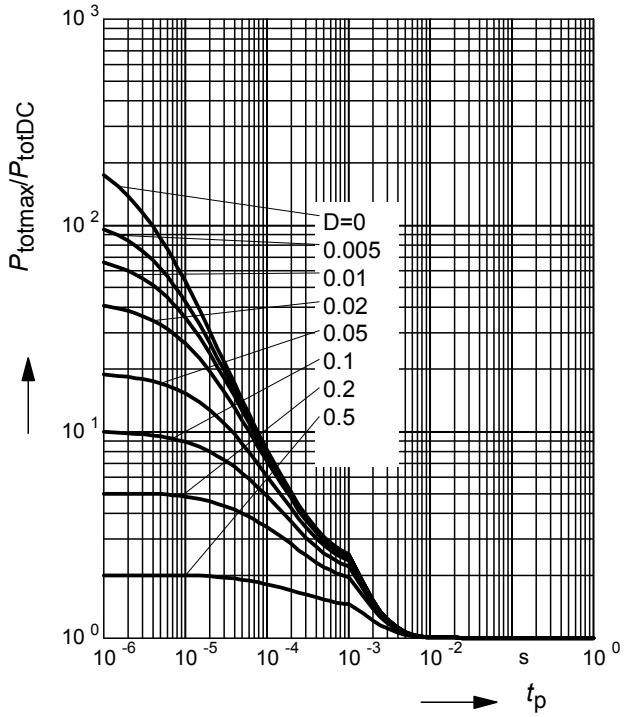
BCR198F



Permissible Pulse Load

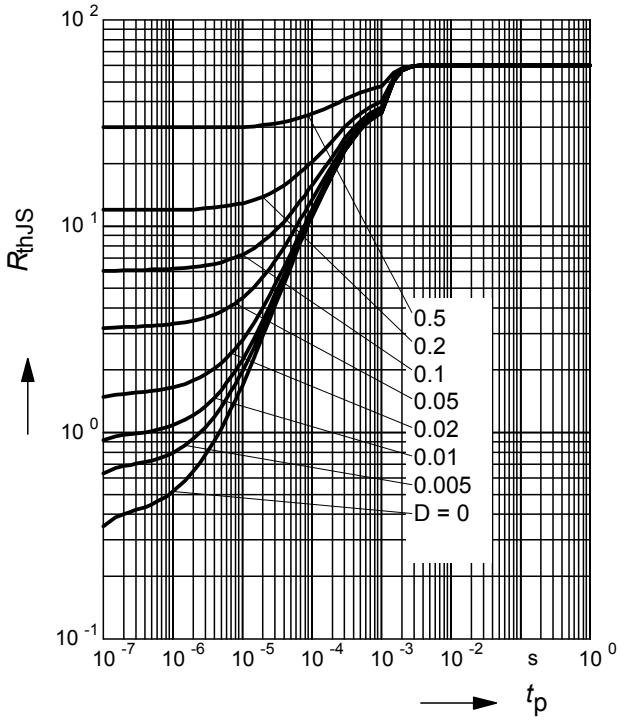
$P_{totmax}/P_{totDC} = f(t_p)$

BCR198F



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

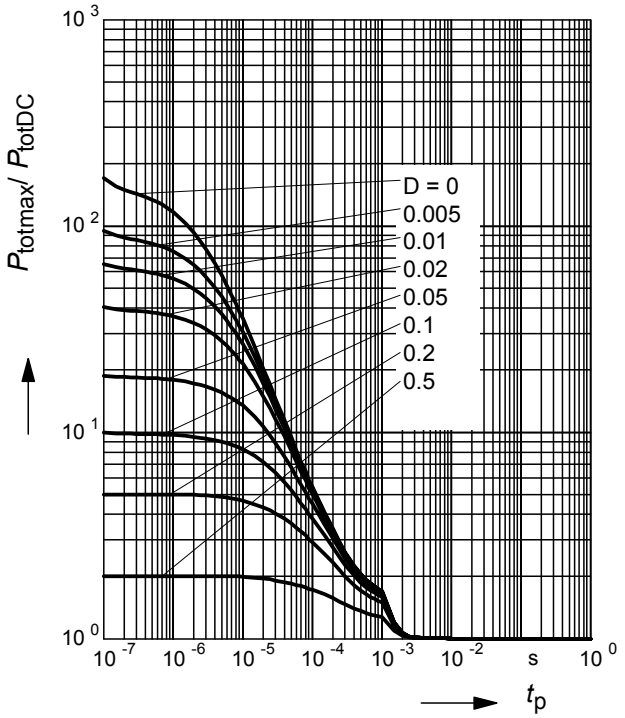
BCR198L3



Permissible Pulse Load

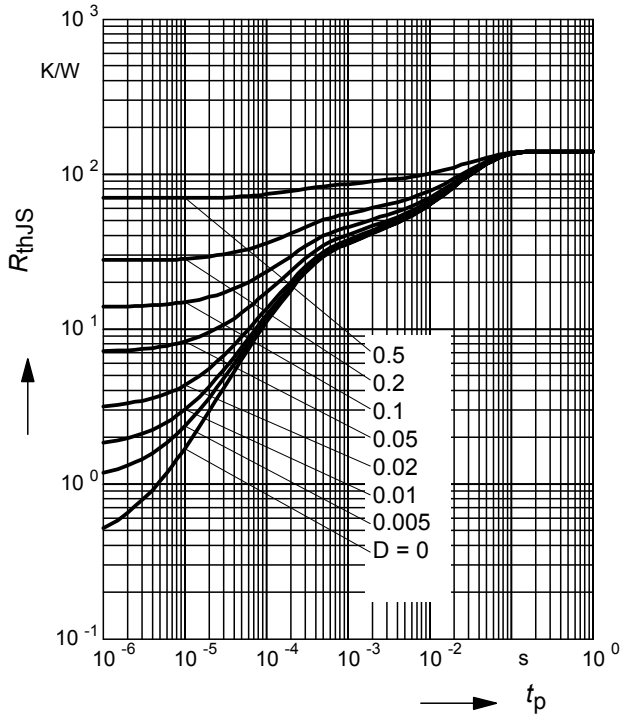
$P_{totmax}/P_{totDC} = f(t_p)$

BCR198L3



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

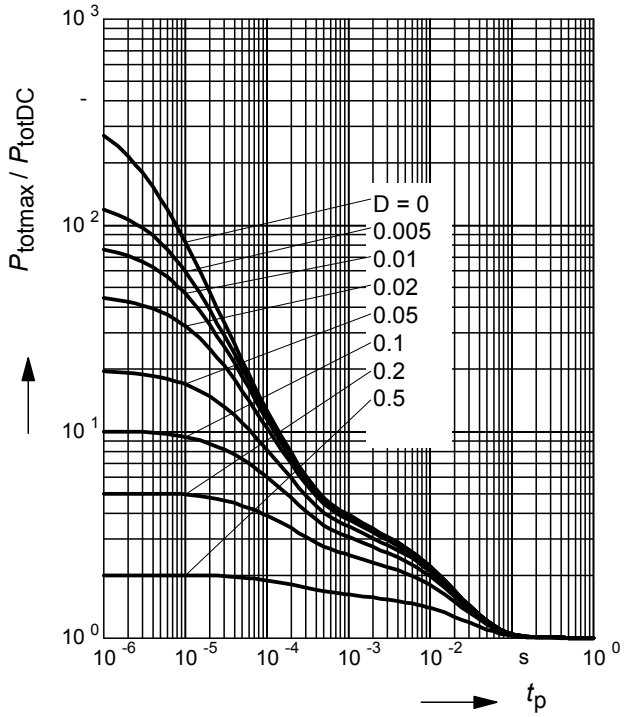
BCR198S



Permissible Pulse Load

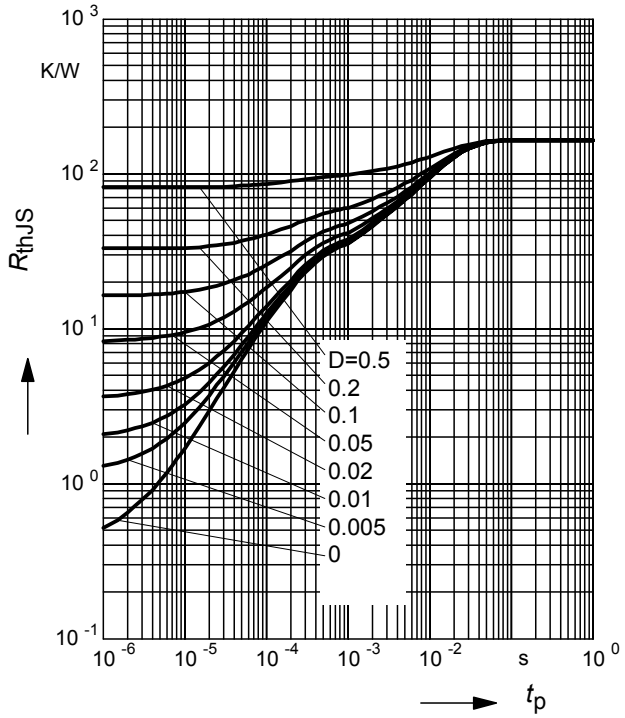
$P_{totmax}/P_{totDC} = f(t_p)$

BCR198S



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

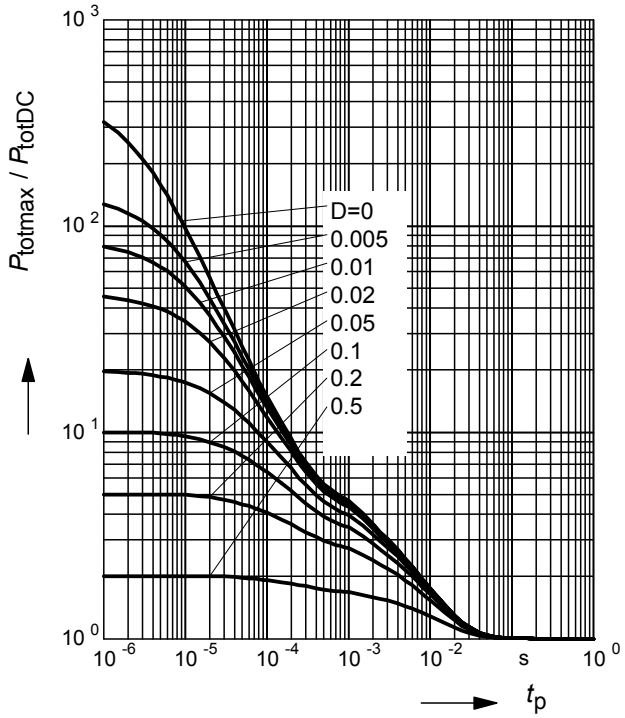
BCR198T



Permissible Pulse Load

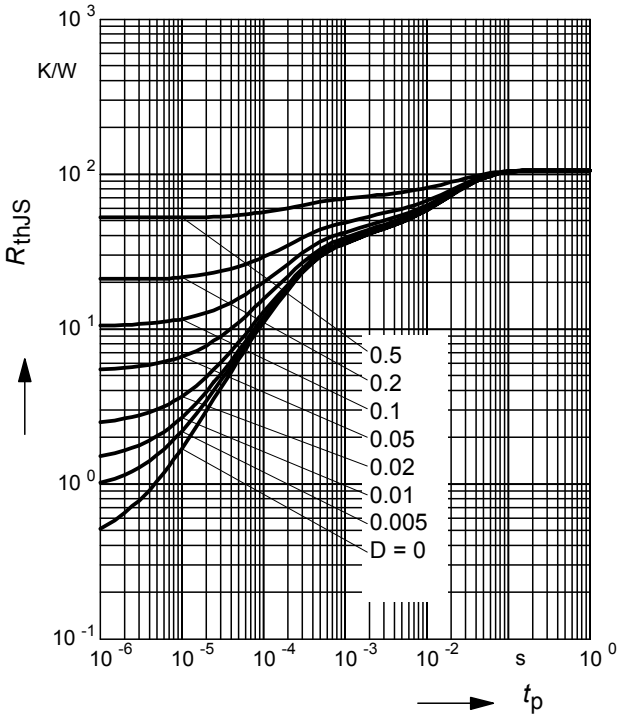
$P_{totmax}/P_{totDC} = f(t_p)$

BCR198T



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

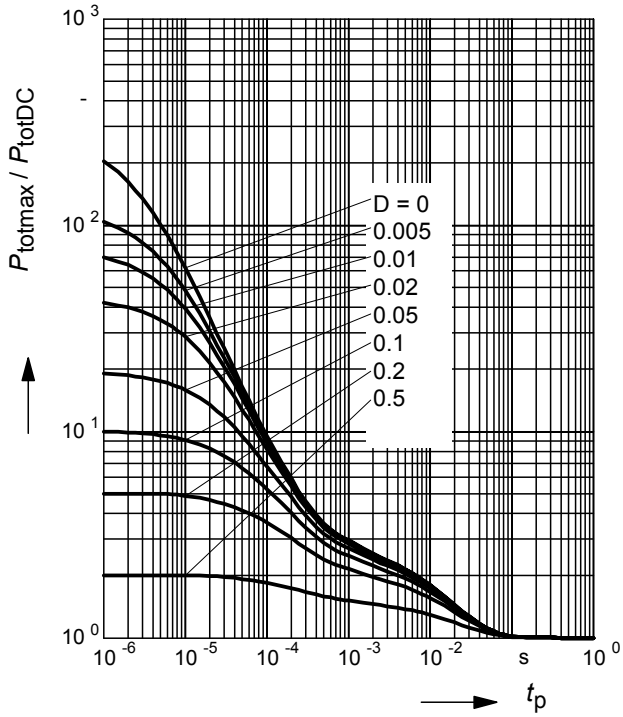
BCR133W



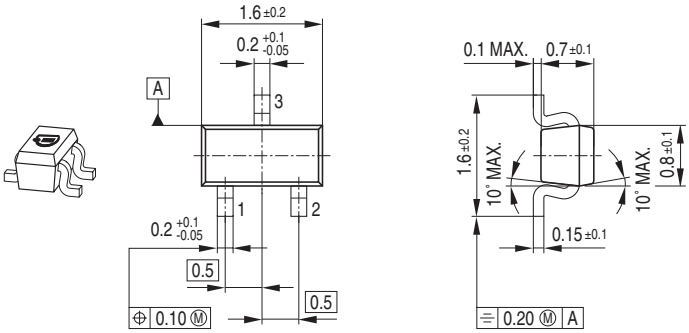
Permissible Pulse Load

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

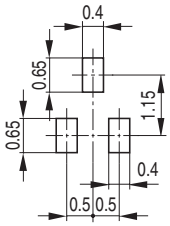
BCR198W



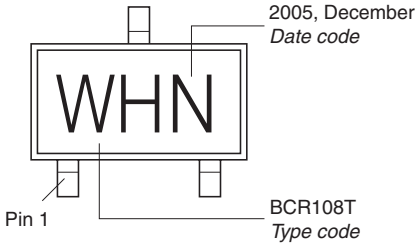
Package Outline



Foot Print

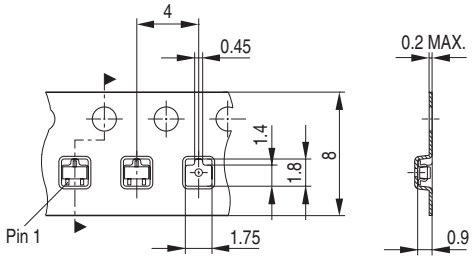


Marking Layout (Example)



Standard Packing

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

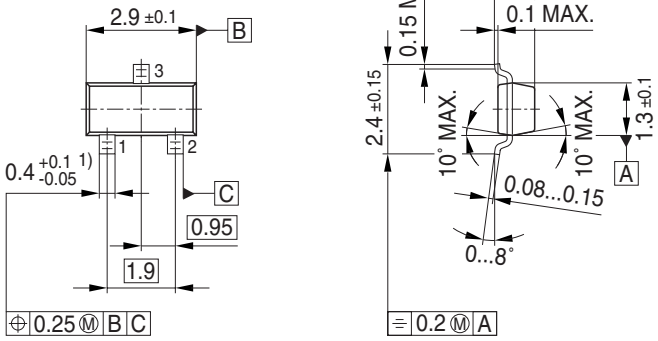


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1)]) CES-Code

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

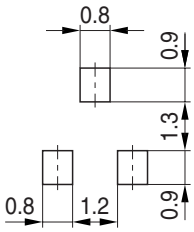
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

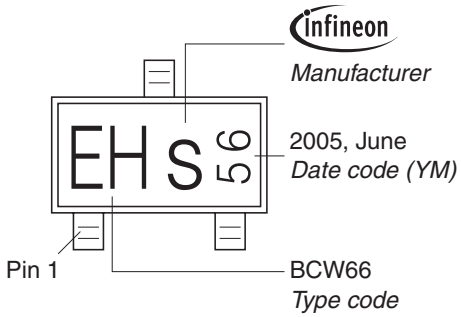


1) Lead width can be 0.6 max. in dambar area

Foot Print

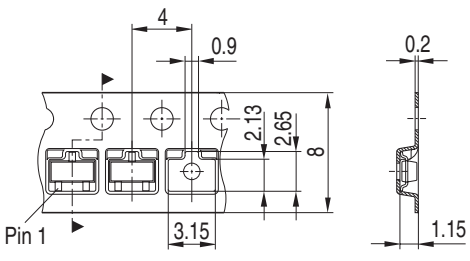


Marking Layout (Example)

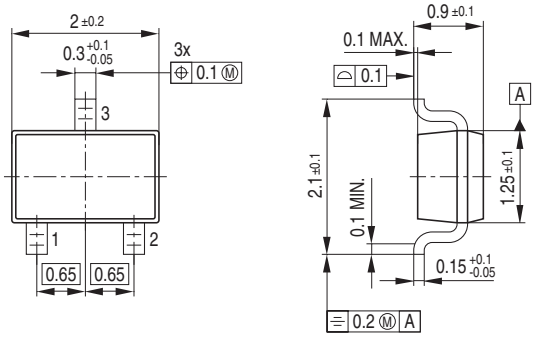


Standard Packing

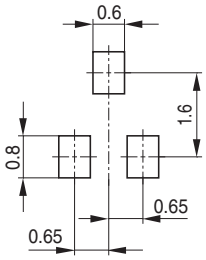
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



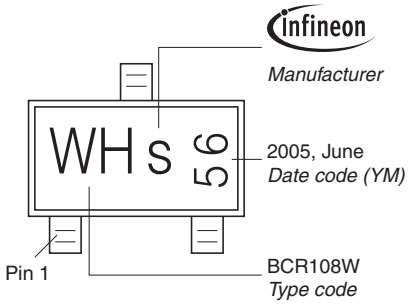
Package Outline



Foot Print

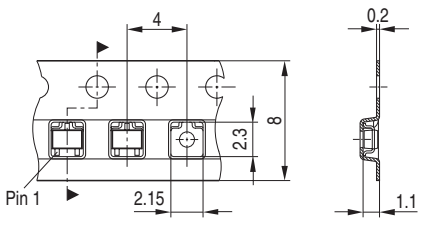


Marking Layout (Example)

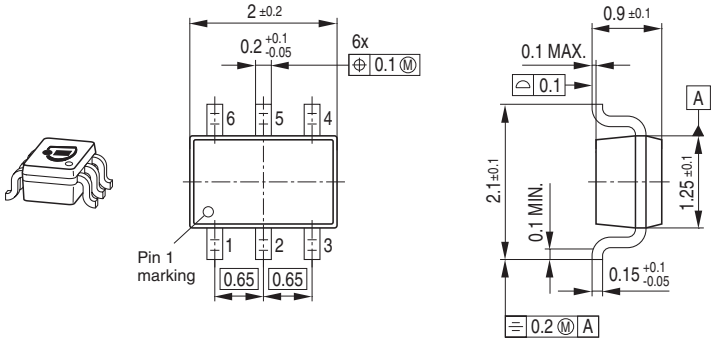


Standard Packing

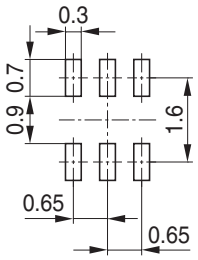
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



Package Outline

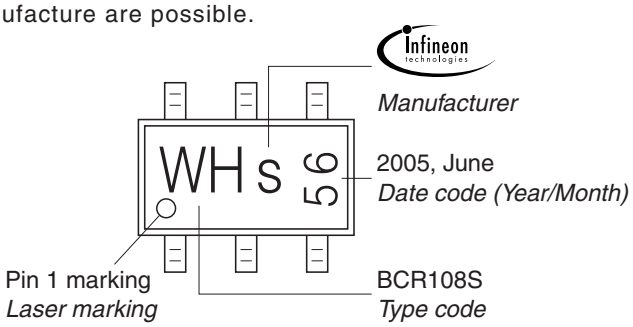


Foot Print



Marking Layout (Example)

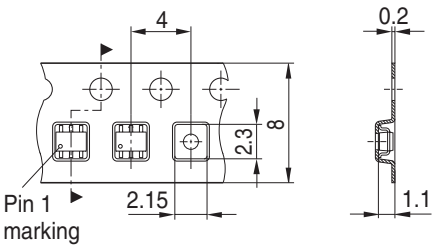
Small variations in positioning of
Date code, Type code and Manufacture are possible.



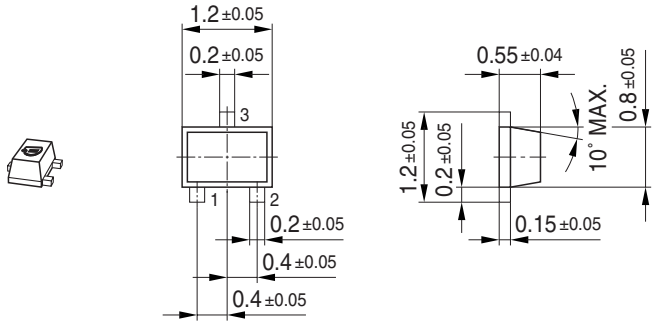
Standard Packing

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

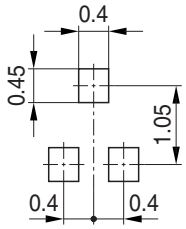
For symmetric types no defined Pin 1 orientation in reel.



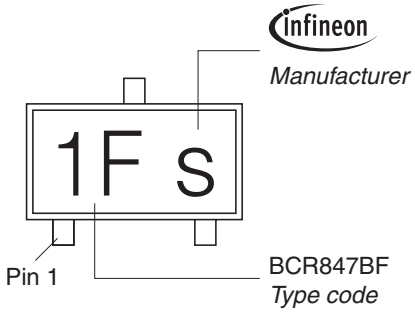
Package Outline



Foot Print

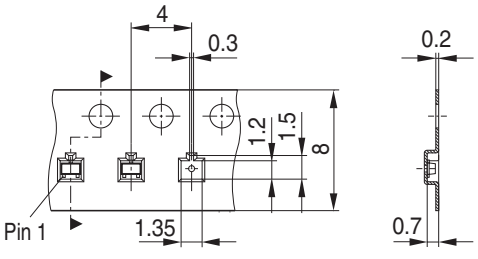


Marking Layout (Example)

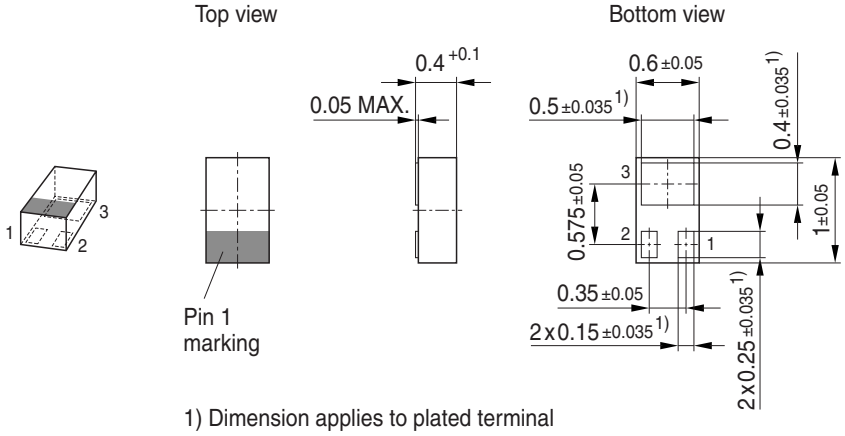


Standard Packing

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



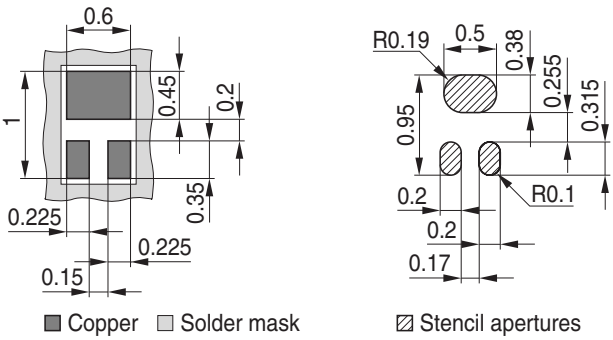
Package Outline



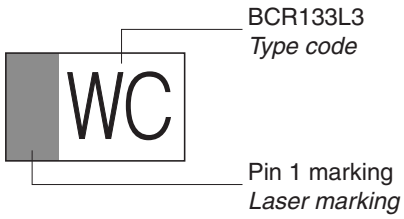
1) Dimension applies to plated terminal

Foot Print

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

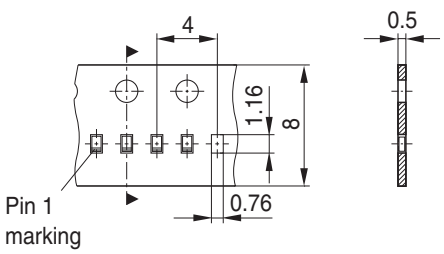


Marking Layout



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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