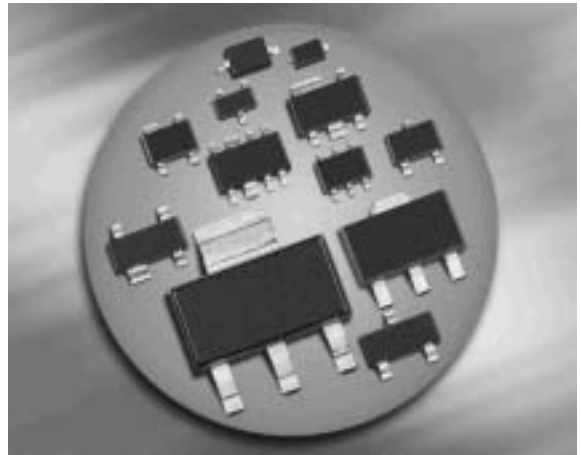
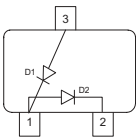


High Voltage Schottky Diode

- Rectifier Schottky diode for telecommunication and industrial applications
- High reverse voltage: 240 V
- For power supply applications
- For clamping and protection in high voltage applications
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



BAT240A



ESD (Electrostatic discharge) sensitive device, observe handling precaution!

| Type | Package | Configuration | Marking |
|---------|---------|---------------|---------|
| BAT240A | SOT23 | half bridge | 4Ms |

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

| Parameter | Symbol | Value | Unit |
|---|-----------|-------------|------|
| Diode reverse voltage ²⁾ | V_R | 240 | V |
| Forward current ²⁾ | I_F | 400 | mA |
| Non-repetitive peak surge forward current ($t \leq 10\text{ms}$) | I_{FSM} | 1 | A |
| Total power dissipation $T_S \leq 28^\circ\text{C}$ | P_{tot} | 400 | mW |
| Junction temperature | T_j | 150 | °C |
| Operating temperature range | T_{op} | -55 ... 125 | |
| Storage temperature | T_{stg} | -55 ... 150 | |

¹Pb-containing package may be available upon special request

²For $T_A > 25^\circ\text{C}$ the derating of V_R and I_F has to be considered. Please refer to the attached curves.

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|------------|------------|------|
| Junction - soldering point ¹⁾ | R_{thJS} | ≤ 305 | K/W |

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

| Parameter | Symbol | Values | | | Unit |
|-----------|--------|--------|------|------|------|
| | | min. | typ. | max. | |

DC Characteristics

| | | | | | |
|--|------------|-------------------------------------|--|-------------------------------------|---------------|
| Breakdown voltage $I_{(BR)} = 500 \mu\text{A}$ | $V_{(BR)}$ | 240 | - | - | V |
| Reverse current $V_R = 100 \text{ V}$ $V_R = 200 \text{ V}$ | I_R | - | 1 5 | 10 - | μA |
| Forward voltage $I_F = 10 \text{ mA}$ $I_F = 20 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 200 \text{ mA}$ $I_F = 400 \text{ mA}$ | V_F | 0.25 0.29 0.35 - - - | 0.325 0.37 0.47 0.58 0.72 0.9 | 0.36 0.41 0.52 - - - | V |

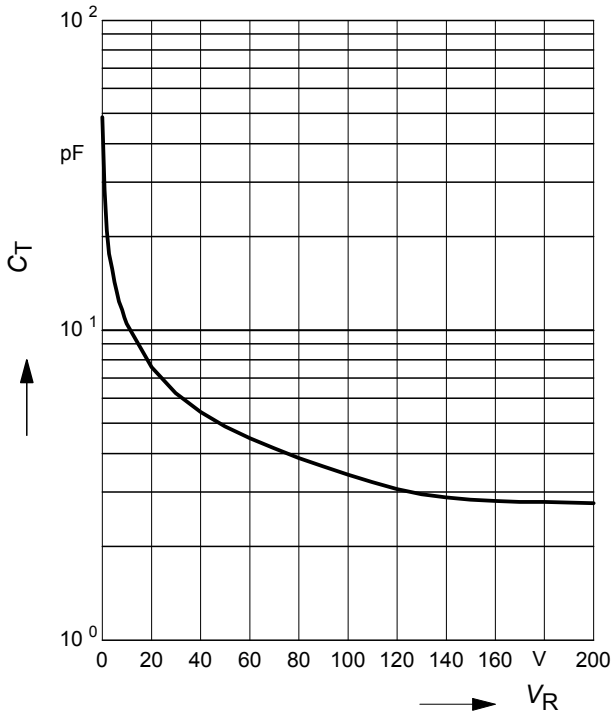
AC Characteristics

| | | | | | |
|--|-------|---|----------|----------|----|
| Diode capacitance $V_R = 10 \text{ V}, f = 1 \text{ MHz}$ $V_R = 5 \text{ V}, f = 1 \text{ MHz}$ | C_T | - | 11 15 | 15 20 | pF |
|--|-------|---|----------|----------|----|

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

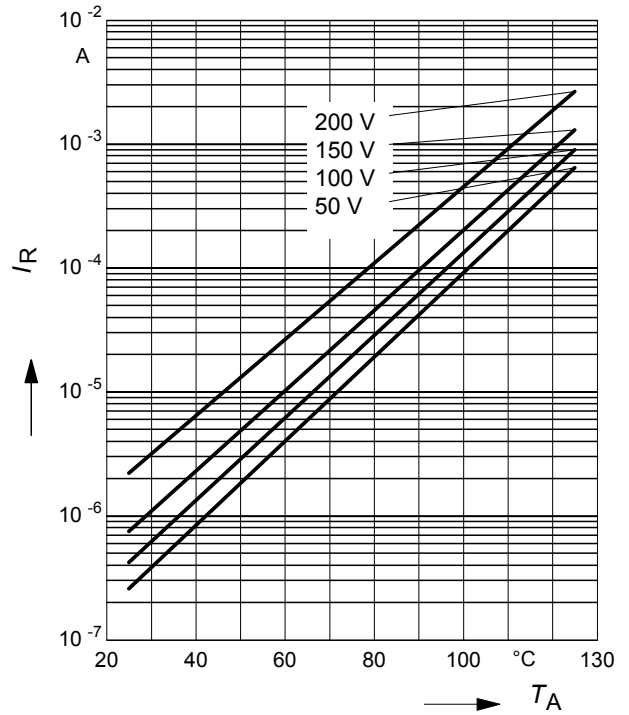
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



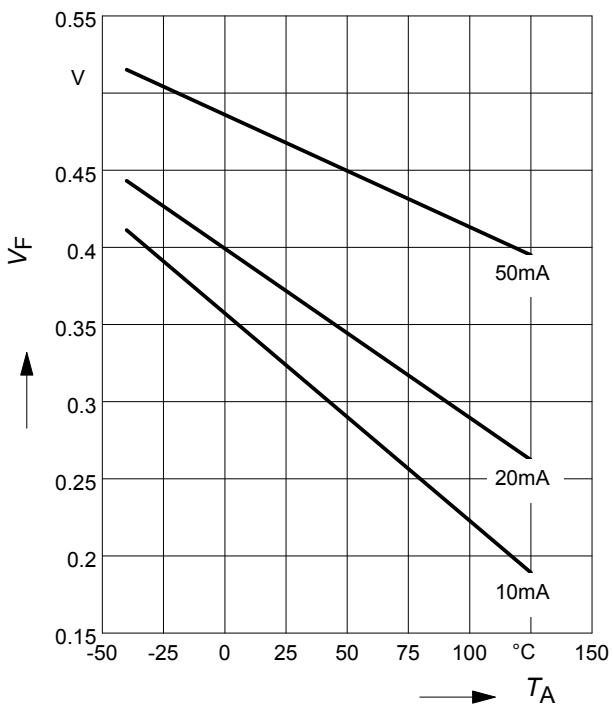
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



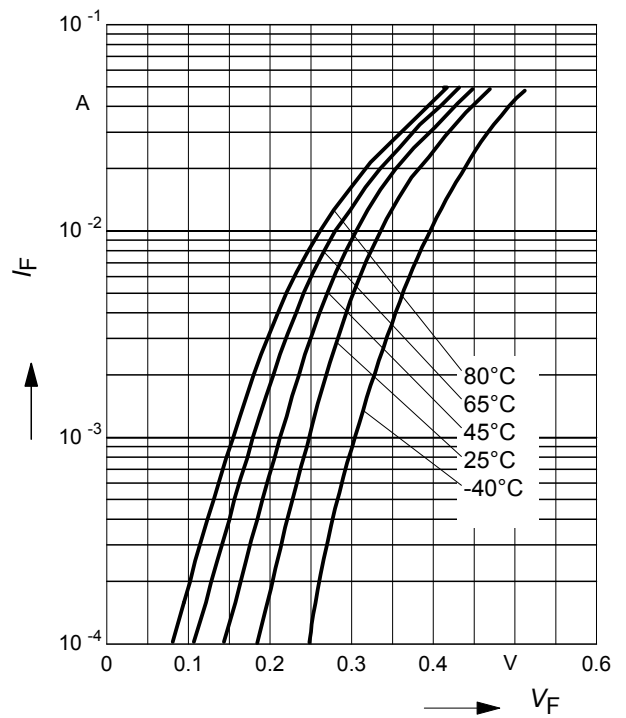
Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



Forward current $I_F = f(V_F)$

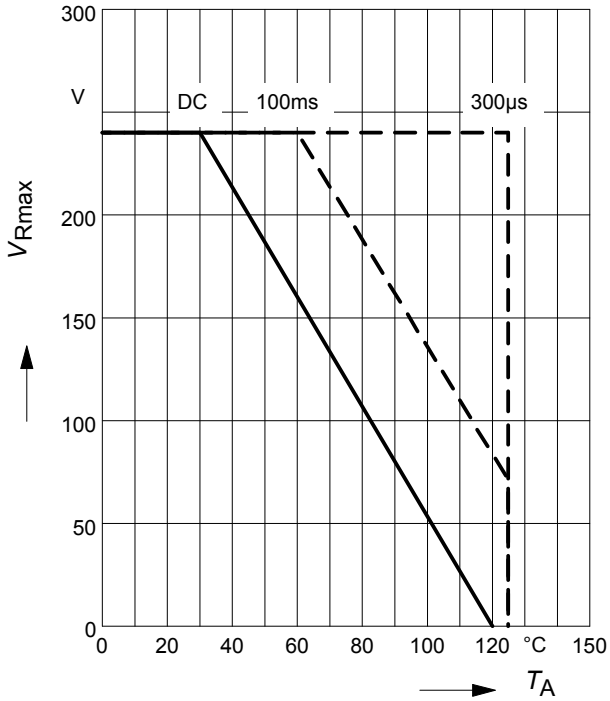
$T_A = \text{Parameter}$



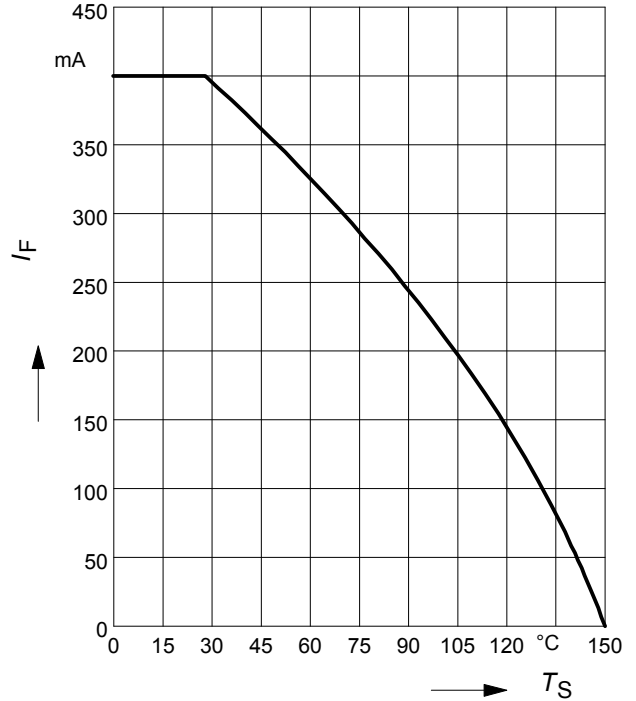
Permissible Reverse voltage $V_R = f(T_A)$

t_p = Parameter, Duty cycle < 0.01

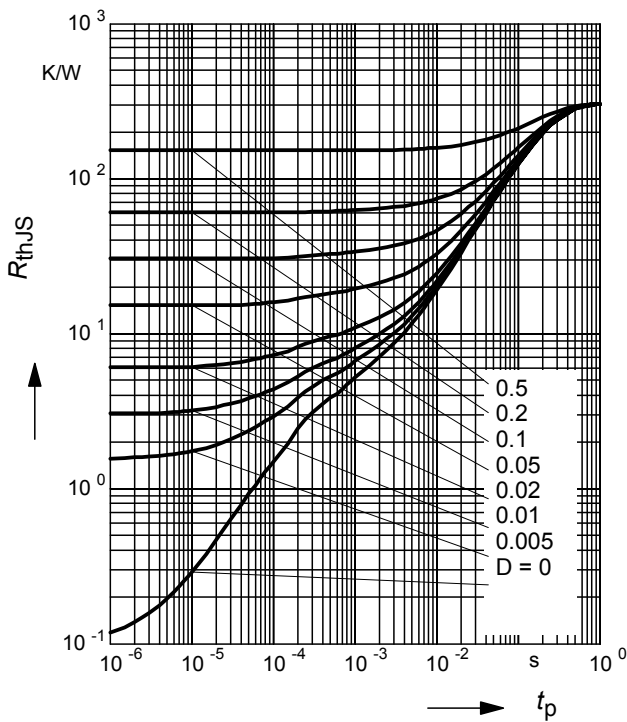
Device mounted on PCB with $R_{th} = 160 \text{ k/W}$



Forward current $I_F = f(T_S)$

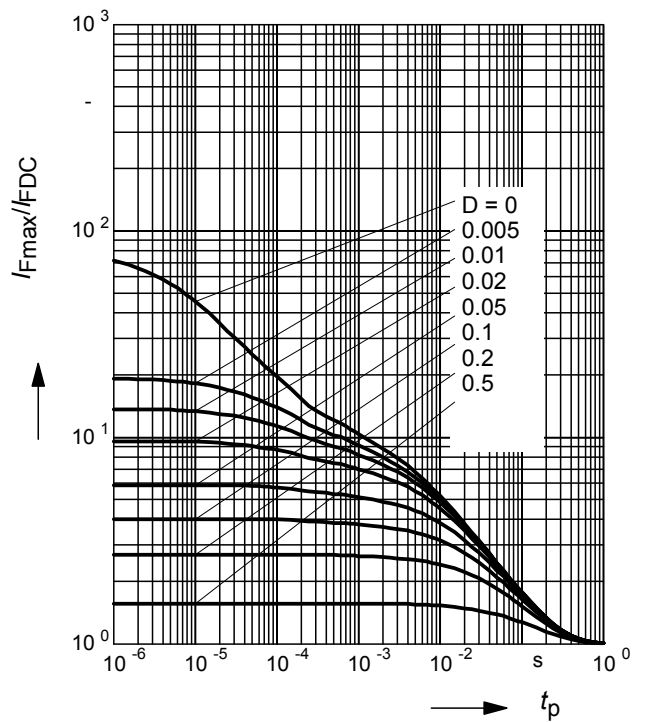


Permissible Puls Load $R_{thJS} = f(t_p)$



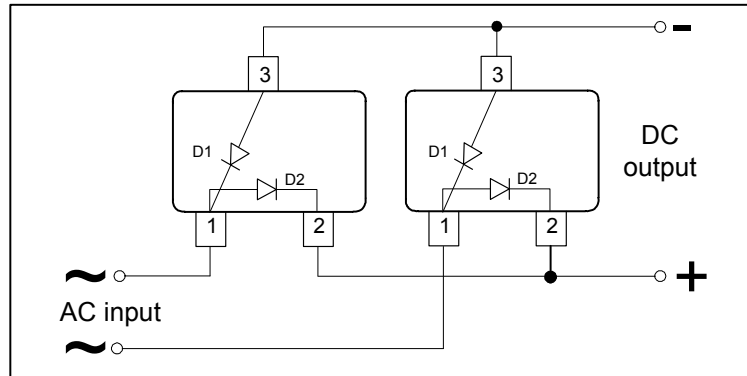
Permissible Pulse Load

$I_{Fmax} / I_{FDC} = f(t_p)$

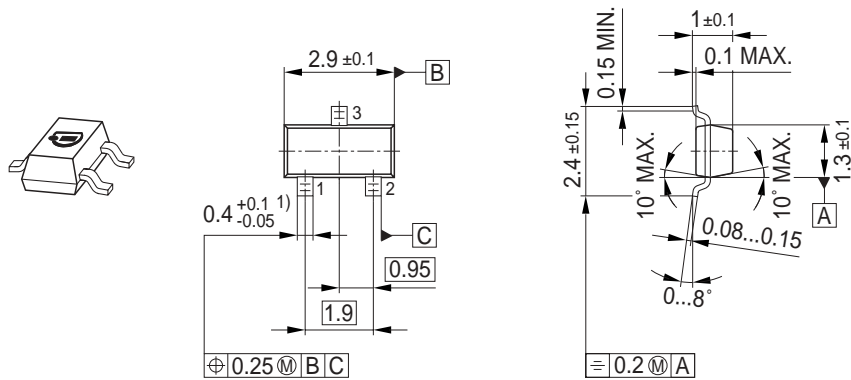


Application example BAT240A

Energy efficient bridge rectification for 110 V / 60 Hz power lines

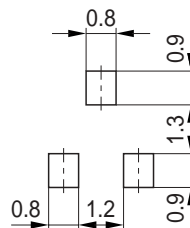


Package Outline

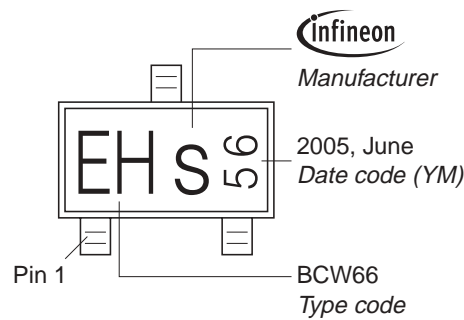


1) Lead width can be 0.6 max. in dambar area

Foot Print

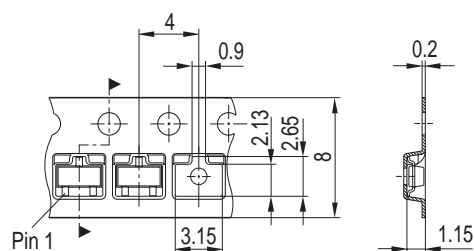


Marking Layout (Example)



Standard Packing

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



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