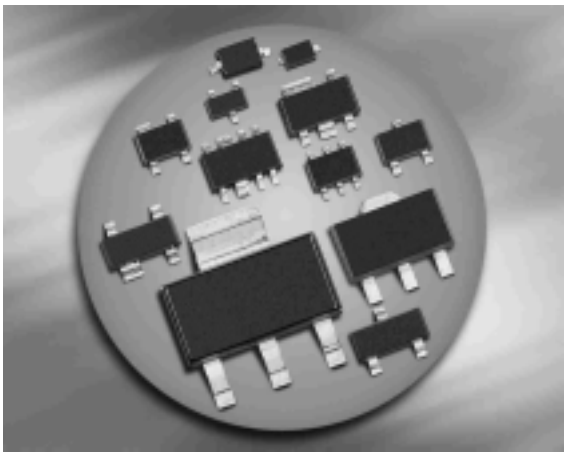
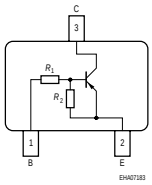
PNP Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor (R_1 = 100kΩ , R_2 = 100kΩ)



BCR151F/L3
BCR151T



Type	Marking	Pin Configuration						Package
BCR151F*	UDs	1=B	2=E	3=C	-	-	-	TSFP-3
BCR151L3*	UD	1=B	2=E	3=C	-	-	-	TSLP-3-4
BCR151T*	UD	1=B	2=E	3=C	-	-	-	SC75

* Preliminary

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	50	V
Collector-base voltage	V_{CBO}	50	
Input forward voltage	$V_{i(fwd)}$	20	
Input reverse voltage	$V_{i(rev)}$	10	
Collector current	I_C	50	mA
Total power dissipation-	P_{tot}		mW
BCR151F, $T_S \leq 128°C$		250	
BCR151L3, $T_S \leq 135°C$		250	
BCR151T, $T_S \leq 109°C$		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
BCR151F		≤ 90	
BCR151L3		≤ 60	
BCR151T		≤ 165	

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

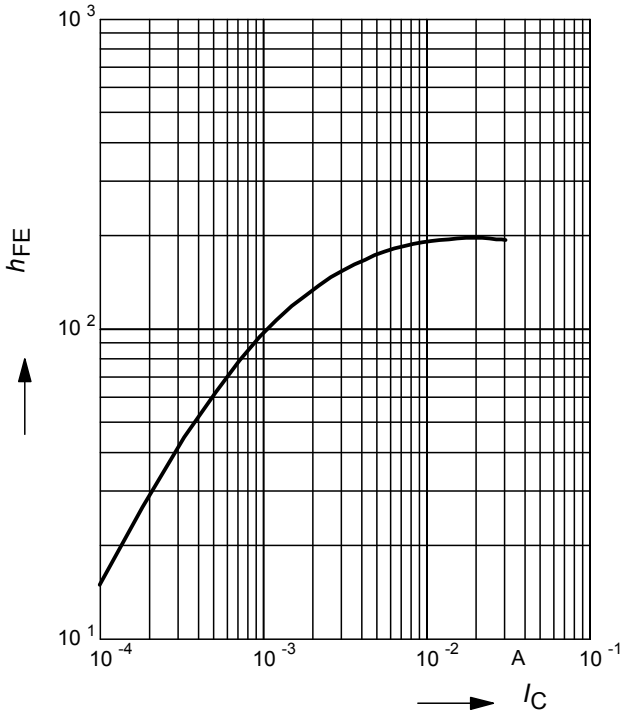
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage I_C = 100 µA, I_B = 0	$V_{(BR)CEO}$	50	-	-	V
Collector-base breakdown voltage I_C = 10 µA, I_E = 0	$V_{(BR)CBO}$	50	-	-	
Collector-base cutoff current V_{CB} = 40 V, I_E = 0	I_{CBO}	-	-	100	nA
Emitter-base cutoff current V_{EB} = 10 V, I_C = 0	I_{EBO}	-	-	75	µA
DC current gain[2)] I_C = 5 mA, V_{CE} = 5 V	h_{FE}	70	-	-	-
Collector-emitter saturation voltage[2)] I_C = 5 mA, I_B = 0.25 mA	V_{CEsat}	-	-	0.3	V
Input off voltage I_C = 100 µA, V_{CE} = 5 V	$V_{i(off)}$	0.5	-	1.8	
Input on voltage I_C = 1 mA, V_{CE} = 0.3 V	$V_{i(on)}$	1	-	3	
Input resistor	R_1	70	100	130	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	-	120	-	MHz
Collector-base capacitance V_{CB} = 10 V, f = 100 MHz	C_{cb}	-	3	-	pF

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

[2]Pulse test: t < 300µs; D < 2%

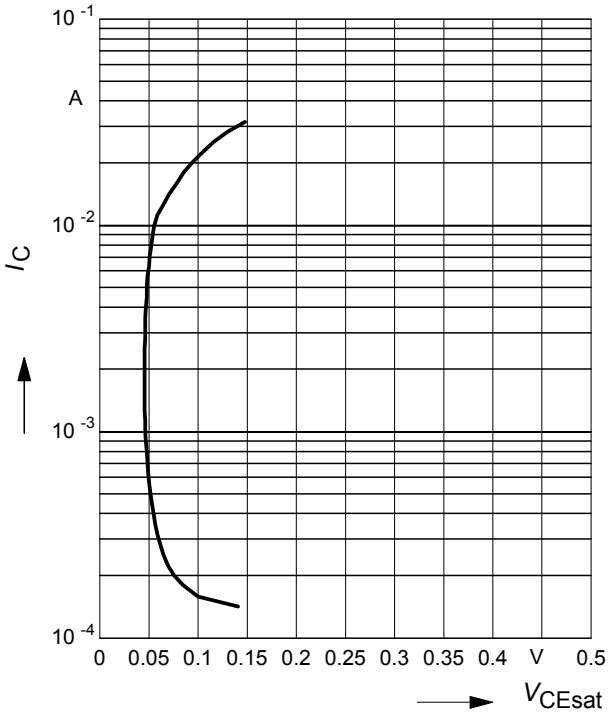
DC current gain $h_{FE} = f(I_C)$

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



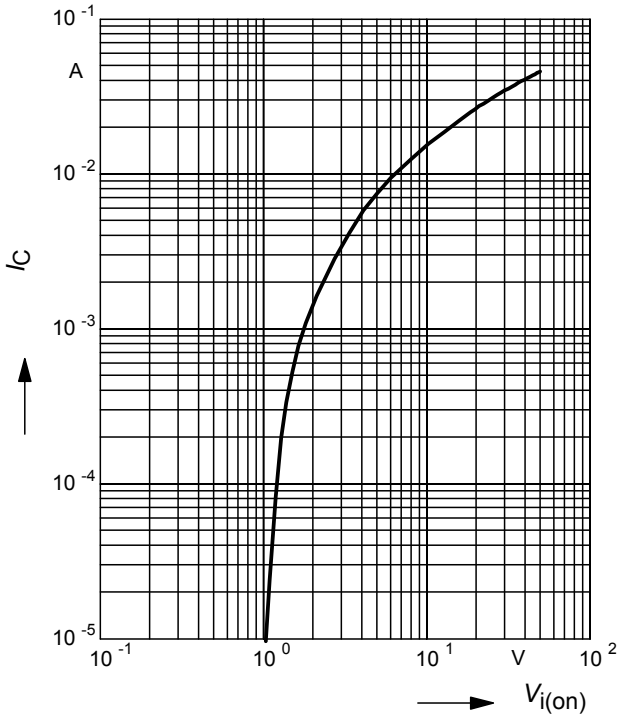
Collector-emitter saturation voltage

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



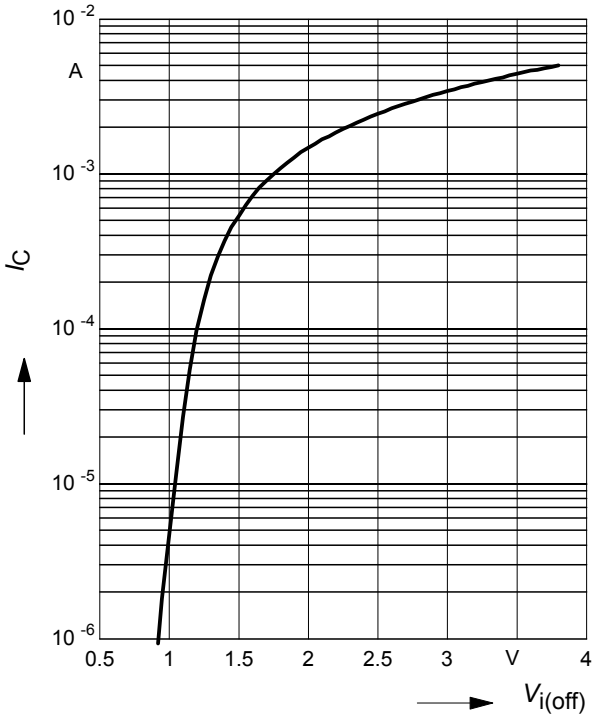
Input on Voltage $V_{i(on)} = f(I_C)$

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

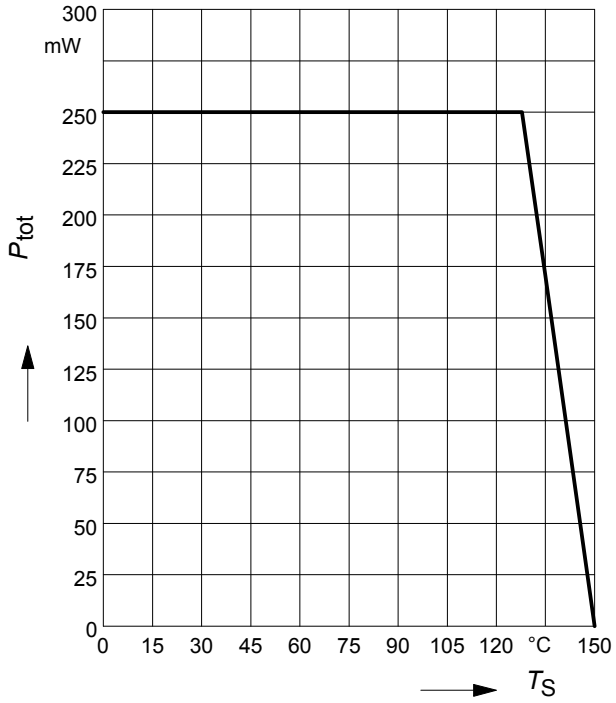


Input off voltage $V_{i(off)} = f(I_C)$

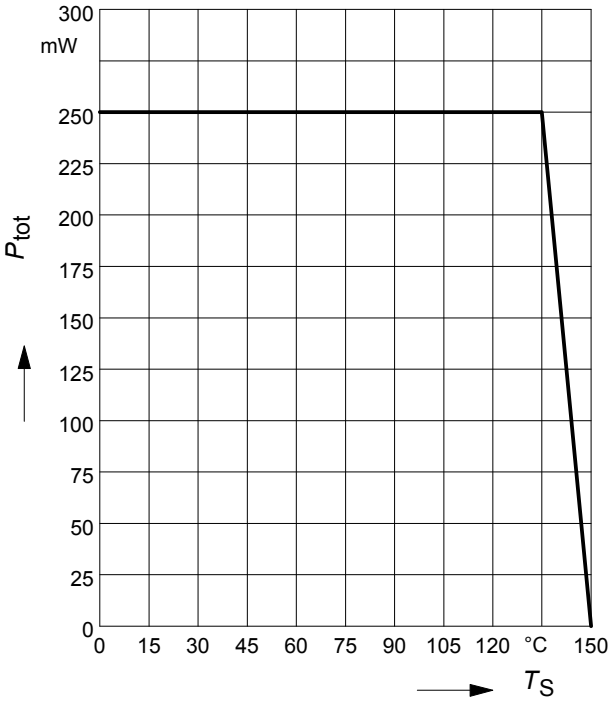
V_{CE} = 5V (common emitter configuration)



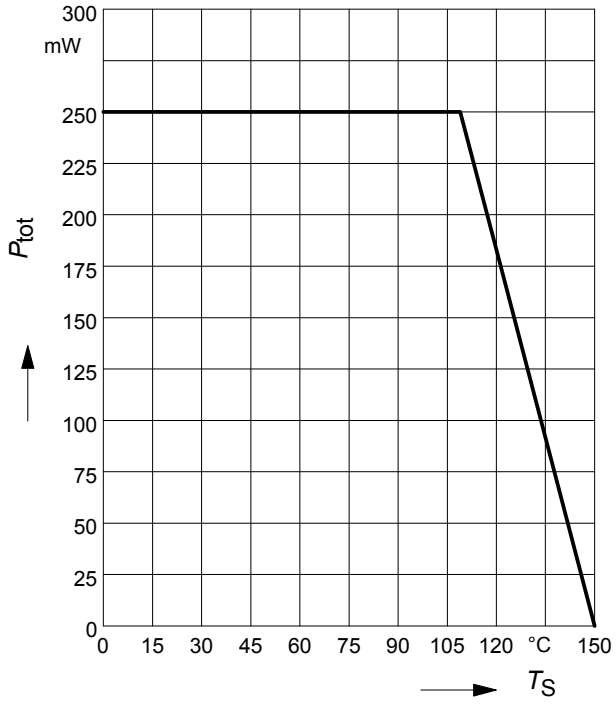
Total power dissipation $P_{tot} = f(T_S)$
BCR151F



Total power dissipation $P_{tot} = f(T_S)$
BCR151L3

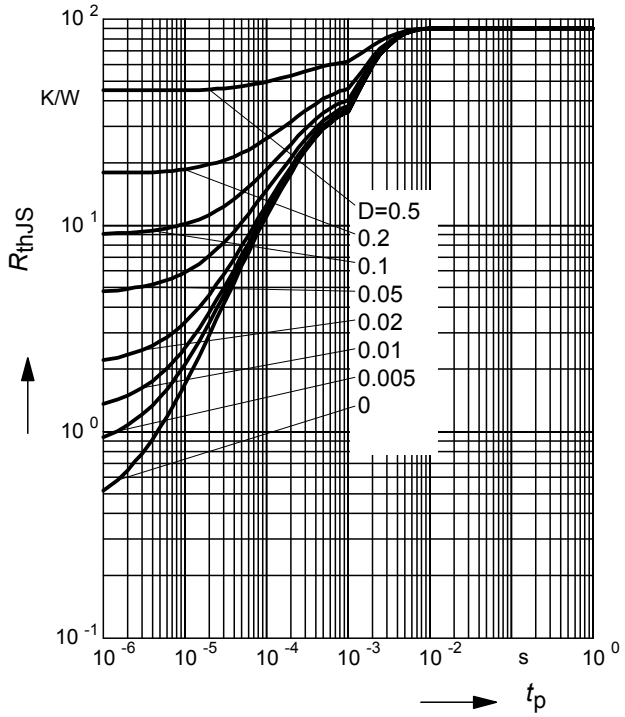


Total power dissipation $P_{tot} = f(T_S)$
BCR151T



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

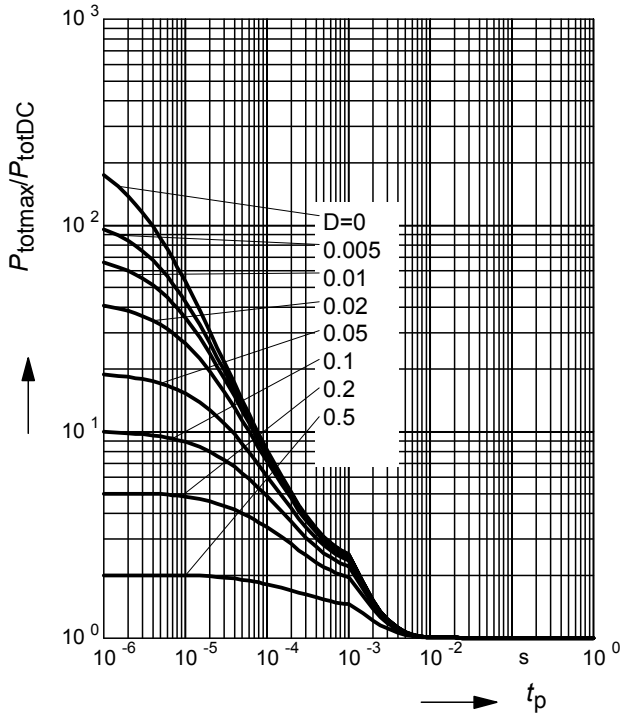
BCR151F



Permissible Pulse Load

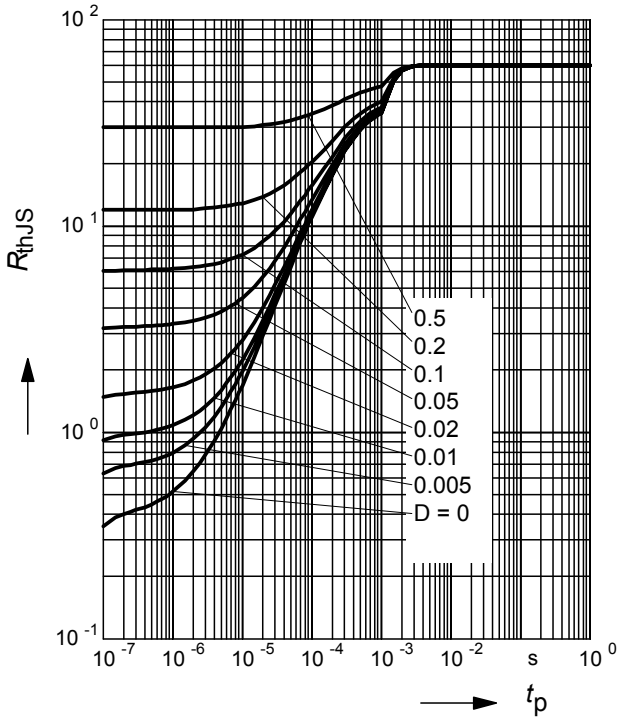
$P_{totmax}/P_{totDC} = f(t_p)$

BCR151F



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

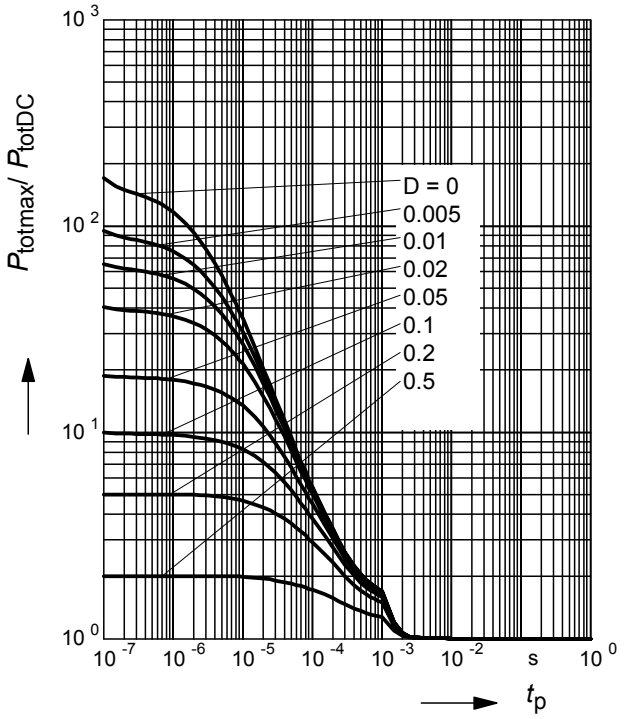
BCR151L3



Permissible Pulse Load

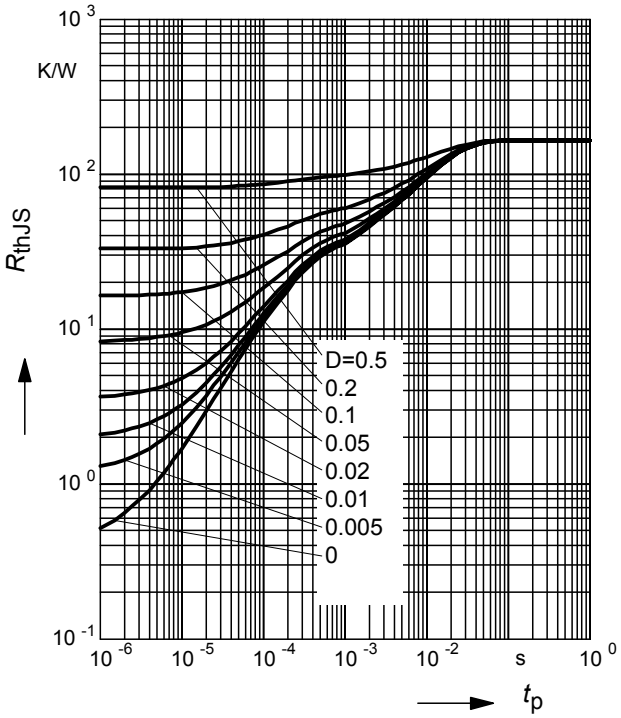
$P_{totmax}/P_{totDC} = f(t_p)$

BCR151L3



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

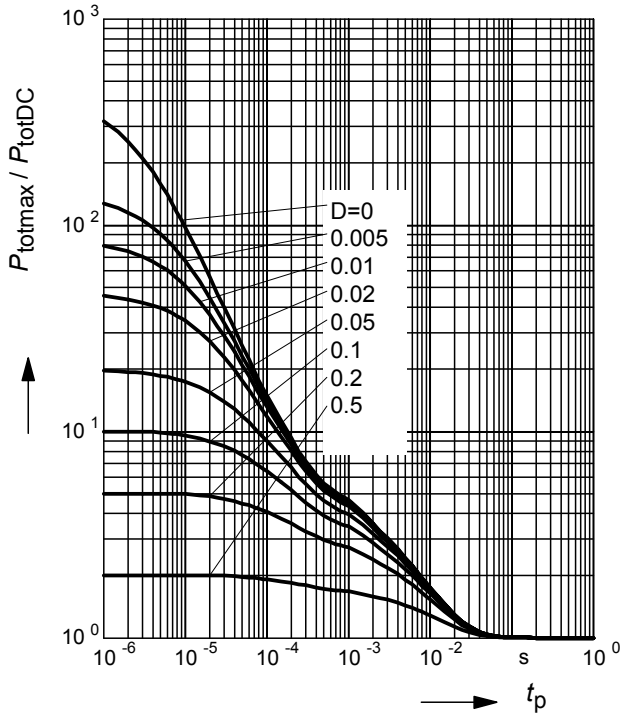
BCR151T



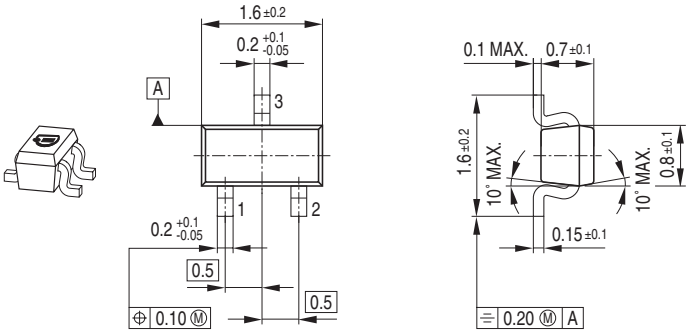
Permissible Pulse Load

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

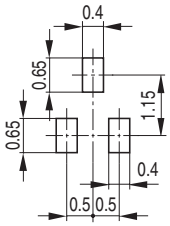
BCR151T



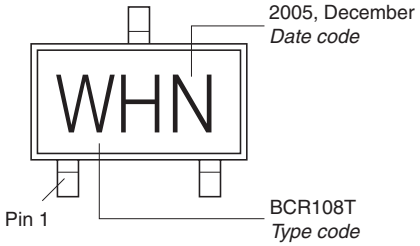
Package Outline



Foot Print

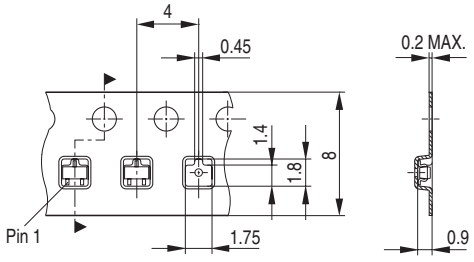


Marking Layout (Example)



Standard Packing

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

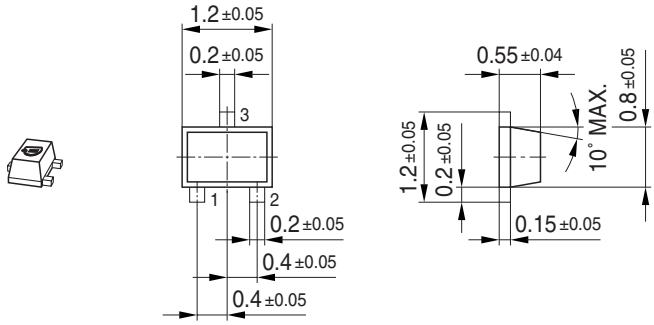


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1]) CES-Code

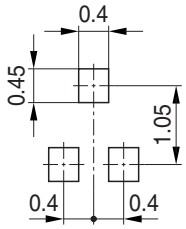
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	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.

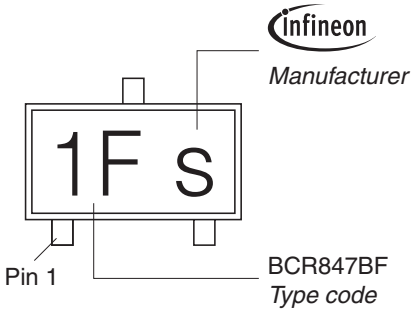
Package Outline



Foot Print



Marking Layout (Example)



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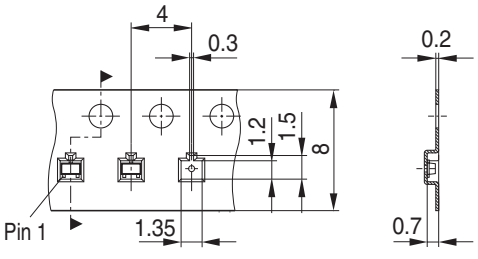
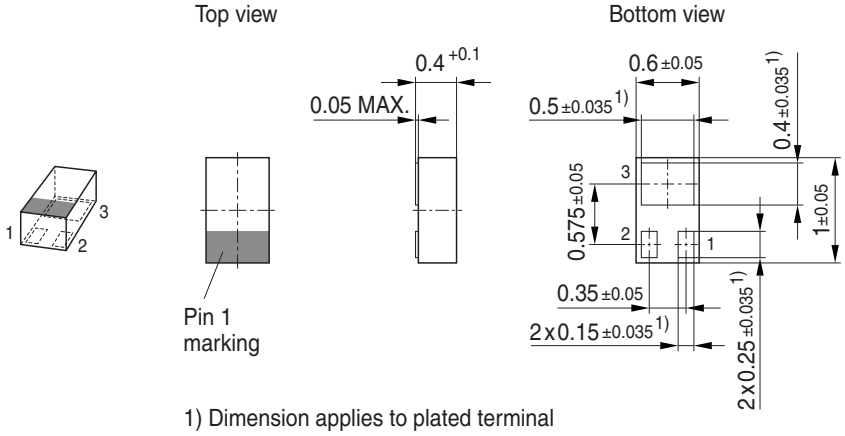
Reel ø330 mm = 10.000 Pieces/Reel



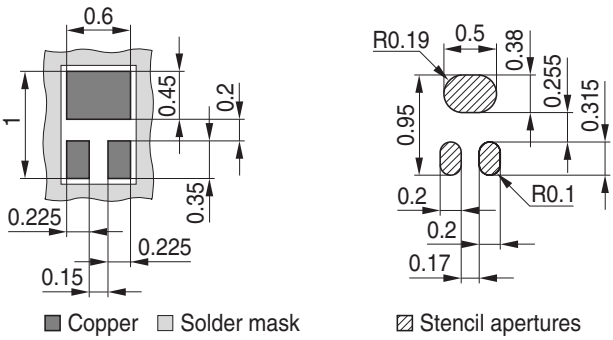
Package Outline



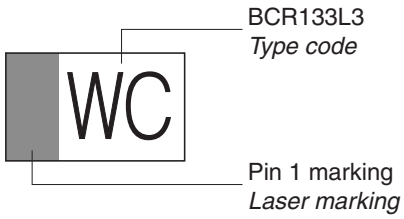
1) Dimension applies to plated terminal

Foot Print

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

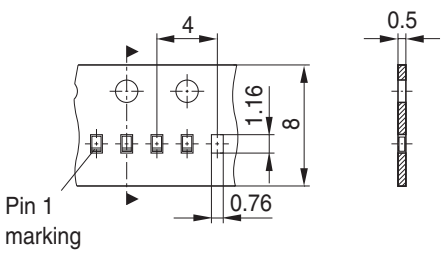


Marking Layout



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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