

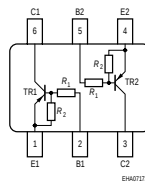
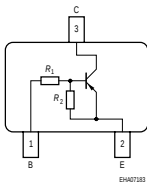
PNP Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor ($R_1 = 22k\Omega$, $R_2 = 47k\Omega$)
- For 6-PIN packages: two (galvanic) internal isolated transistors with good matching in one package



BCR192/F/L3
BCR192T/W

BCR192U



Type	Marking	Pin Configuration						Package
BCR192	WPs	1=B	2=E	3=C	-	-	-	SOT23
BCR192F	WPs	1=B	2=E	3=C	-	-	-	TSFP-3
BCR192L3	WP	1=B	2=E	3=C	-	-	-	TSLP-3-4
BCR192T	WPs	1=B	2=E	3=C	-	-	-	SC75
BCR192U	WPs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SC74
BCR192W	WPs	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	
Emitter-base voltage	V_{EBO}	50	
Input on voltage	$V_{I(on)}$	30	
Collector current	I_C	100	mA
Total power dissipation- BCR192, $T_S \leq 102^\circ\text{C}$ BCR192F, $T_S \leq 128^\circ\text{C}$ BCR192L3, $T_S \leq 135^\circ\text{C}$ BCR192T, $T_S \leq 109^\circ\text{C}$ BCR192U, $T_S \leq 118^\circ\text{C}$ BCR192W, $T_S \leq 124^\circ\text{C}$	P_{tot}	200 250 250 250 250 250	mW
Junction temperature	T_j	150	
Storage temperature	T_{stg}	150 ... -65	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾ BCR192 BCR192F BCR192L3 BCR192T BCR192U BCR192W	R_{thJS}	≤ 240 ≤ 90 ≤ 60 ≤ 165 ≤ 133 ≤ 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}	-	-	227	μA
DC current gain ¹⁾ $I_C = 5\ \text{mA}$, $V_{\text{CE}} = 5\ \text{V}$	h_{FE}	70	-	-	-
Collector-emitter saturation voltage ¹⁾ $I_C = 10\ \text{mA}$, $I_B = 0,5\ \text{mA}$	V_{CEsat}	-	-	0,3	V
Input off voltage $I_C = 100\ \mu\text{A}$, $V_{\text{CE}} = 5\ \text{V}$	$V_{\text{i(off)}}$	0,5	-	1,2	
Input on voltage $I_C = 2\ \text{mA}$, $V_{\text{CE}} = 0,3\ \text{V}$	$V_{\text{i(on)}}$	0,8	-	2,5	
Input resistor	R_1	15	22	29	k Ω
Resistor ratio	R_1/R_2	0,42	0,47	0,52	-

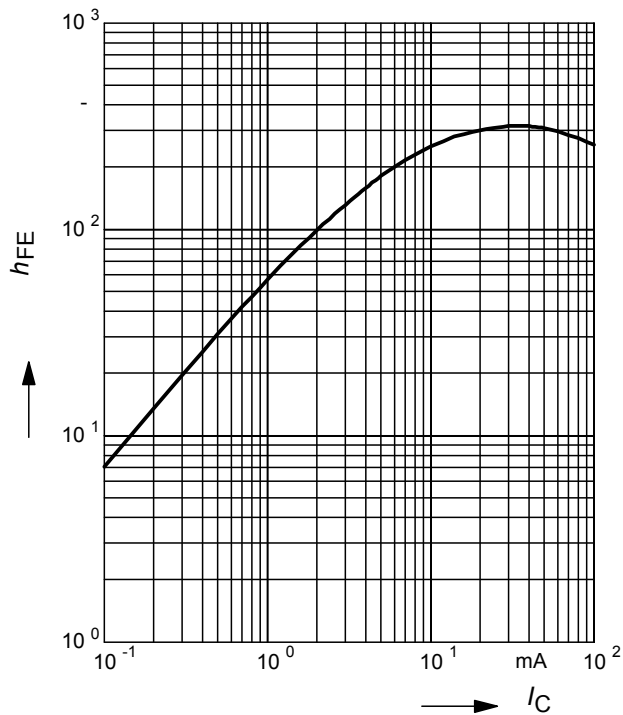
AC Characteristics

Transition frequency $I_C = 10\ \text{mA}$, $V_{CE} = 5\ \text{V}$, $f = 100\ \text{MHz}$	f_T	-	200	-	MHz
Collector-base capacitance $V_{CB} = 10\ \text{V}$, $f = 1\ \text{MHz}$	C_{cb}	-	3	-	pF

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

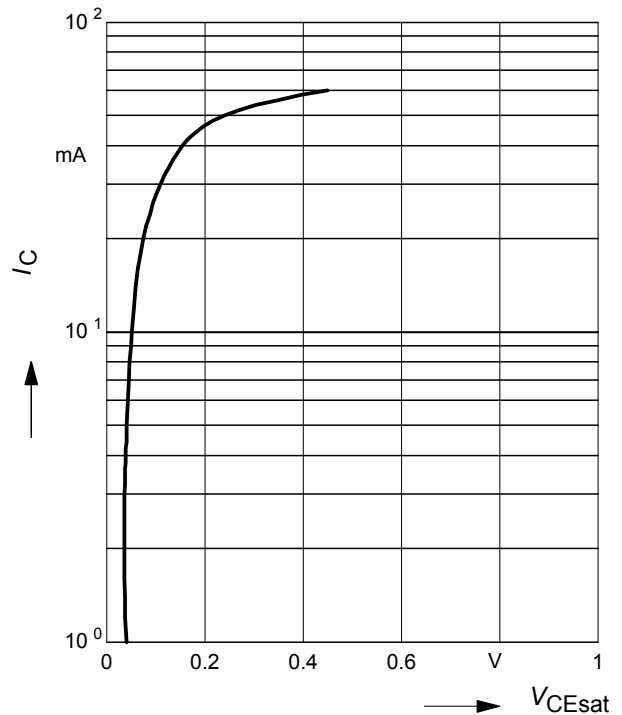
DC current gain $h_{FE} = f(I_C)$

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



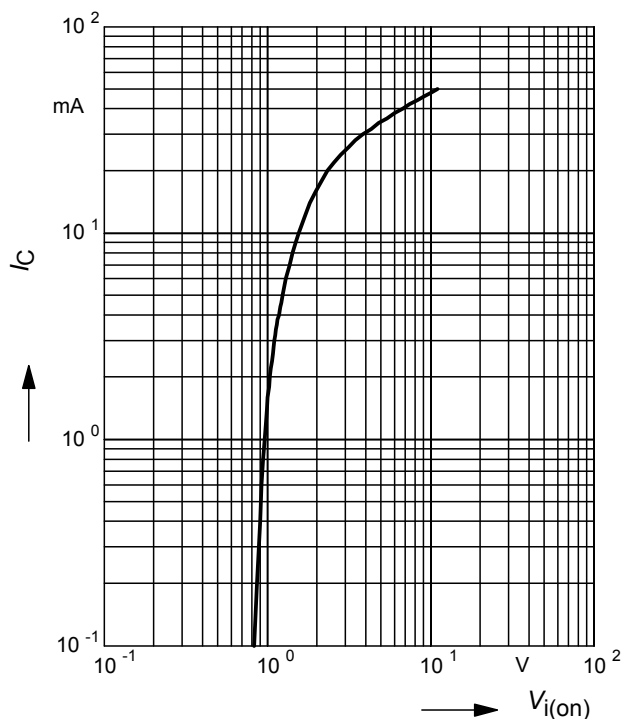
Collector-emitter saturation voltage

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



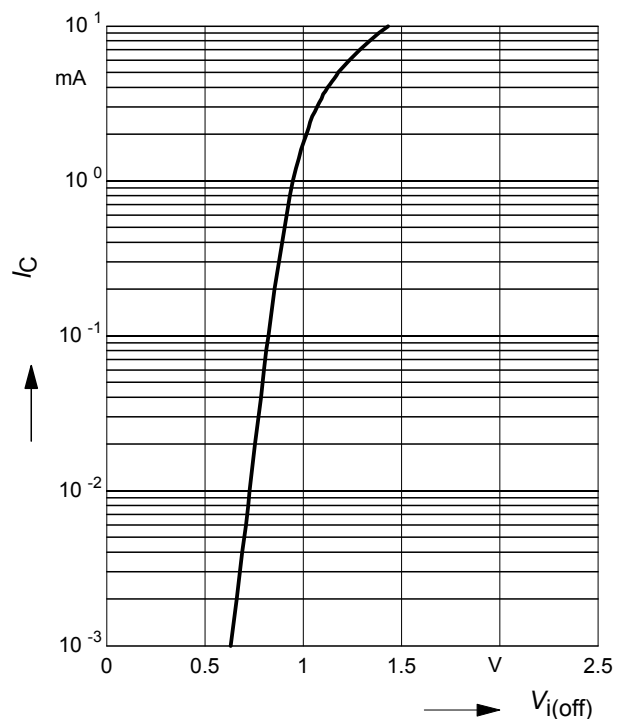
Input on Voltage $V_{i(on)} = f(I_C)$

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



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

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



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

BCR192



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

BCR192F



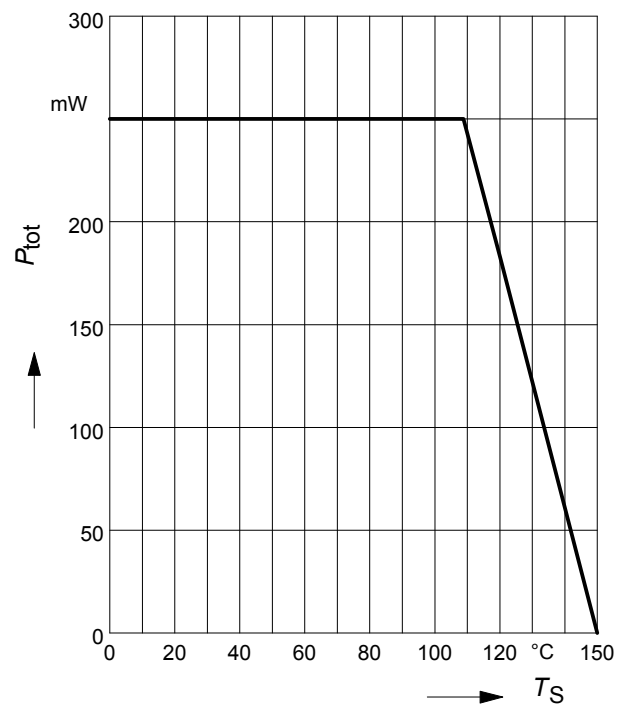
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR192L3



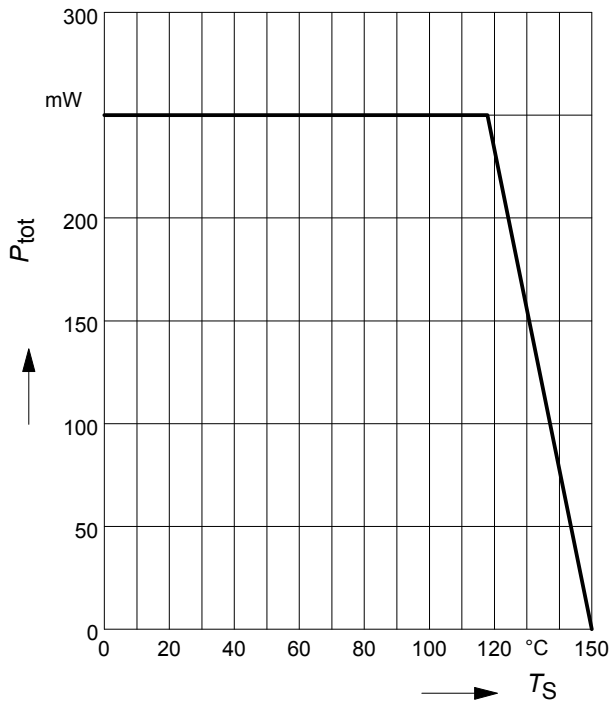
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR192T



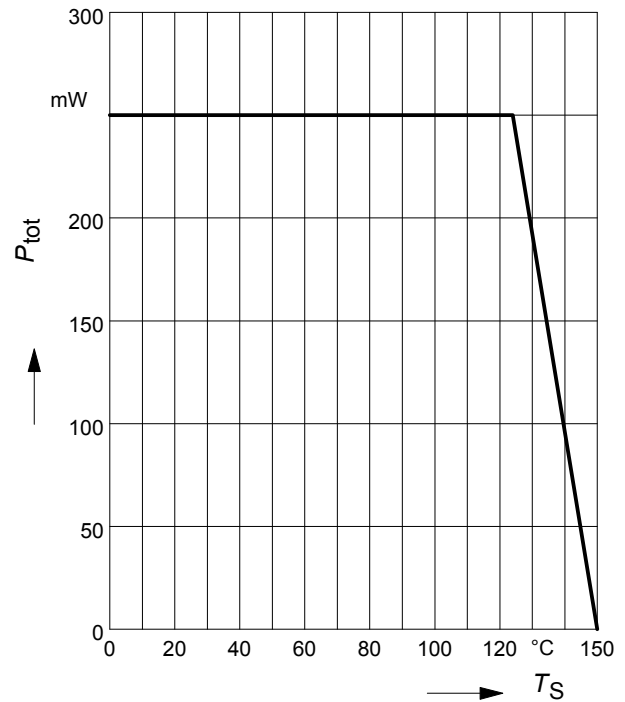
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR192U



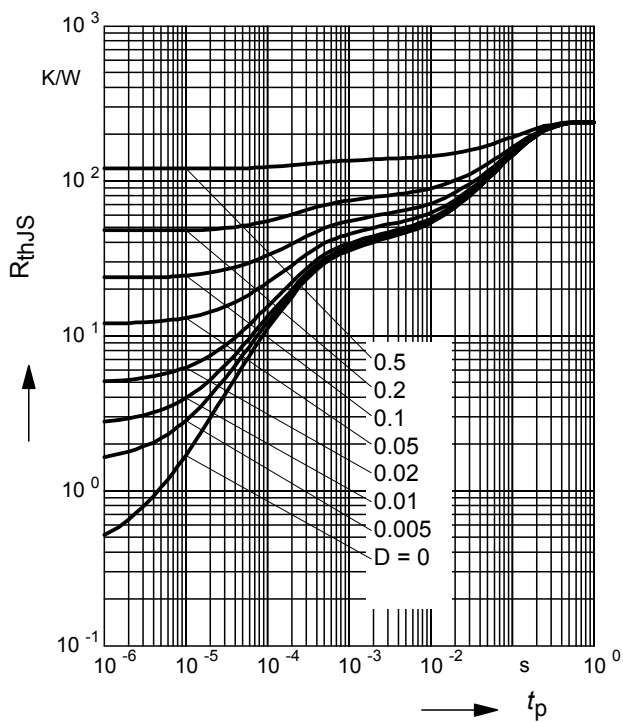
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR192W



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

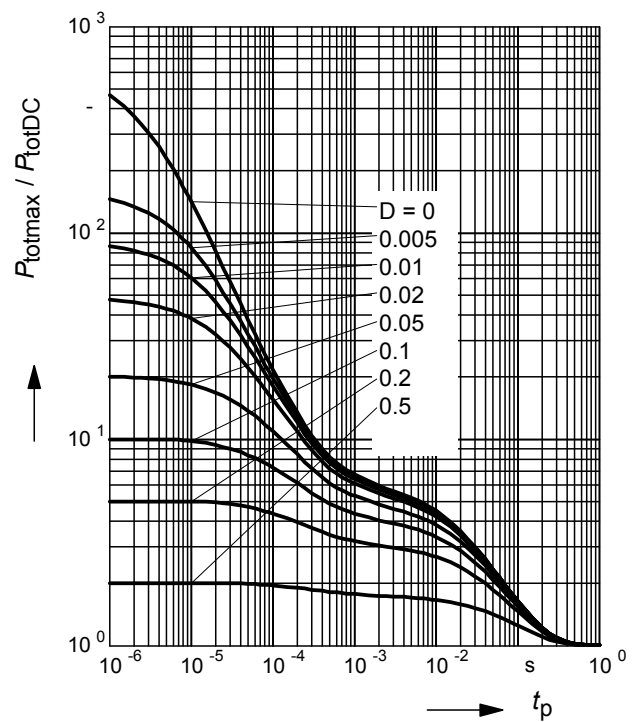
BCR192



Permissible Pulse Load

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

BCR192



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

BCR192F



Permissible Pulse Load

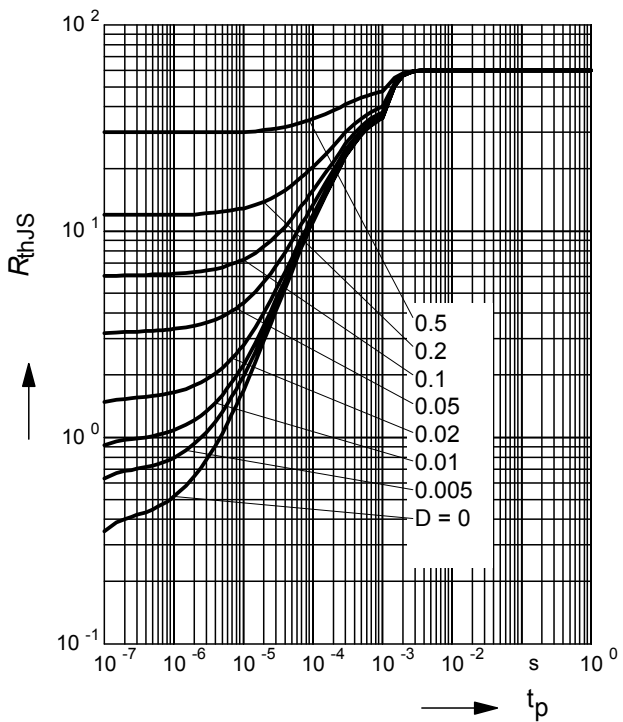
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR192F



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

BCR192L3



Permissible Pulse Load

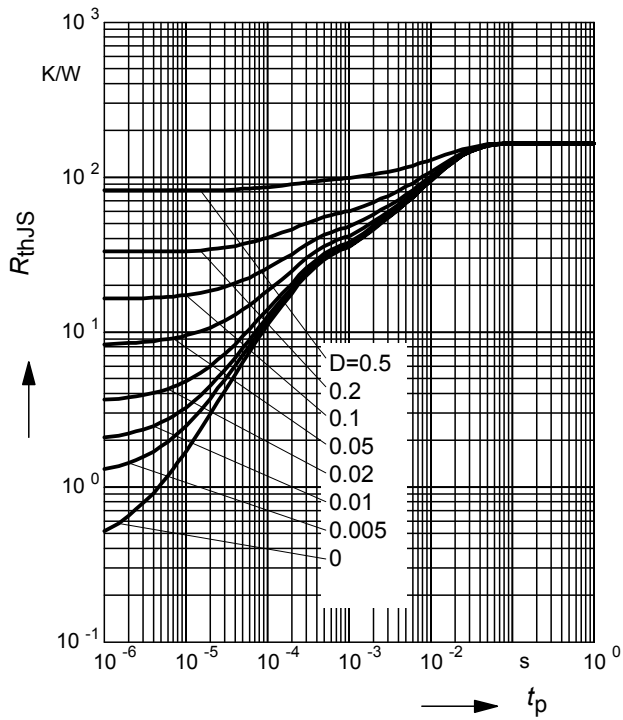
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR192L3



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

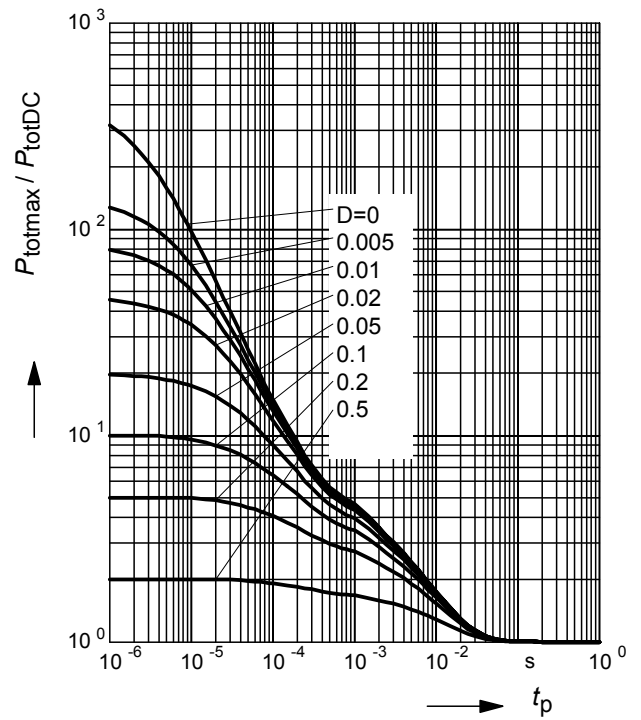
BCR192T



Permissible Pulse Load

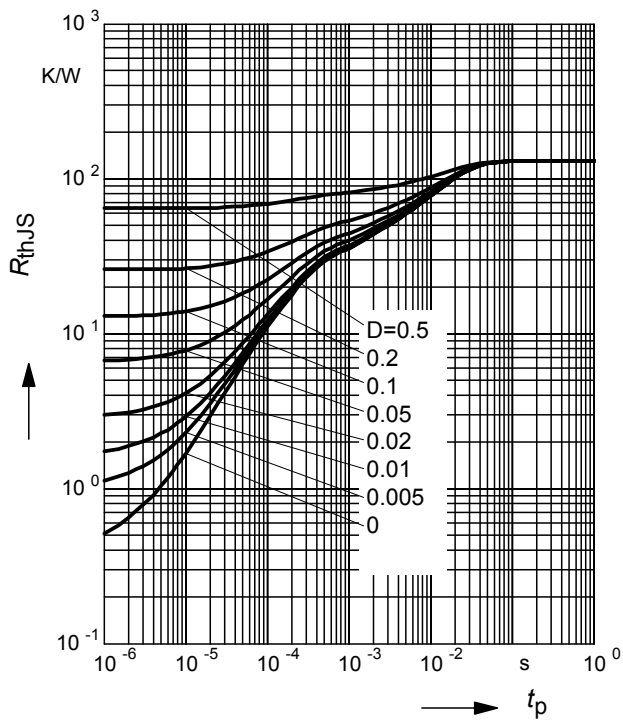
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR192T



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

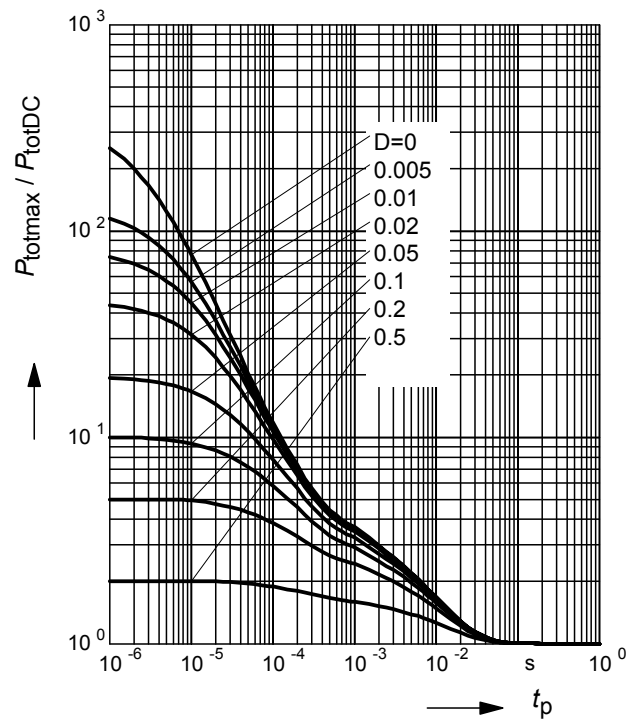
BCR192U



Permissible Pulse Load

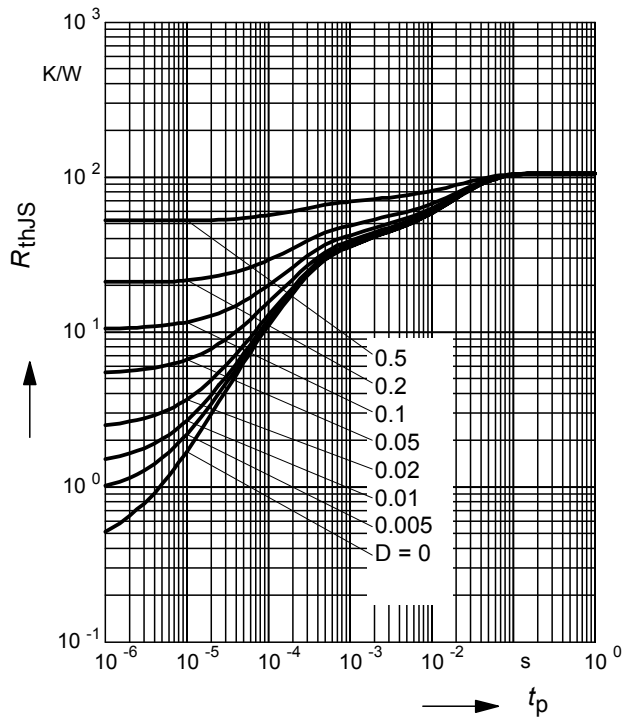
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR192U



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

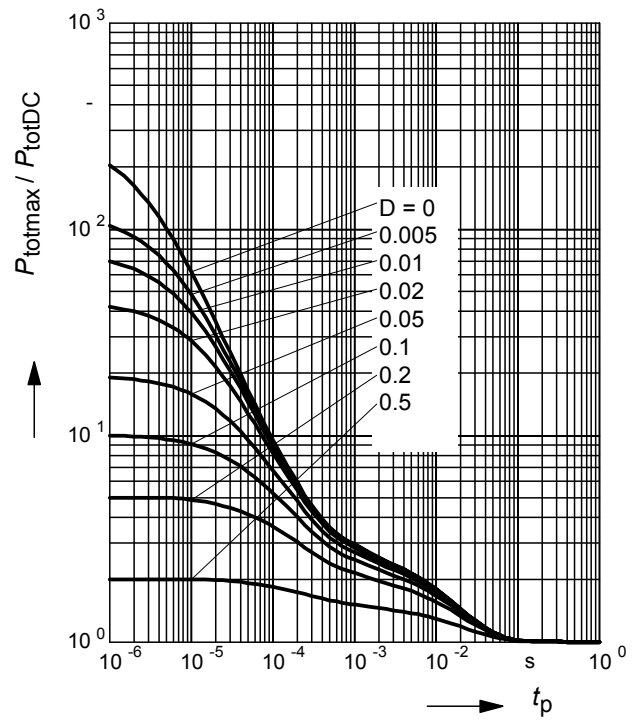
BCR192W



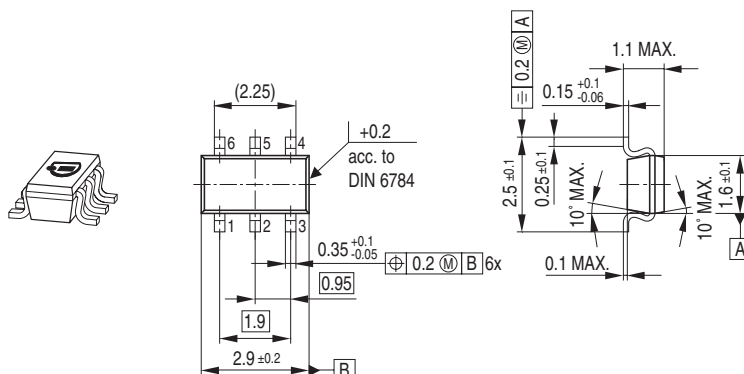
Permissible Pulse Load

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

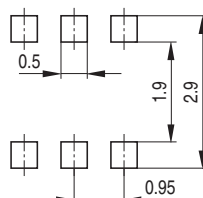
BCR192W



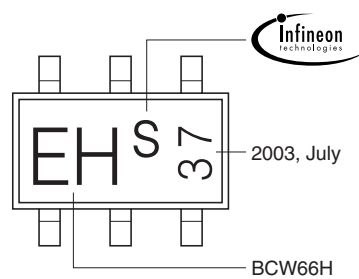
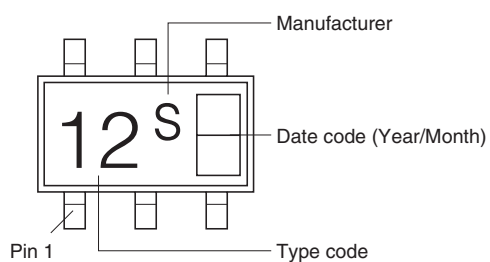
Package Outline



Foot Print



Marking Layout

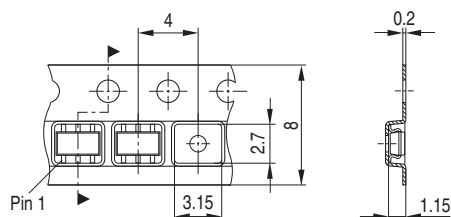


Example

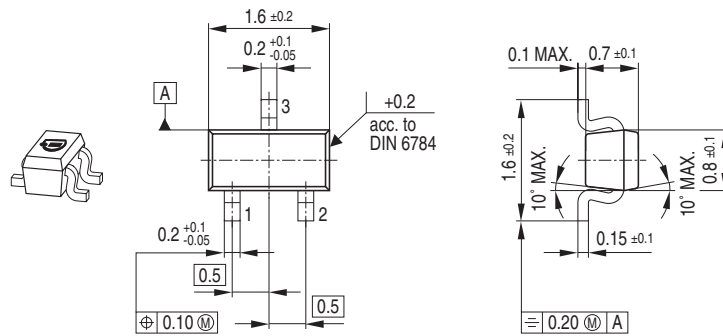
Packing

Code E6327: Reel ø180 mm = 3.000 Pieces/Reel

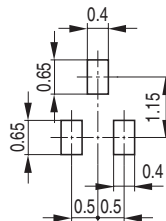
Code E6433: Reel ø330 mm = 10.000 Pieces/Reel



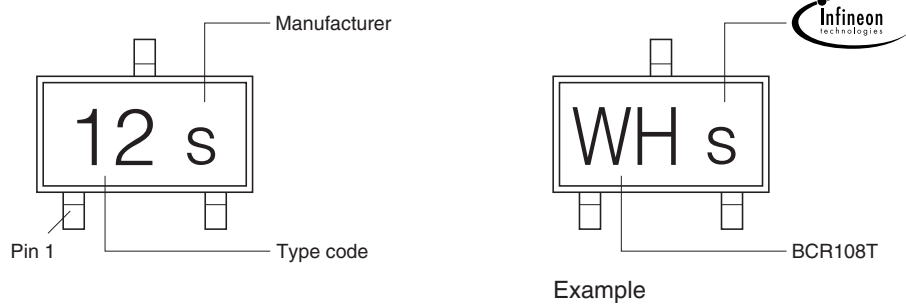
Package Outline



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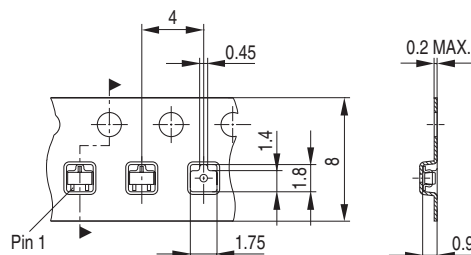


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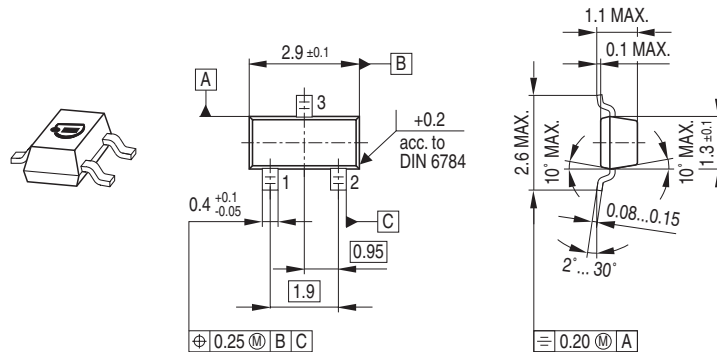


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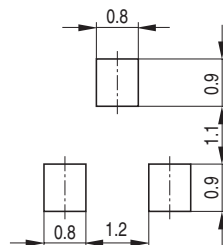
Code E6327: Reel ø180 mm = 3.000 Pieces/Reel
Code E6433: Reel ø330 mm = 10.000 Pieces/Reel



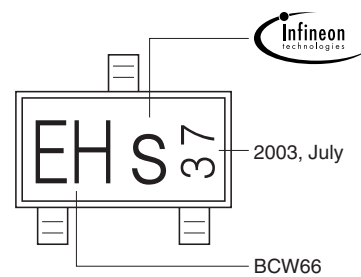
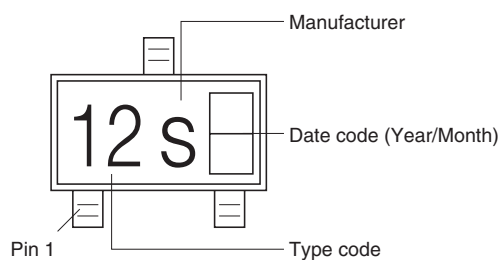
Package Outline



Foot Print



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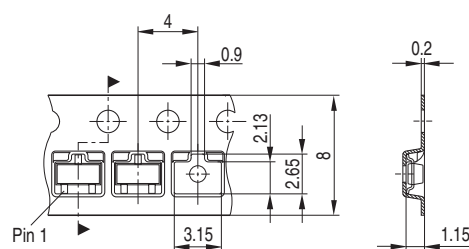


Example

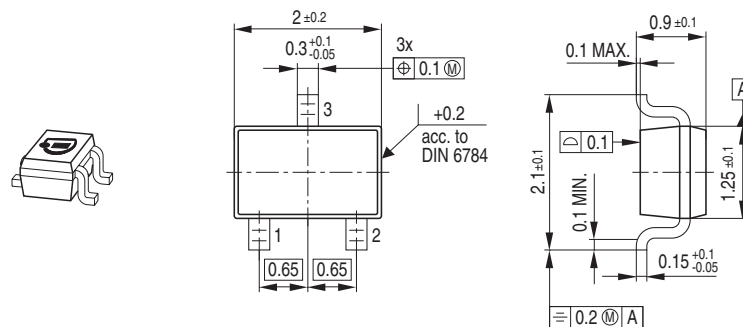
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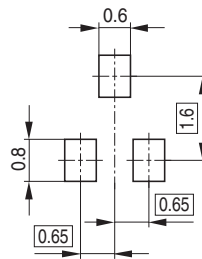
Code E6433: Reel $\varnothing 330 \text{ mm}$ = 10.000 Pieces/Reel



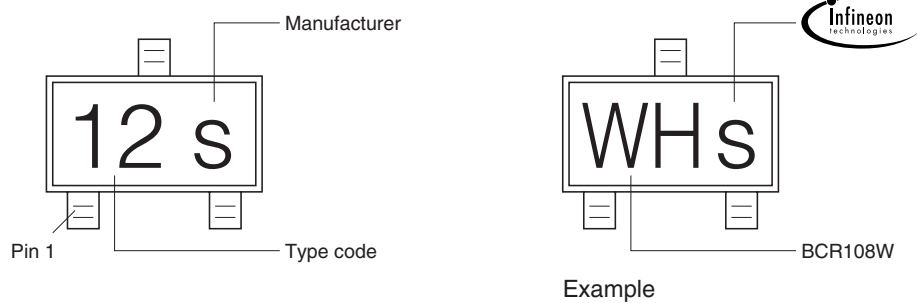
Package Outline



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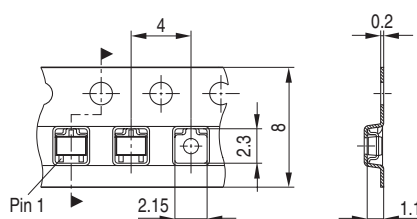


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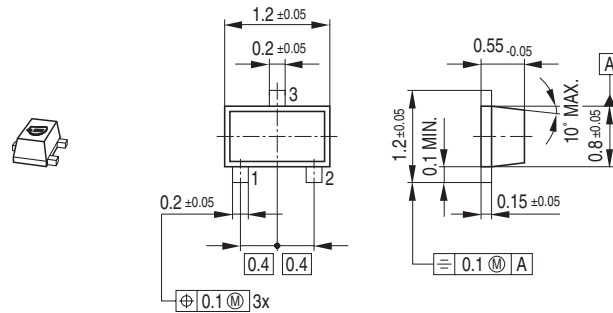


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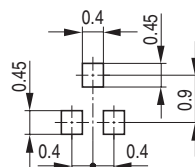
Code E6327: Reel $\varnothing 180$ mm = 3.000 Pieces/Reel
 Code E6433: Reel $\varnothing 330$ mm = 10.000 Pieces/Reel



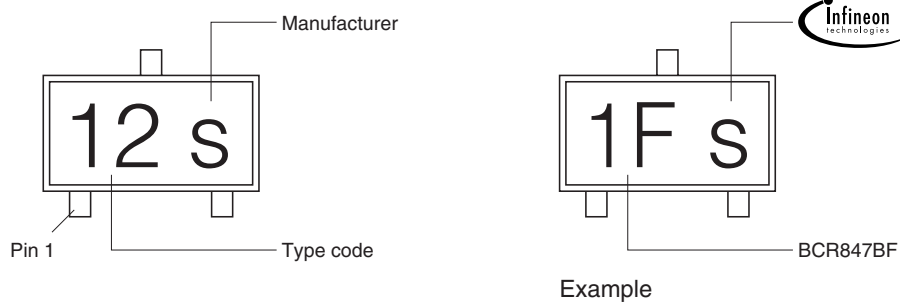
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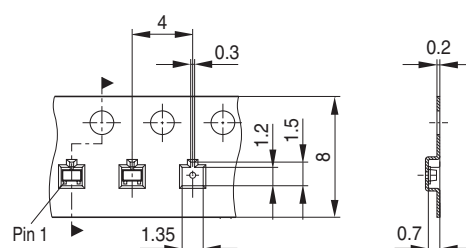


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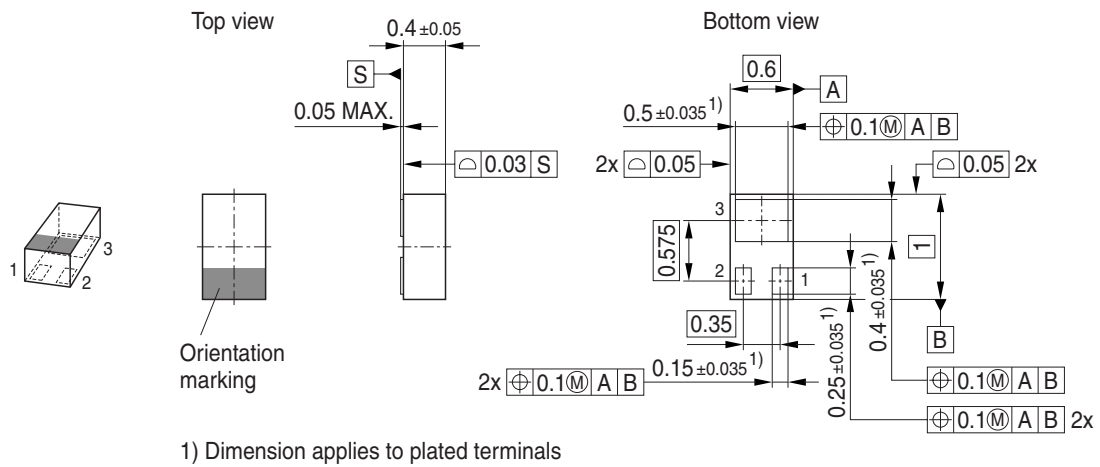


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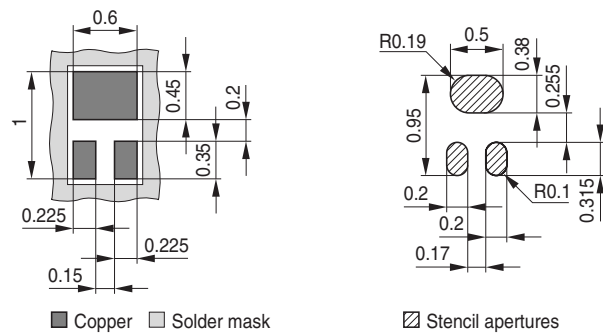
Code E6327: Reel ø180 mm = 3.000 Pieces/Reel
Code E6433: Reel ø330 mm = 10.000 Pieces/Reel



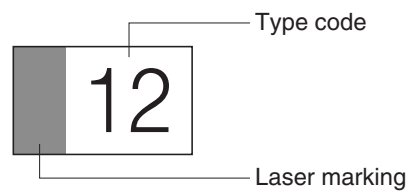
Package Outline



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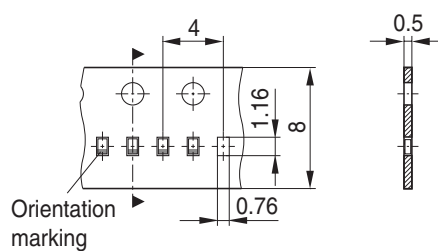


Marking Layout



Packing

Code E6327: Reel ø180 mm = 15.000 Pieces/Reel



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