

阅读申明

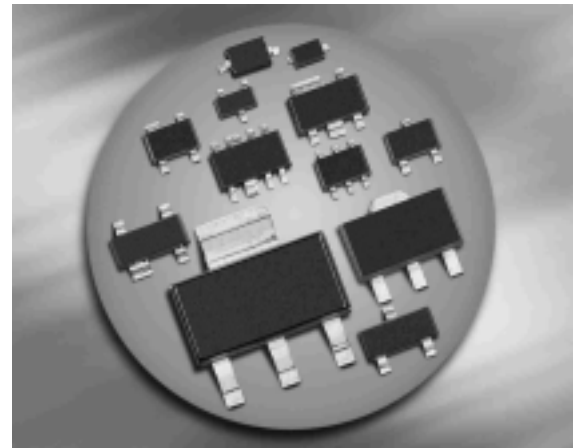
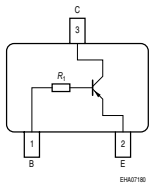
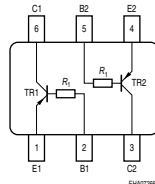
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PNP Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor ($R_1 = 4.7 \text{ k}\Omega$)
- BCR169S / U: Two internally isolated transistors with good matching in one multichip package
- BCR169S / U: For orientation in reel see package information below


**BCR169/F/L3
BCR169T/W**

BCR169S/U


| Type | Marking | Pin Configuration | | | | | | Package |
|----------|---------|-------------------|------|------|------|------|------|----------|
| | | 1=B | 2=E | 3=C | - | - | - | |
| BCR169 | WSs | 1=B | 2=E | 3=C | - | - | - | SOT23 |
| BCR169F | WSs | 1=B | 2=E | 3=C | - | - | - | TSFP-3 |
| BCR169L3 | WS | 1=B | 2=E | 3=C | - | - | - | TSLP-3-4 |
| BCR169S | WSs | 1=E1 | 2=B1 | 3=C2 | 4=E2 | 5=B2 | 6=C1 | SOT363 |
| BCR169T | WS | 1=B | 2=E | 3=C | - | - | - | SC75 |
| BCR169U | WSs | 1=E1 | 2=B1 | 3=C2 | 4=E2 | 5=B2 | 6=C1 | SC74 |
| BCR169W | WSs | 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 | $V_{i(fwd)}$ | 30 | |
| Input reverse voltage | $V_{i(rev)}$ | 5 | |
| Collector current | I_C | 100 | mA |
| Total power dissipation | P_{tot} | | mW |
| BCR169, $T_S \leq 102^\circ\text{C}$ | | | |
| BCR169F, $T_S \leq 128^\circ\text{C}$ | | | |
| BCR169L3, $T_S \leq 135^\circ\text{C}$ | | | |
| BCR169S, $T_S \leq 115^\circ\text{C}$ | | | |
| BCR169T, $T_S \leq 109^\circ\text{C}$ | | | |
| BCR169U, $T_S \leq 118^\circ\text{C}$ | | | |
| BCR169W, $T_S \leq 124^\circ\text{C}$ | | | |
| 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 |
| BCR169 | | | |
| BCR169F | | | |
| BCR169L3 | | | |
| BCR169S | | | |
| BCR169T | | | |
| BCR169U | | | |
| BCR169W | | | |

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

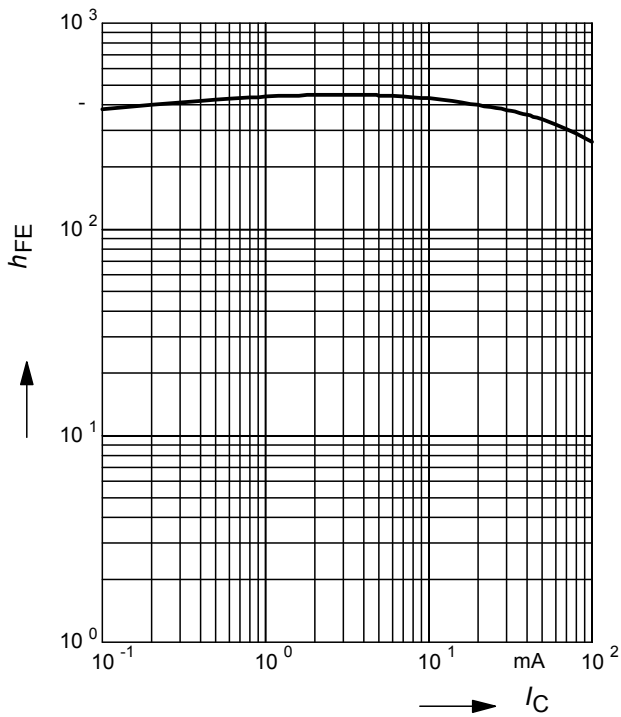
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|---|---------------|--------|------|------|------------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Collector-emitter breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$ | $V_{(BR)CEO}$ | 50 | - | - | V |
| Collector-base breakdown voltage $I_C = 10 \mu\text{A}, I_E = 0$ | $V_{(BR)CBO}$ | 50 | - | - | |
| Collector-base cutoff current $V_{CB} = 40 \text{ V}, I_E = 0$ | I_{CBO} | - | - | 100 | nA |
| Emitter-base cutoff current $V_{EB} = 5 \text{ V}, I_C = 0$ | I_{EBO} | - | - | 100 | nA |
| DC current gain ¹⁾ $I_C = 5 \text{ mA}, V_{CE} = 5 \text{ V}$ | h_{FE} | 120 | - | 630 | - |
| Collector-emitter saturation voltage ¹⁾ $I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$ | V_{CEsat} | - | - | 0.3 | V |
| Input off voltage $I_C = 100 \mu\text{A}, V_{CE} = 5 \text{ V}$ | $V_{i(off)}$ | 0.4 | - | 0.8 | |
| Input on voltage $I_C = 2 \text{ mA}, V_{CE} = 0.3 \text{ V}$ | $V_{i(on)}$ | 0.5 | - | 1.1 | |
| Input resistor | R_1 | 3.2 | 4.7 | 6.2 | k Ω |
| 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: $t < 300 \mu\text{s}$; $D < 2\%$

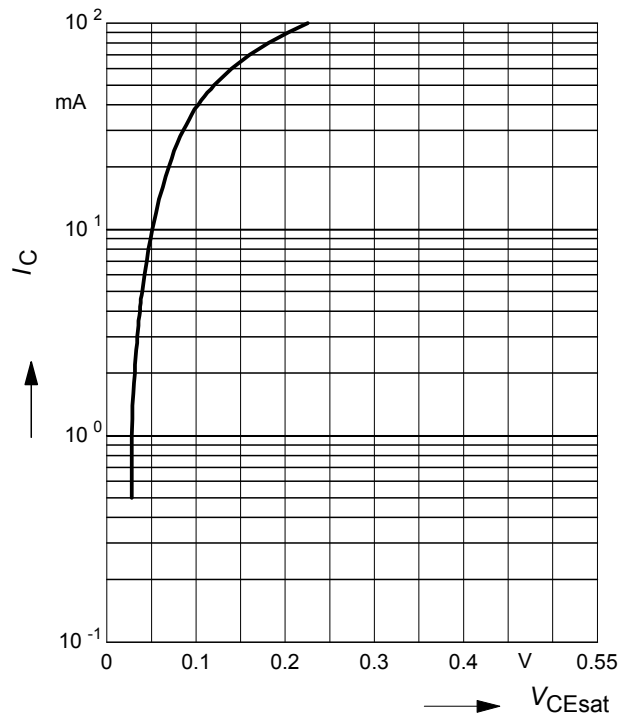
DC current gain $h_{FE} = f(I_C)$

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



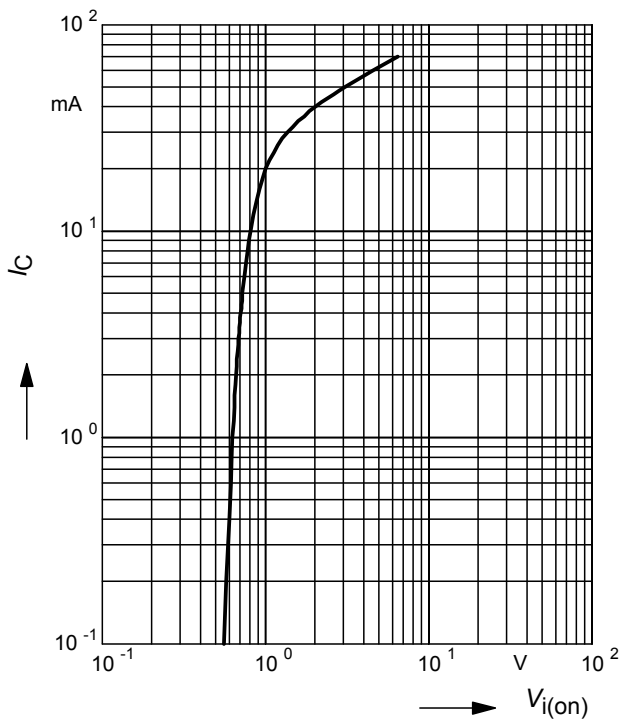
Collector-emitter saturation voltage

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



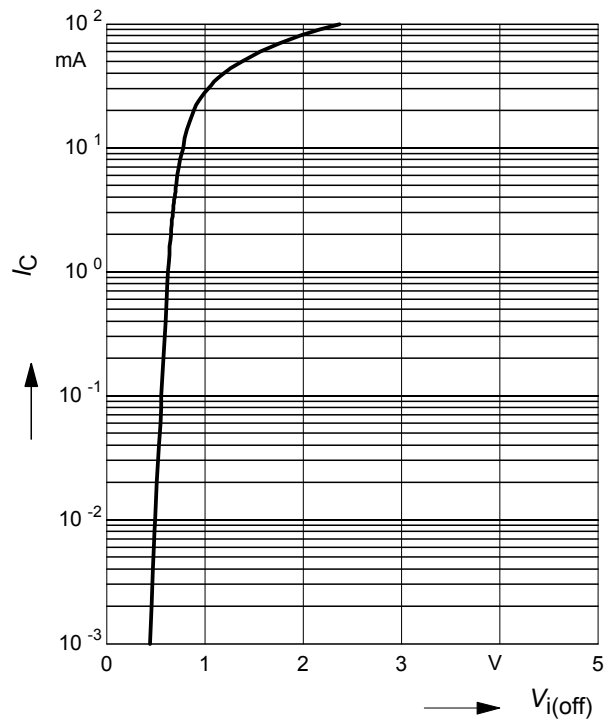
Input on Voltage $V_{i(on)} = f(I_C)$

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



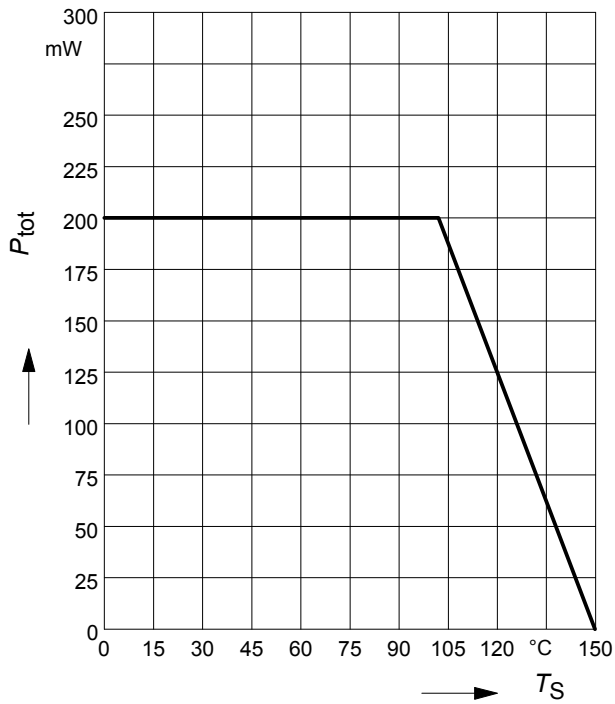
Input off voltage $V_{i(off)} = f(I_C)$

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



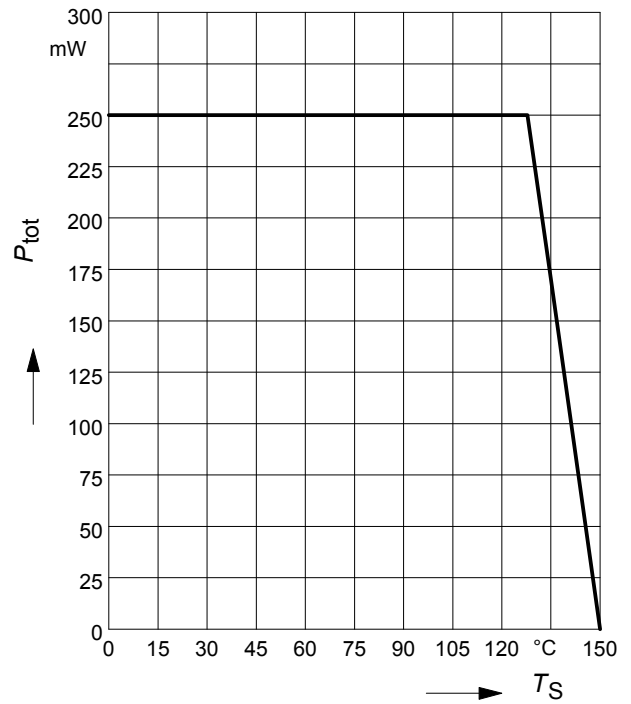
Total power dissipation $P_{tot} = f(T_S)$

BCR169



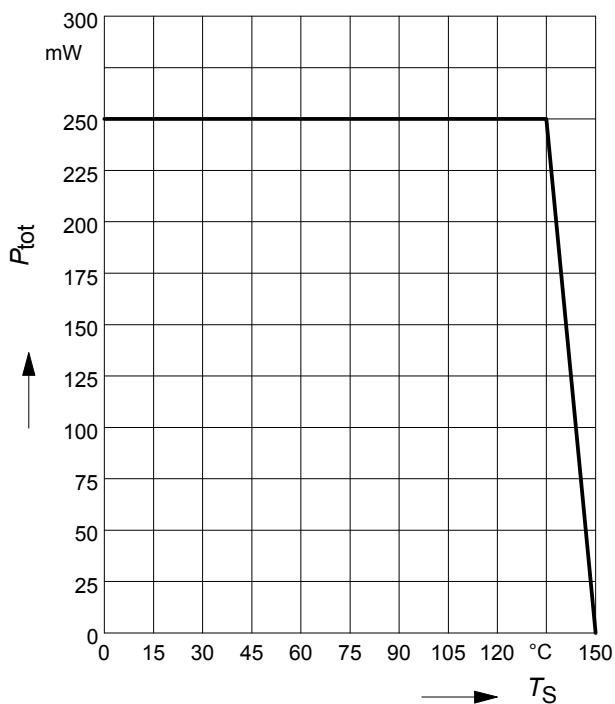
Total power dissipation $P_{tot} = f(T_S)$

BCR169F



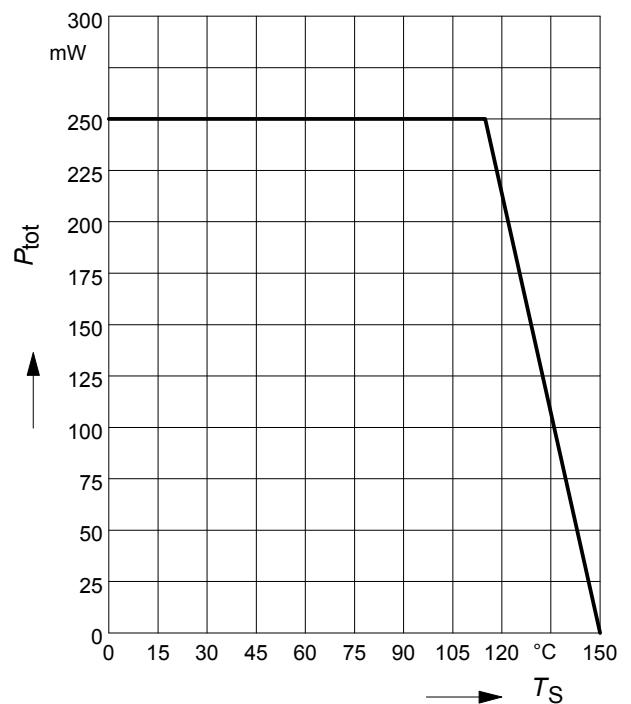
Total power dissipation $P_{tot} = f(T_S)$

BCR169L3



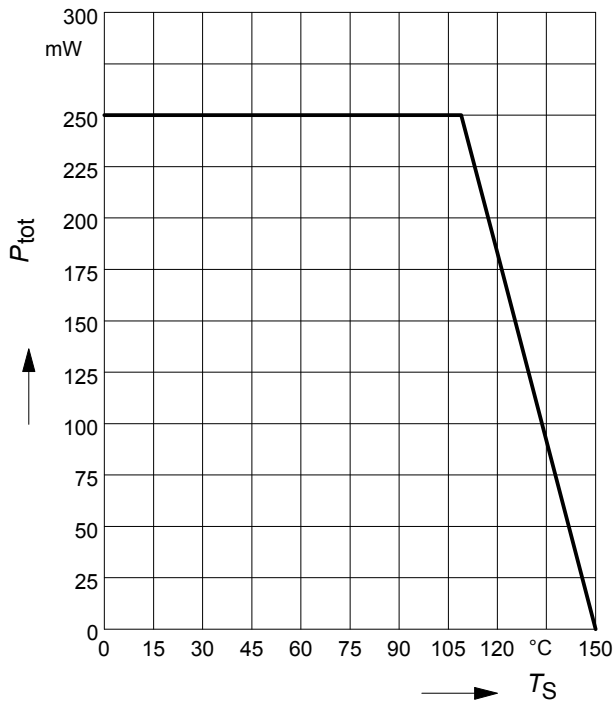
Total power dissipation $P_{tot} = f(T_S)$

BCR169S



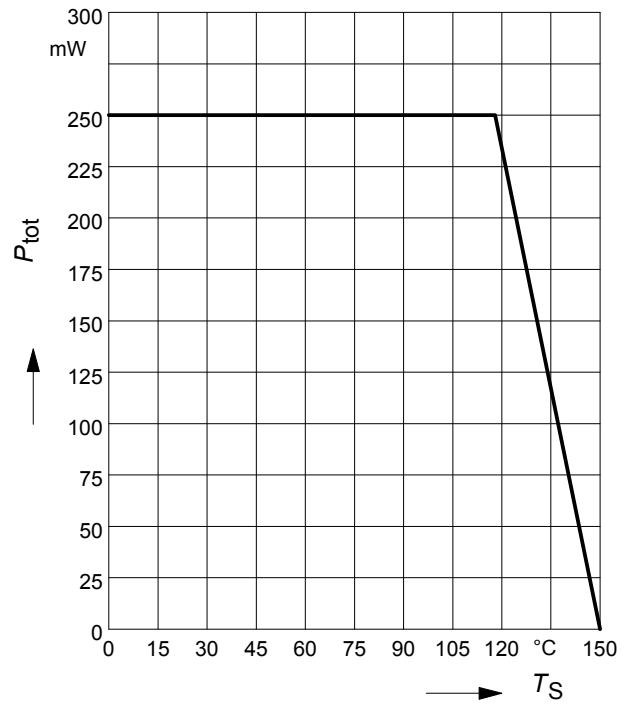
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR169T



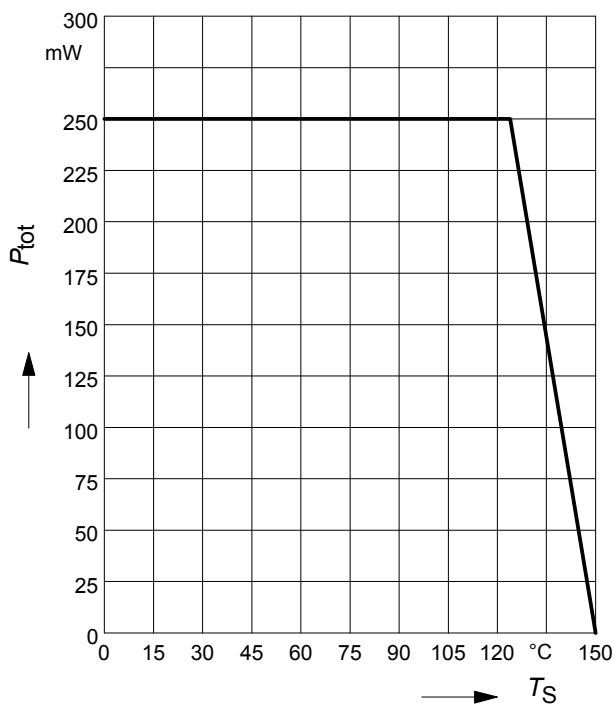
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR169U



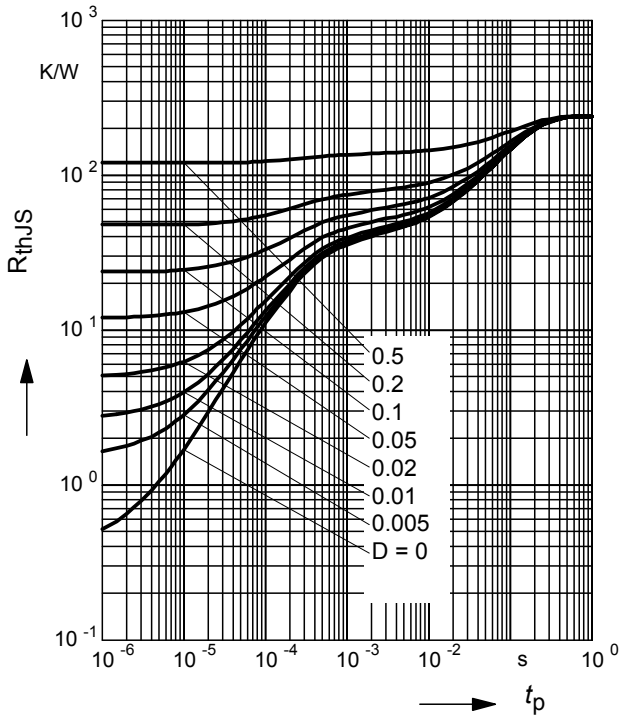
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR169W



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

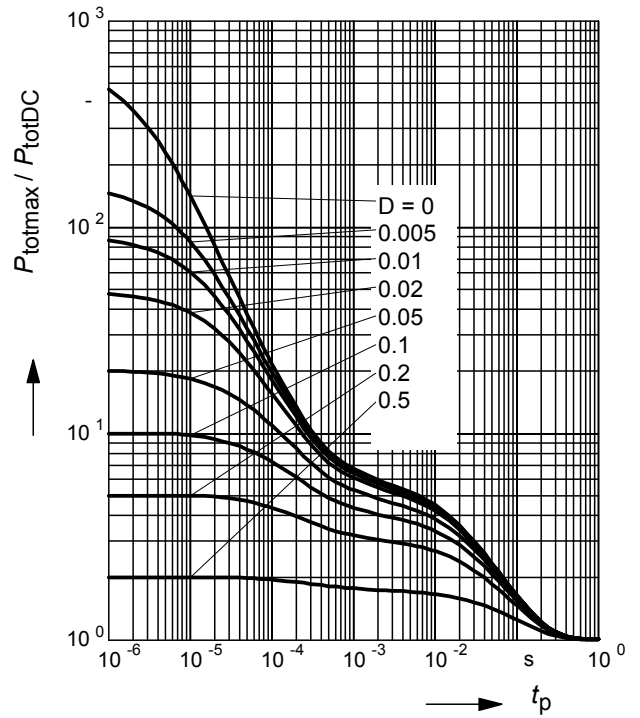
BCR169



Permissible Pulse Load

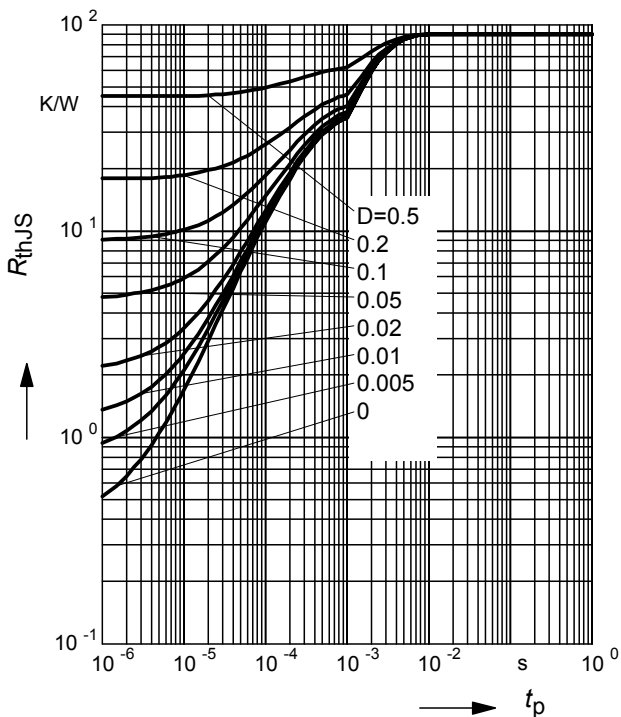
$P_{totmax}/P_{totDC} = f(t_p)$

BCR169



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

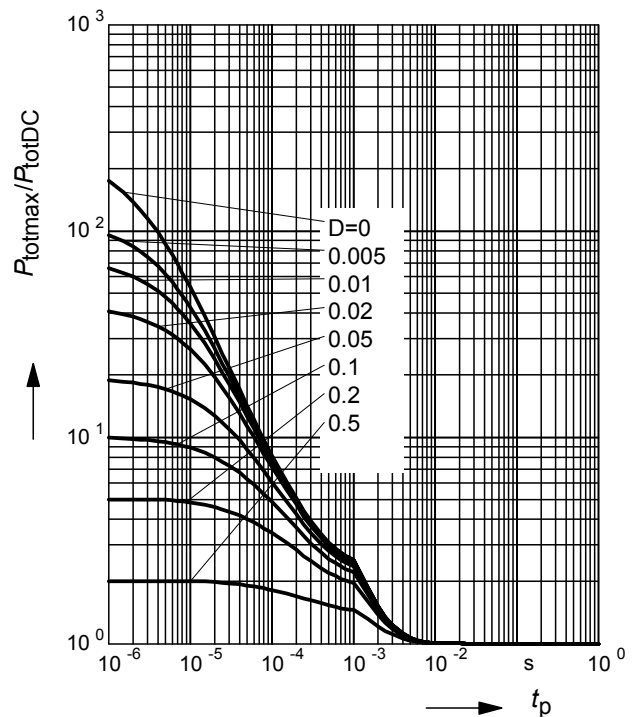
BCR169F



Permissible Pulse Load

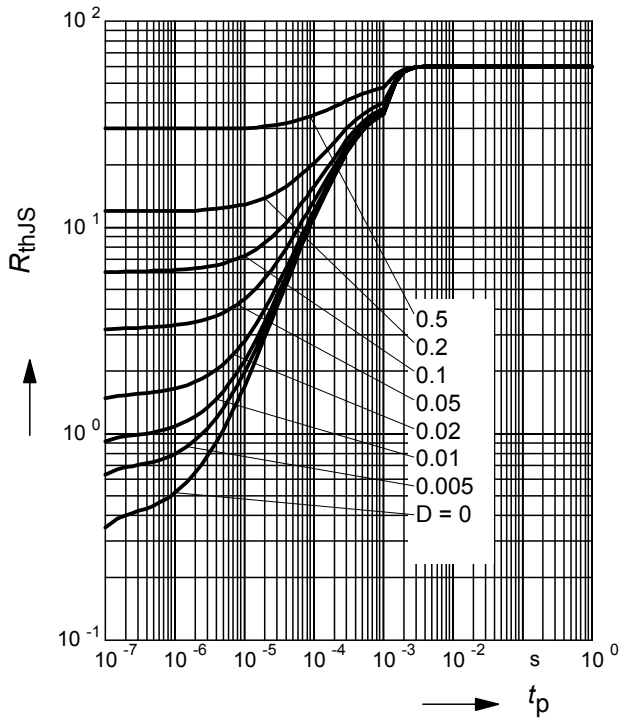
$P_{totmax}/P_{totDC} = f(t_p)$

BCR169F



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

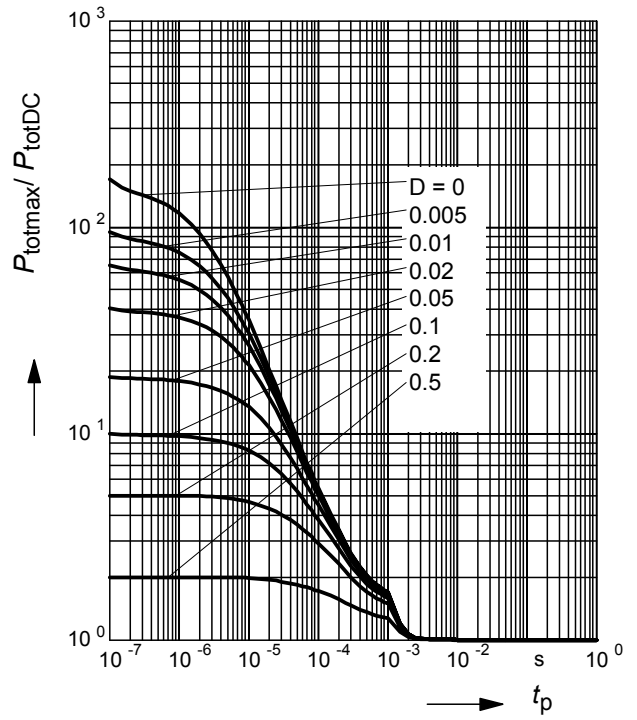
BCR169L3



Permissible Pulse Load

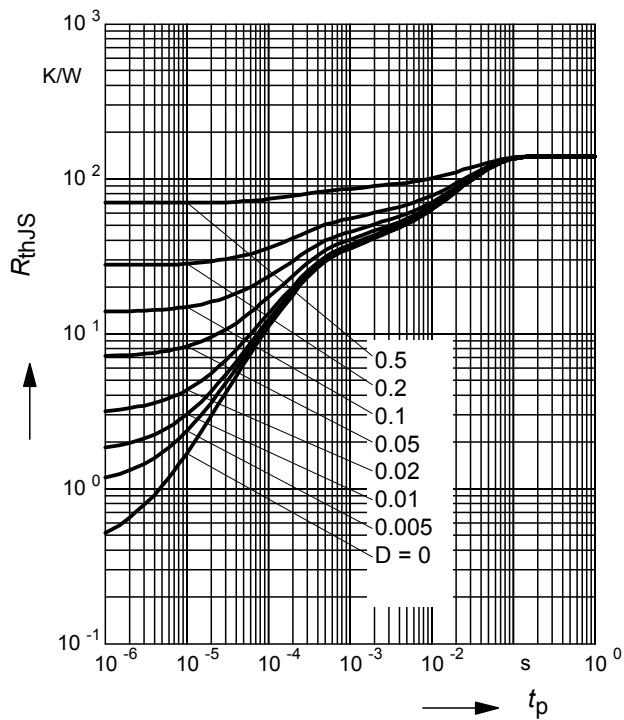
$P_{totmax}/P_{totDC} = f(t_p)$

BCR169L3



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

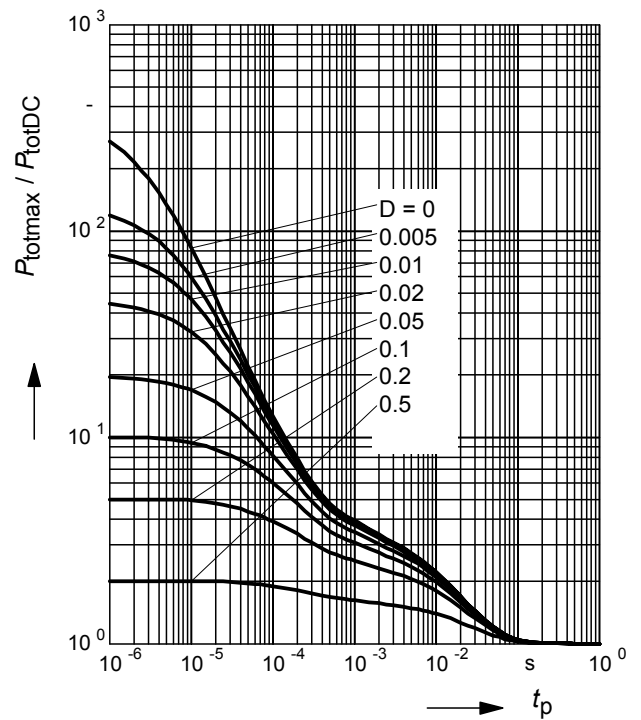
BCR169S



Permissible Pulse Load

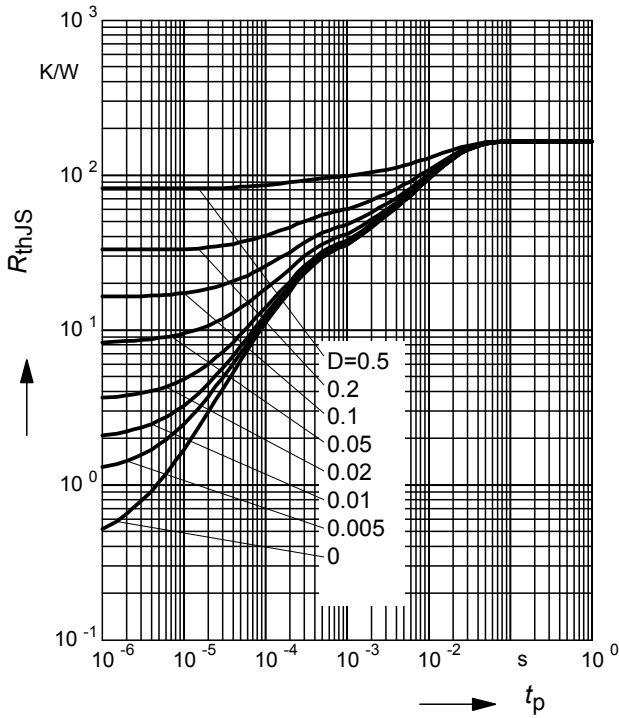
$P_{totmax}/P_{totDC} = f(t_p)$

BCR169S



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

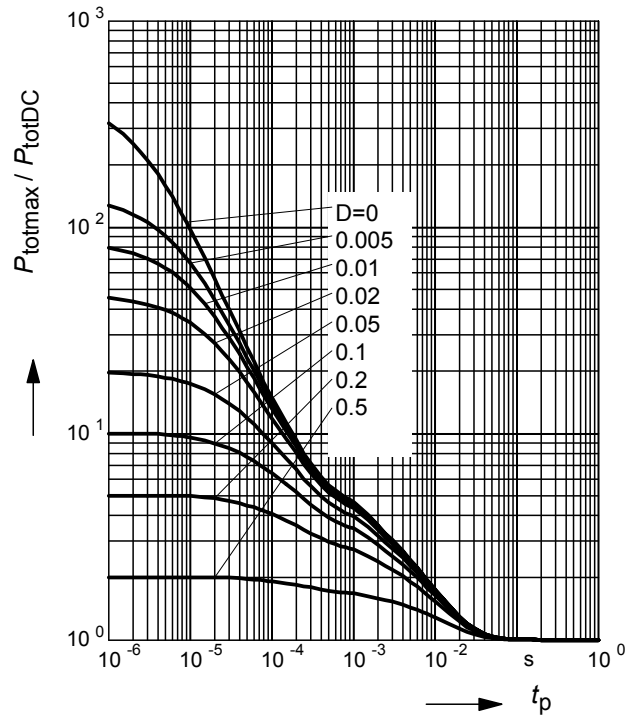
BCR169T



Permissible Pulse Load

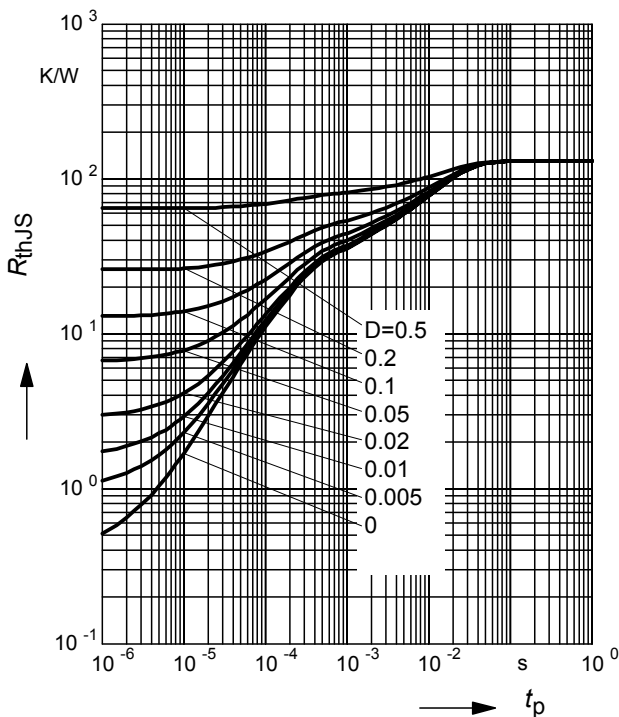
$P_{totmax}/P_{totDC} = f(t_p)$

BCR169T



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

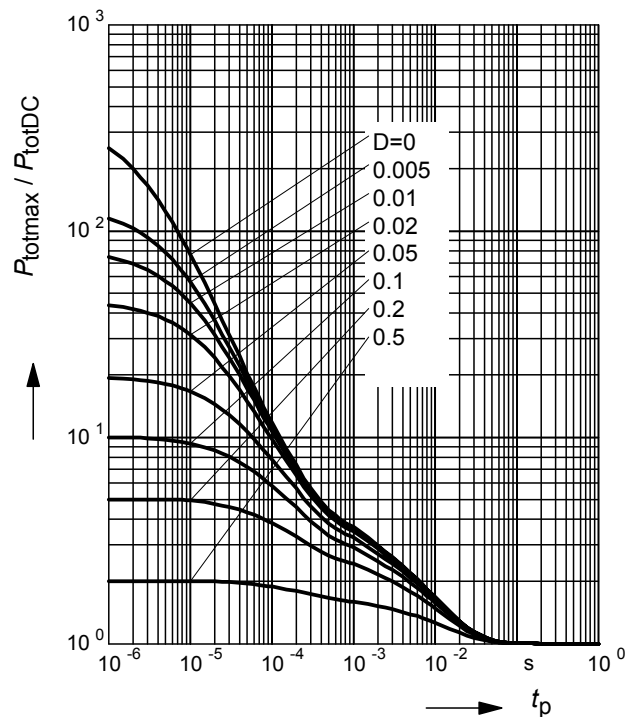
BCR169U



Permissible Pulse Load

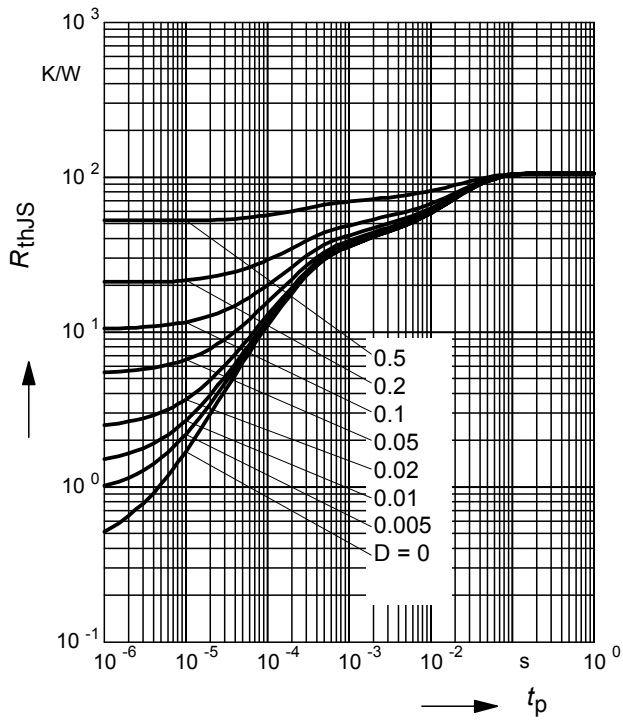
$P_{totmax}/P_{totDC} = f(t_p)$

BCR169U



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

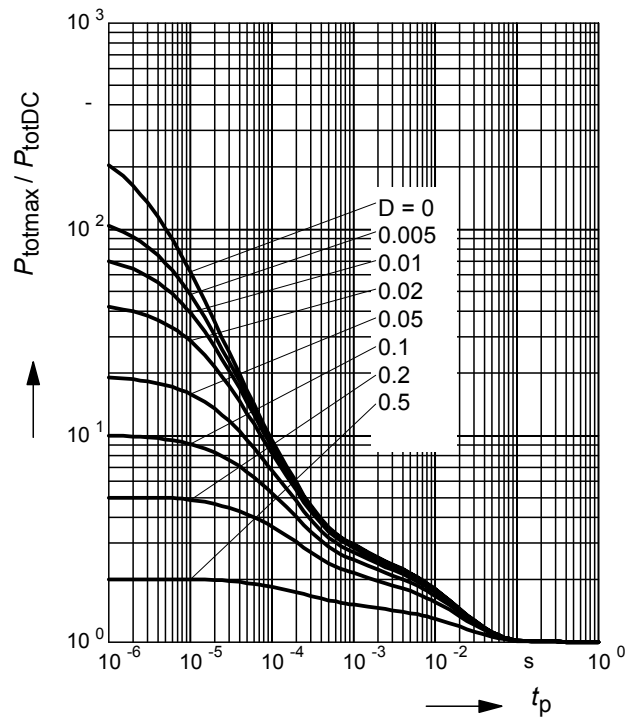
BCR169W



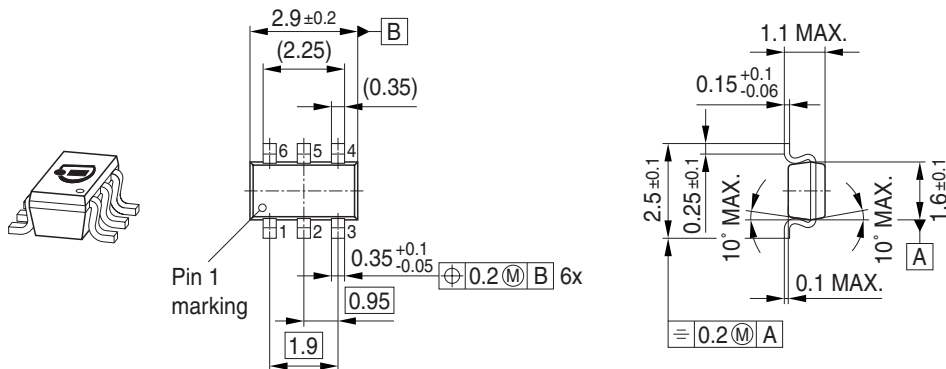
Permissible Pulse Load

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

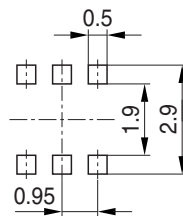
BCR169W



Package Outline

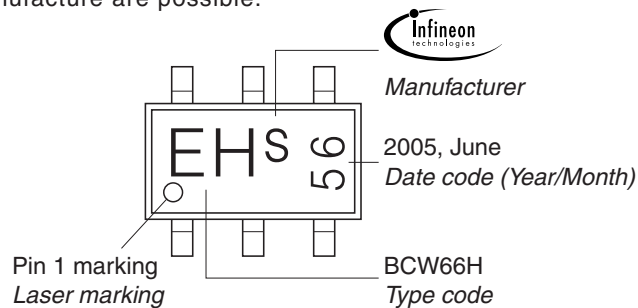


Foot Print



Marking Layout (Example)

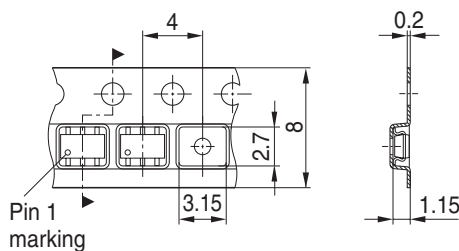
Small variations in positioning of Date code, Type code and Manufacture are possible.



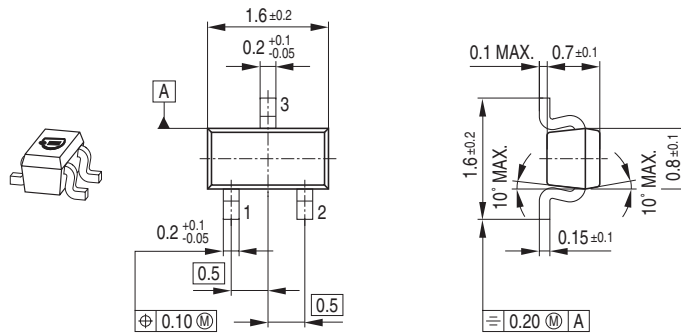
Standard Packing

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

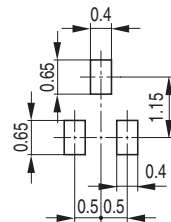
For symmetric types no defined Pin 1 orientation in reel.



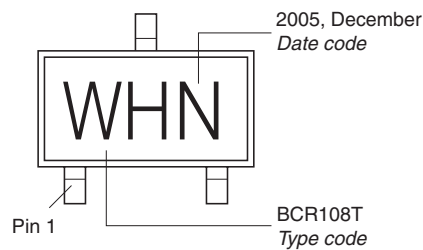
Package Outline



Foot Print

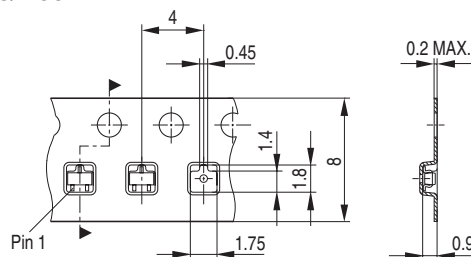


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
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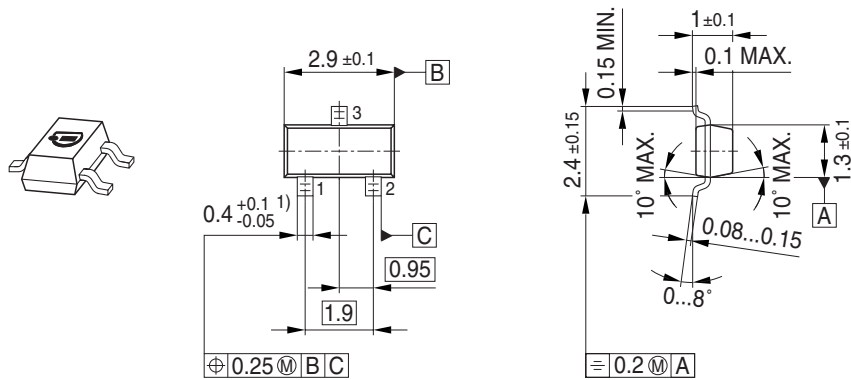


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75¹⁾) CES-Code

| 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 |

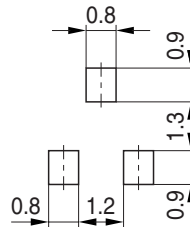
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

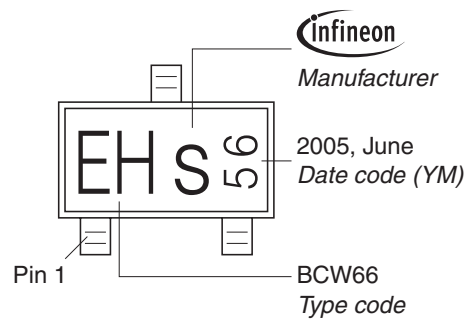


1) Lead width can be 0.6 max. in dambar area

Foot Print

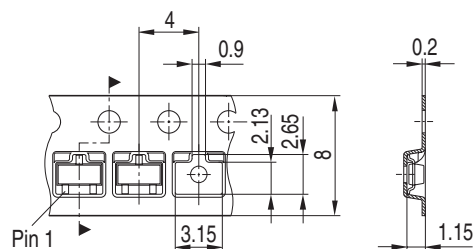


Marking Layout (Example)

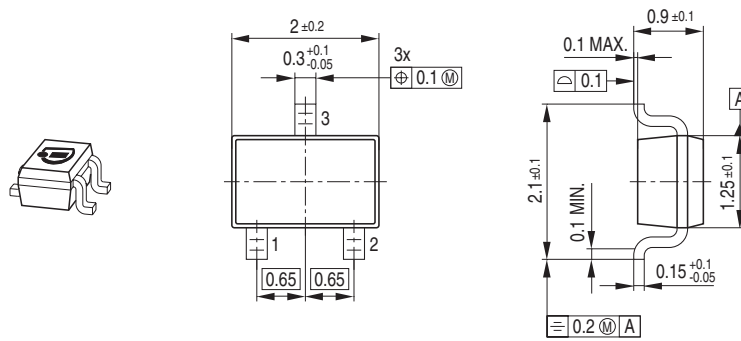


Standard Packing

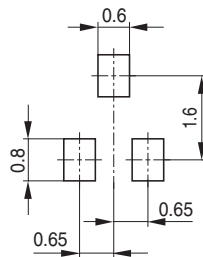
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



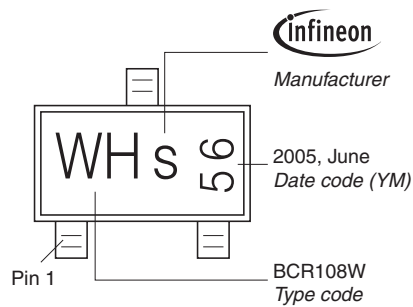
Package Outline



Foot Print

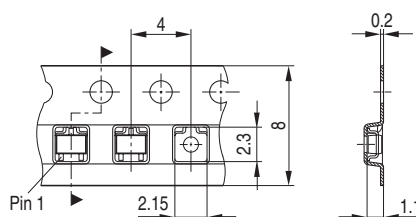


Marking Layout (Example)

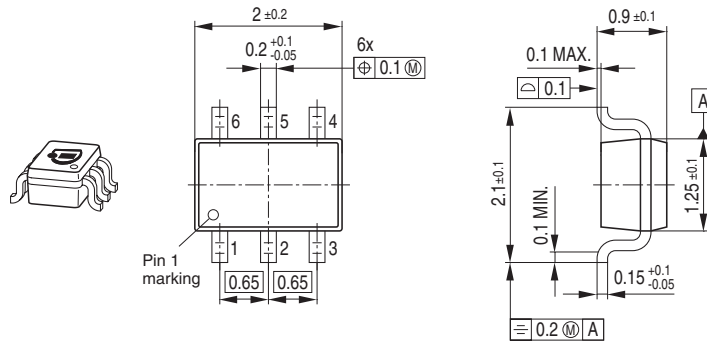


Standard Packing

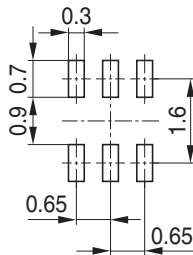
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



Package Outline

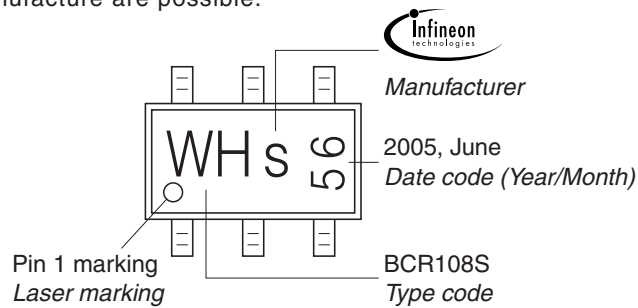


Foot Print



Marking Layout (Example)

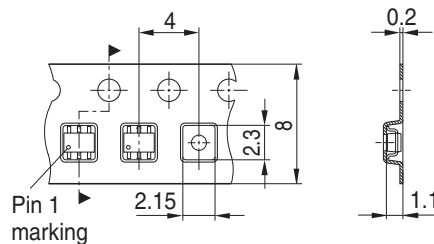
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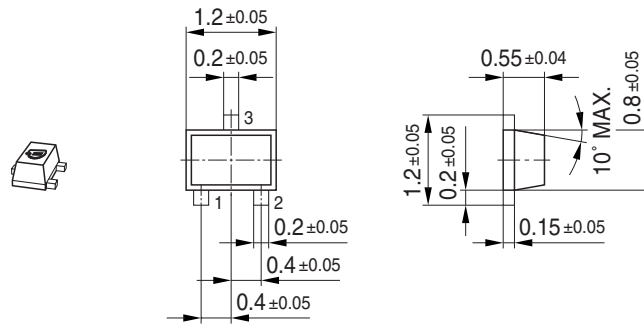
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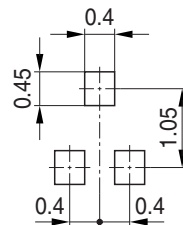
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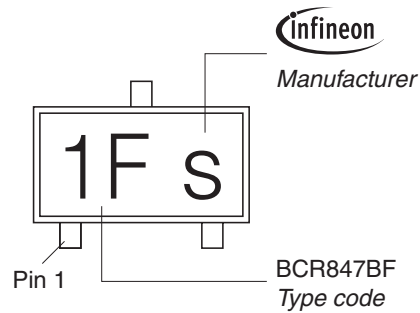
Package Outline



Foot Print

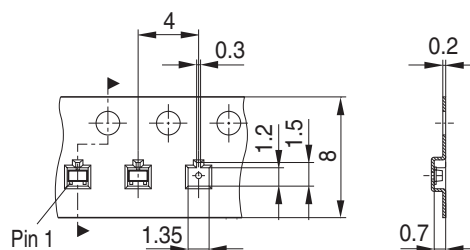


Marking Layout (Example)

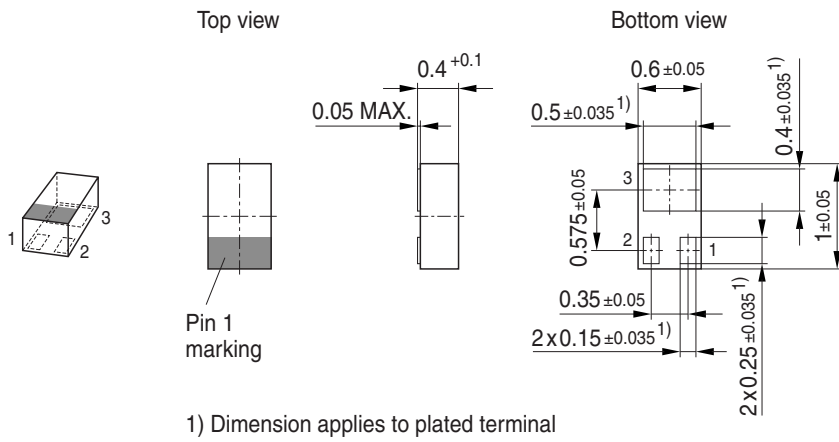


Standard Packing

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

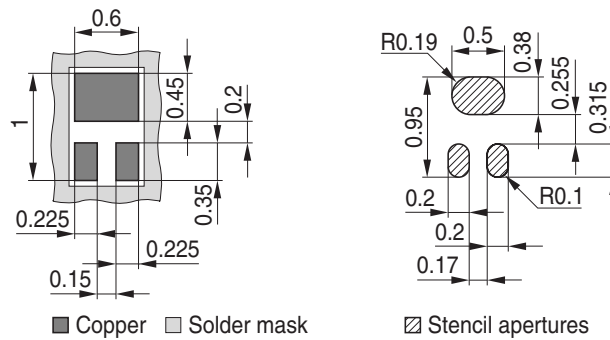


Package Outline

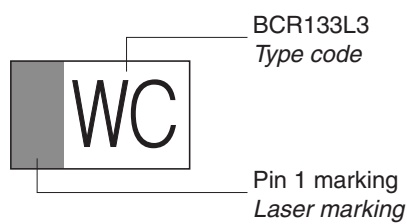


Foot Print

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

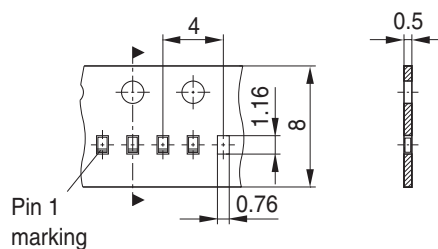


Marking Layout



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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

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