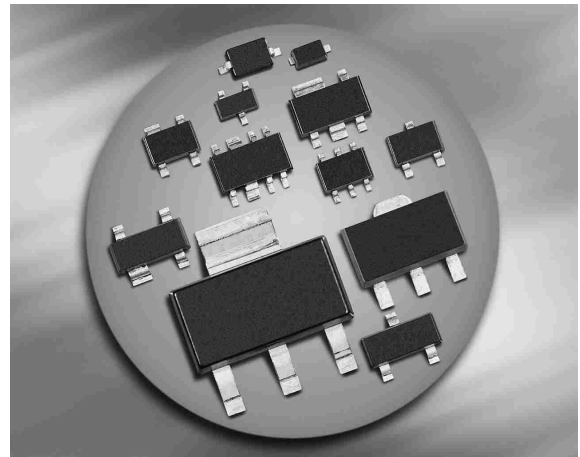
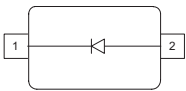


Silicon Schottky Diodes

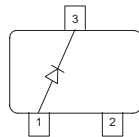
- For low-loss, fast-recovery, meter protection, bias isolation and clamping application
- Guard ring protected
- Low forward voltage
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101¹⁾



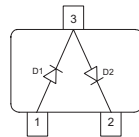
BAT54-02LRH
BAT54-02V
BAT54-03W



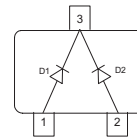
BAT54
BAT54W



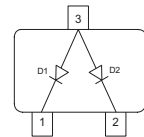
BAT54-04
BAT54-04W



BAT54-05
BAT54-05W



BAT54-06
BAT54-06W



| Type | Package | Configuration | L_S (nH) | Marking |
|--------------|----------|----------------|------------|---------|
| BAT54 | SOT23 | single | 1.8 | T |
| BAT54-02LRH* | TSLP-2-7 | single | 0.4 | 54 |
| BAT54-02V | SC79 | single | 0.6 | b |
| BAT54-03W | SOD323 | single | 1.8 | blue 5 |
| BAT54-04 | SOT23 | series | 1.8 | TS |
| BAT54-04W | SOT323 | series | 1.4 | TS |
| BAT54-05 | SOT23 | common cathode | 1.8 | TC |
| BAT54-05W | SOT323 | common cathode | 1.4 | TC |
| BAT54-06 | SOT23 | common anode | 1.8 | TA |
| BAT54-06W | SOT323 | common anode | 1.4 | TA |
| BAT54W | SOT323 | single | 1.4 | T5 |

¹⁾BAT54-02LRH is not qualified according AEC Q101

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

| Parameter | Symbol | Value | Unit |
|---|-----------|-------------|------|
| Diode reverse voltage | V_R | 30 | V |
| Forward current | I_F | 200 | mA |
| Non-repetitive peak surge forward current ($t \leq 10$ ms) | I_{FSM} | 600 | |
| Repetitive peak forward current ¹⁾ $t_p \leq 1$ s, $\delta = 0.5$ | I_{FRM} | 300 | mA |
| Total power dissipation | P_{tot} | | mW |
| BAT54, $T_S \leq 94$ °C | | 230 | |
| BAT54-02LRH, $T_S \leq 135$ °C | | 230 | |
| BAT54-02V, $T_S \leq 126$ °C | | 230 | |
| BAT54-03W, $T_S \leq 122$ °C | | 230 | |
| BAT54-04, $T_S \leq 71$ °C | | 230 | |
| BAT54-04W, $T_S \leq 117$ °C | | 230 | |
| BAT54-05, $T_S \leq 48$ °C | | 230 | |
| BAT54-05W, $T_S \leq 110$ °C | | 230 | |
| BAT54-06, $T_S \leq 71$ °C | | 230 | |
| BAT54-06W, $T_S \leq 117$ °C | | 230 | |
| BAT54W, $T_S \leq 125$ °C | | 230 | |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -65 ... 150 | |

¹Device mounted on epoxy PCB 40 x 40 x 1.5 mm / 6 cm² Cu

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|------------|-------|------|
| Junction - soldering point ¹⁾ | R_{thJS} | | |
| BAT54 | | ≤ 245 | |
| BAT54-02LRH | | ≤ 65 | |
| BAT54-02V | | ≤ 105 | |
| BAT54-03W | | ≤ 120 | |
| BAT54-04 | | ≤ 345 | |
| BAT54-04W | | ≤ 145 | |
| BAT54-05 | | ≤ 445 | |
| BAT54-05W | | ≤ 175 | |
| BAT54-06 | | ≤ 345 | |
| BAT54-06W | | ≤ 145 | |
| BAT54W | | ≤ 110 | |

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

| Parameter | Symbol | Values | | | Unit |
|---|------------|--------|------|---------------------------------|---------------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Breakdown voltage ²⁾ $I_{(BR)} = 10 \mu\text{A}$ | $V_{(BR)}$ | 30 | - | - | V |
| Reverse current ²⁾ $V_R = 25 \text{ V}$ | I_R | - | - | 2 | μA |
| Forward voltage ²⁾ $I_F = 0.1 \text{ mA}$ $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 30 \text{ mA}$ $I_F = 100 \text{ mA}$ | V_F | - | - | 240 320 400 500 800 | mV |

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

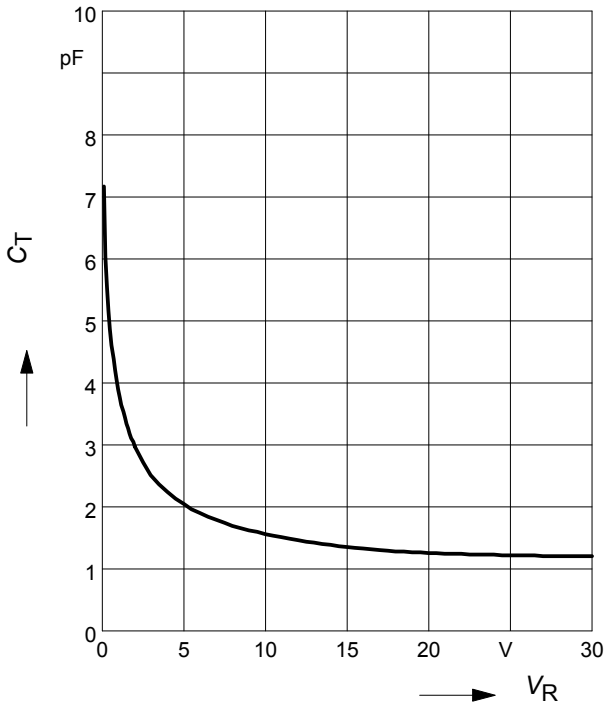
²⁾Pulsed test: $t_p = 300 \mu\text{s}$; $D = 0.01$

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

| Parameter | Symbol | Values | | | Unit |
|--|----------|--------|------|------|------|
| | | min. | typ. | max. | |
| AC Characteristics | | | | | |
| Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ | C_T | - | - | 10 | pF |
| Reverse recovery time $I_F = 10\text{ mA}, I_R = 10\text{ mA}, \text{measured } I_R = 1\text{ mA}, R_L = 100\ \Omega$ | t_{rr} | - | - | 5 | ns |

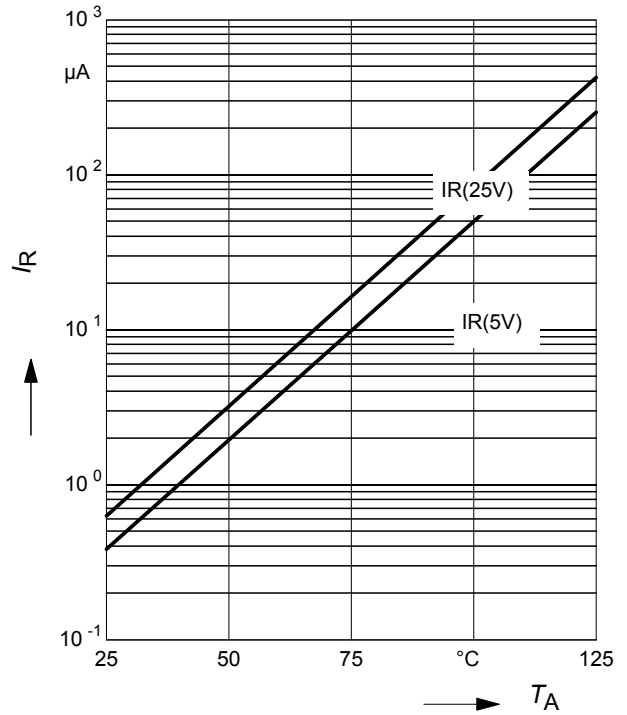
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



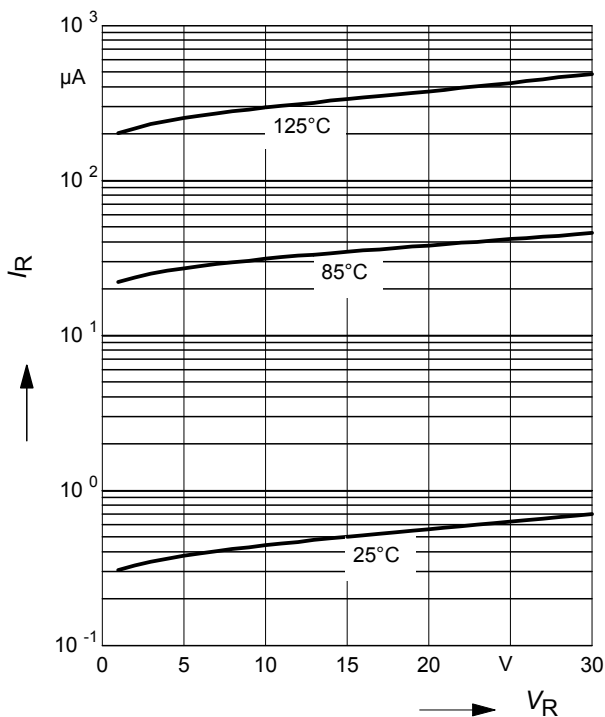
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



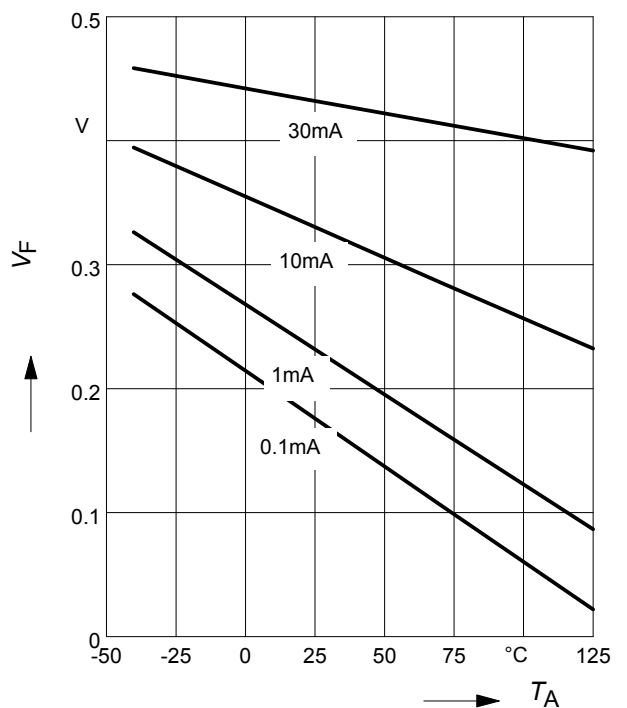
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



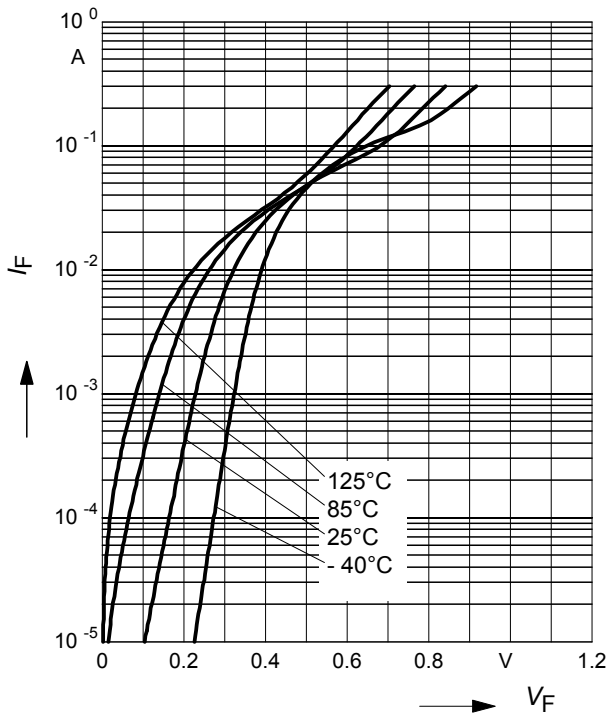
Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



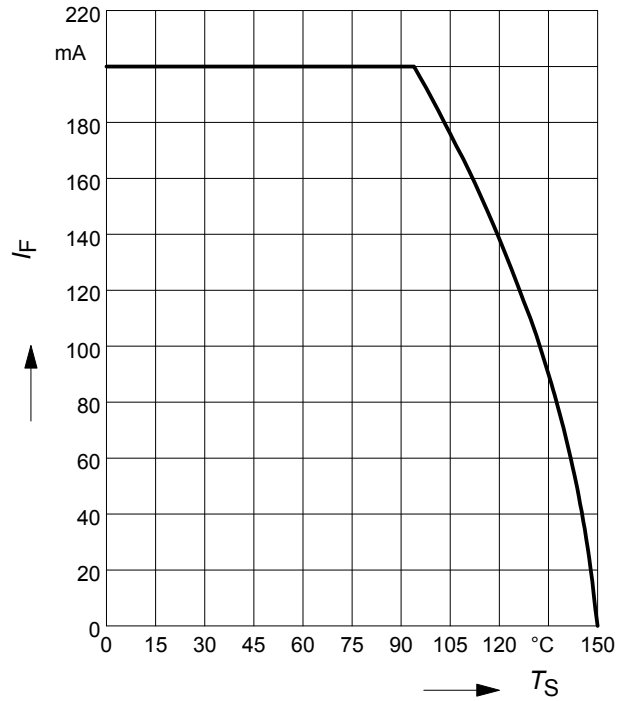
Forward current $I_F = f(V_F)$

$T_A =$ Parameter



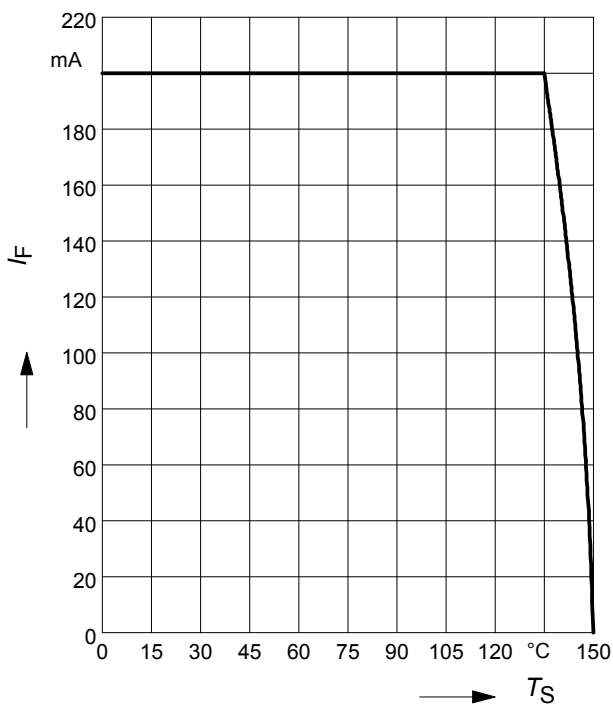
Forward current $I_F = f(T_S)$

BAT54



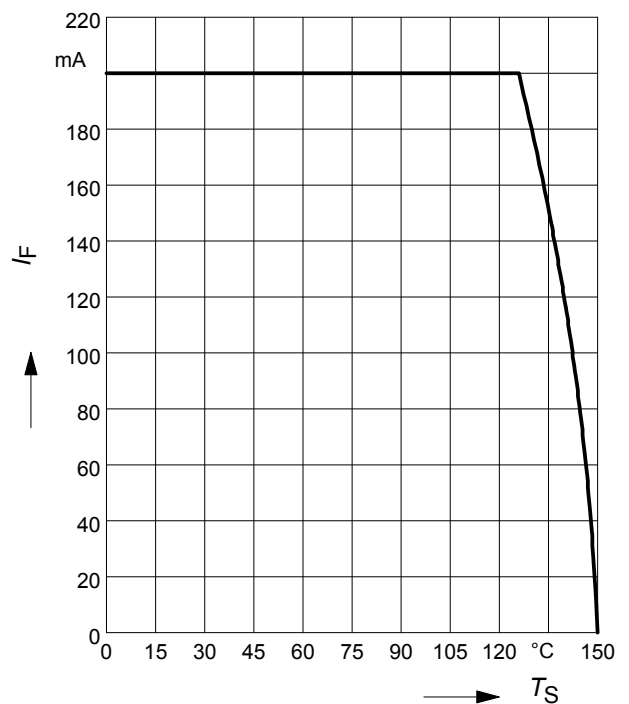
Forward current $I_F = f(T_S)$

BAT54-02LRH



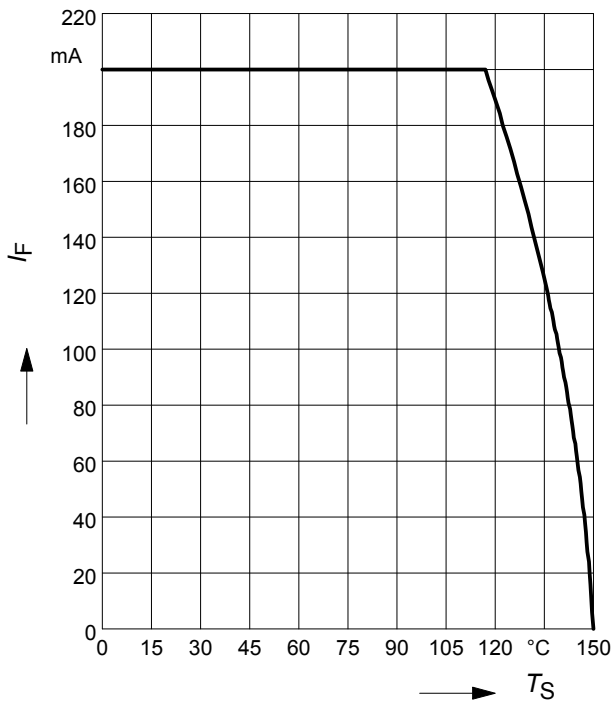
Forward current $I_F = f(T_S)$

BAT54-02V



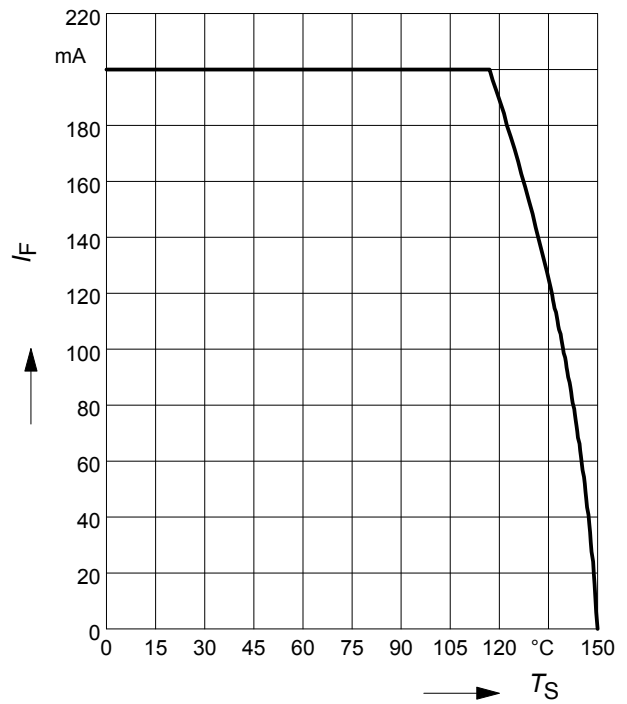
Forward current $I_F = f(T_S)$

BAT54-04



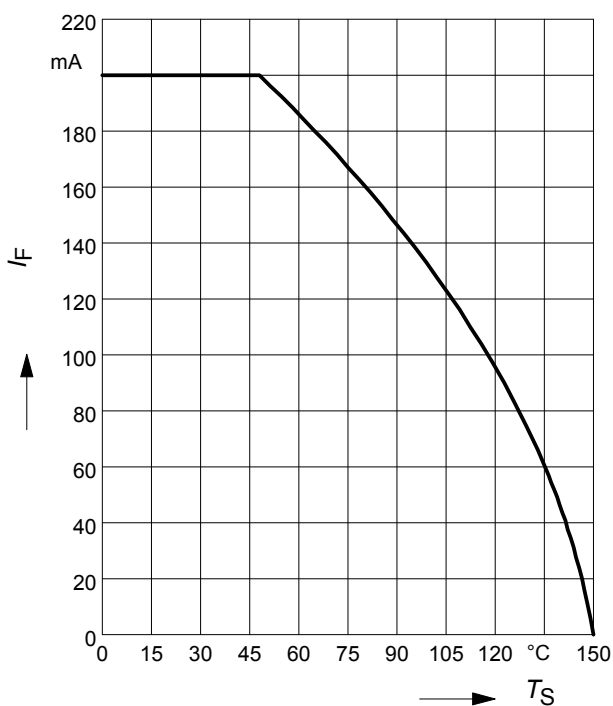
Forward current $I_F = f(T_S)$

BAT54-04W



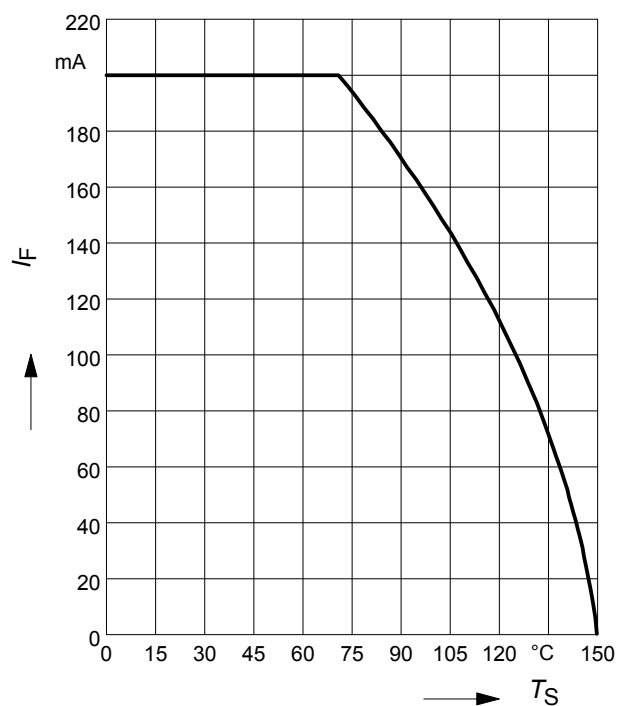
Forward current $I_F = f(T_S)$

BAT54-05



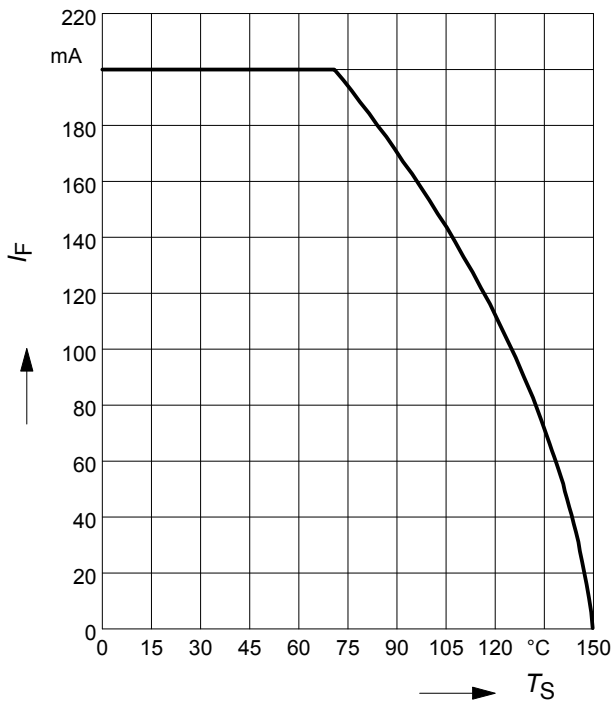
Forward current $I_F = f(T_S)$

BAT54-05W



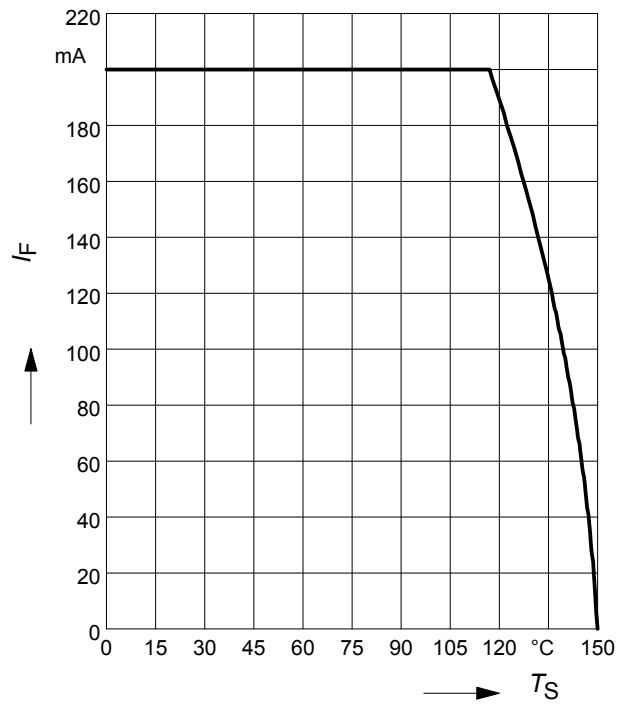
Forward current $I_F = f(T_S)$

BAT54-06



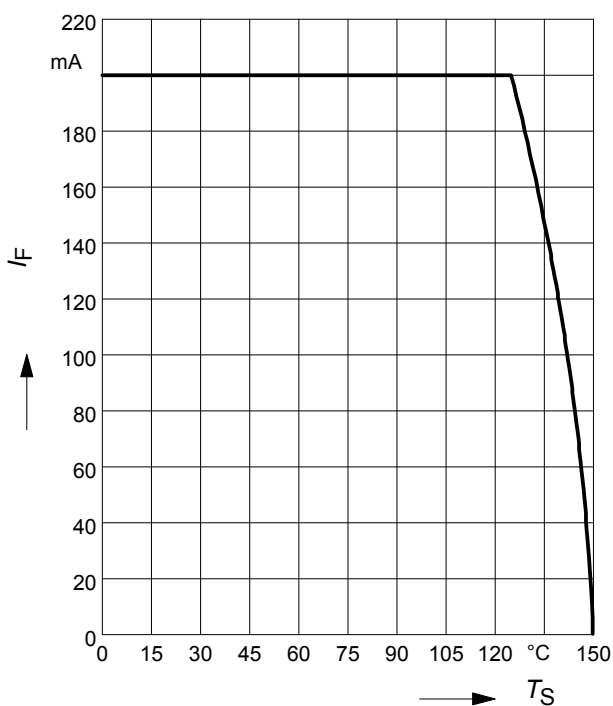
Forward current $I_F = f(T_S)$

BAT54-06W



Forward current $I_F = f(T_S)$

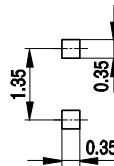
BAT54W



Package Outline



Foot Print

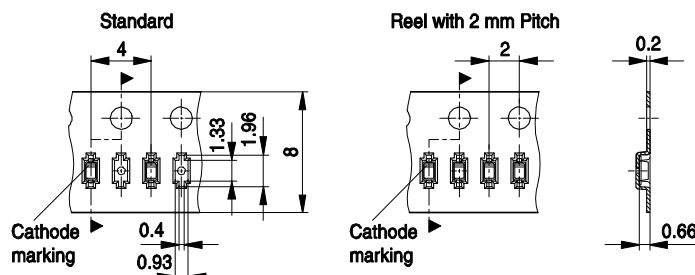


Marking Layout (Example)



Standard Packing

- Reel \varnothing 180 mm = 3.000 Pieces/Reel
- Reel \varnothing 180 mm = 8.000 Pieces/Reel (2 mm Pitch)
- Reel \varnothing 330 mm = 10.000 Pieces/Reel

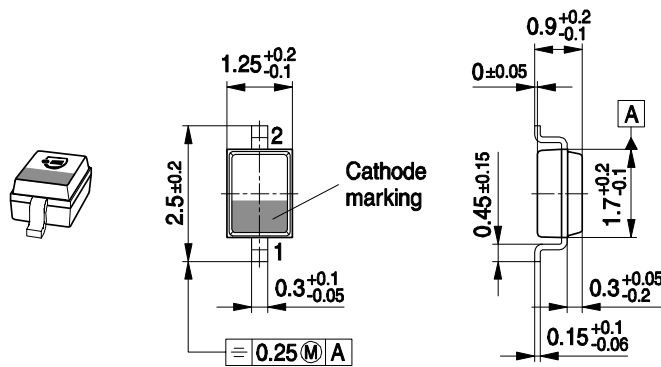


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75¹⁾) CES-Code

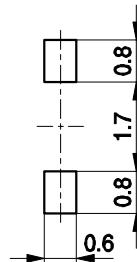
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01 | a | p | A | P | a | p | A | P | a | p | A | P |
| 02 | b | q | B | Q | b | q | B | Q | b | q | B | Q |
| 03 | 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.

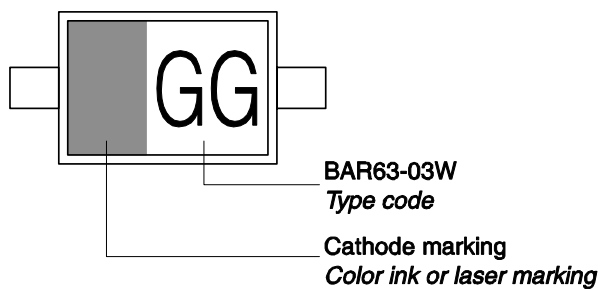
Package Outline



Foot Print

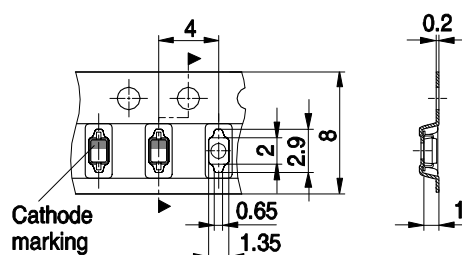


Marking Layout (Example)



Standard Packing

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



Package Outline

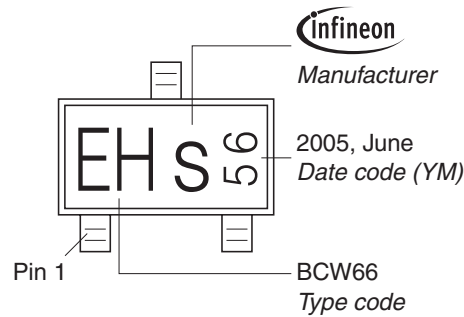


1) Lead width can be 0.6 max. in dambar area

Foot Print

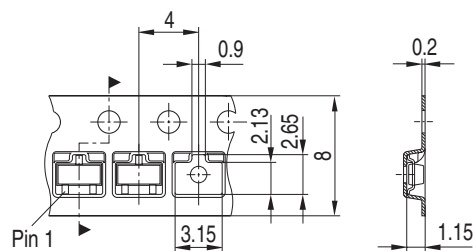


Marking Layout (Example)



Standard Packing

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



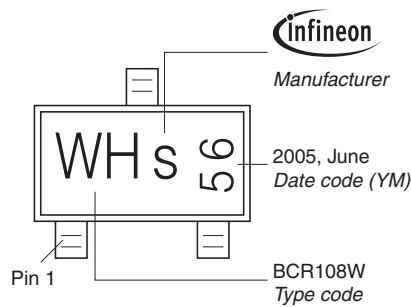
Package Outline



Foot Print



Marking Layout (Example)

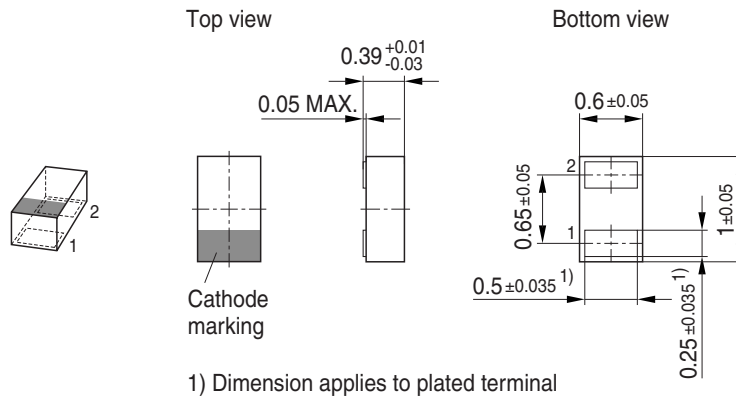


Standard Packing

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

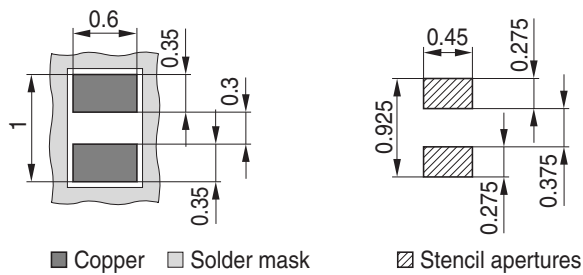


Package Outline

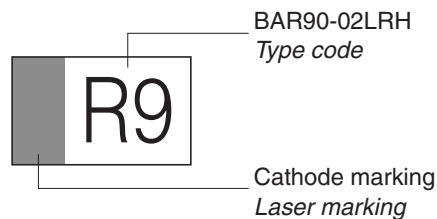


Foot Print

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

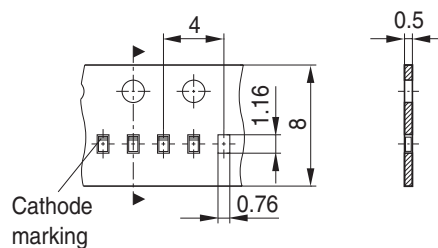


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 15.000 Pieces/Reel
 Reel \varnothing 330 mm = 50.000 Pieces/Reel (optional)



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