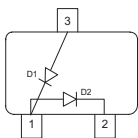


High Voltage Schottky Diode

- 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) package ¹⁾
- 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	$^\circ\text{C}$
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

¹⁾Pb-containing package may be available upon special request

²⁾For $T_A > 25^\circ\text{C}$ 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

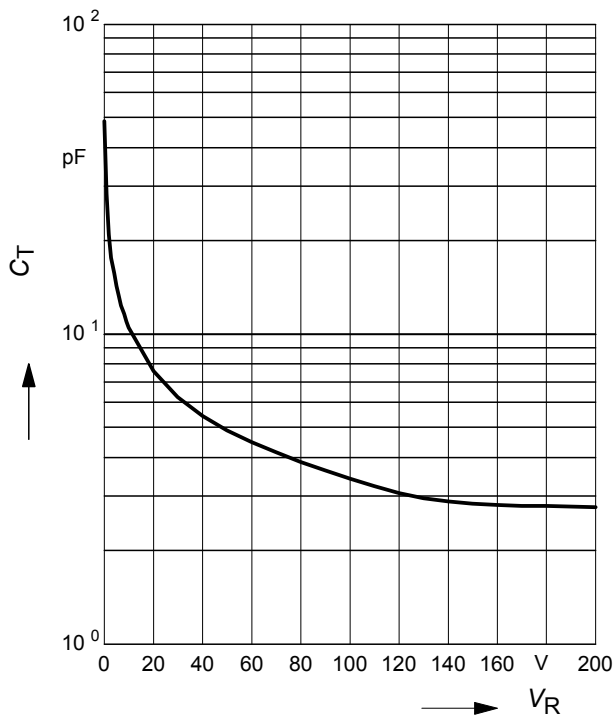
AC Characteristics

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

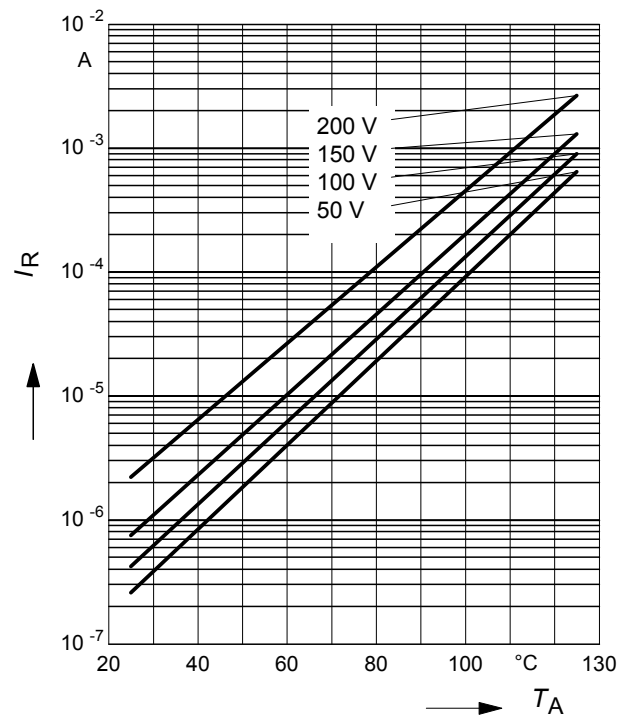
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



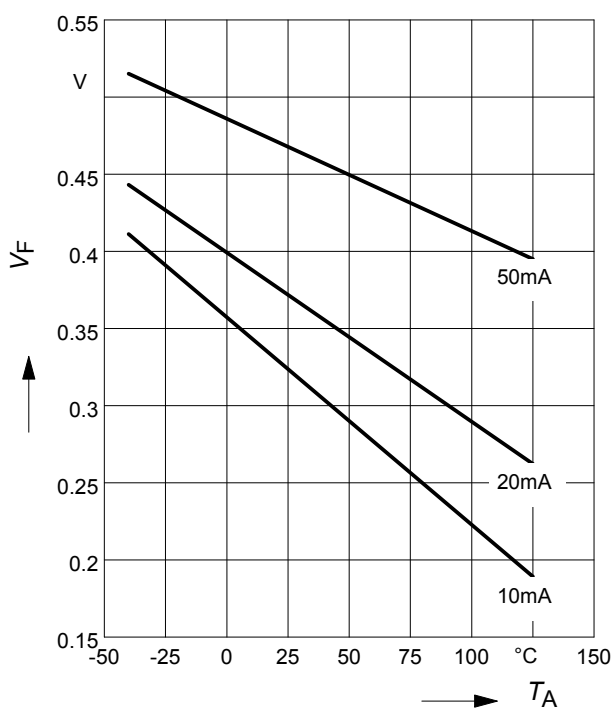
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



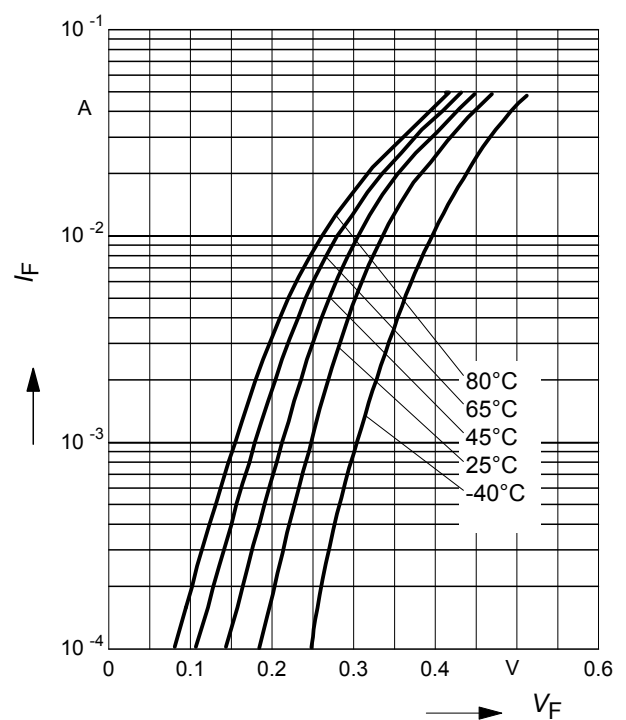
Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$

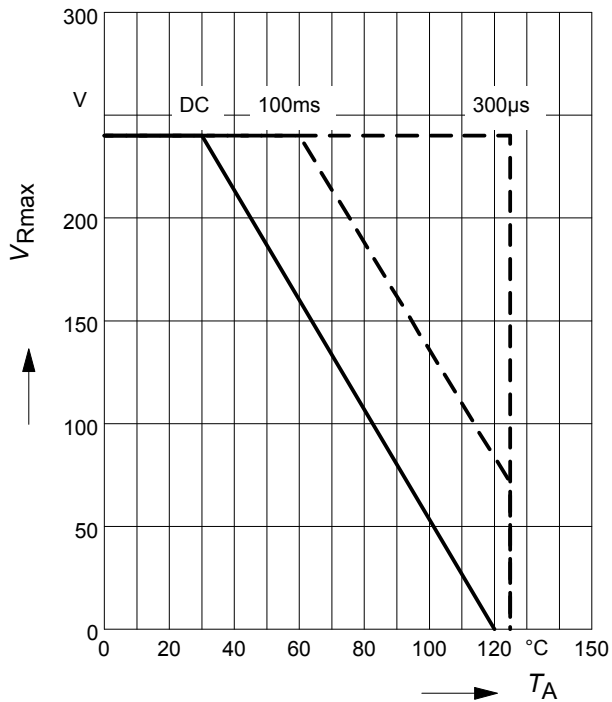
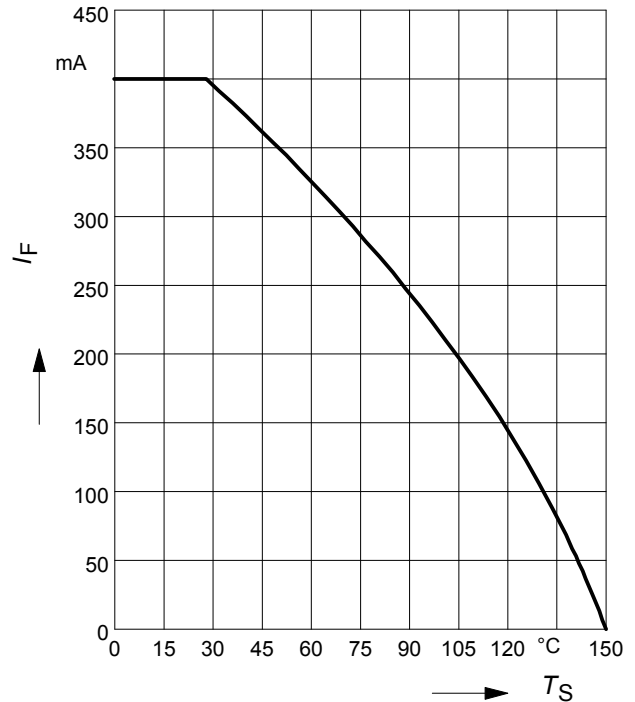
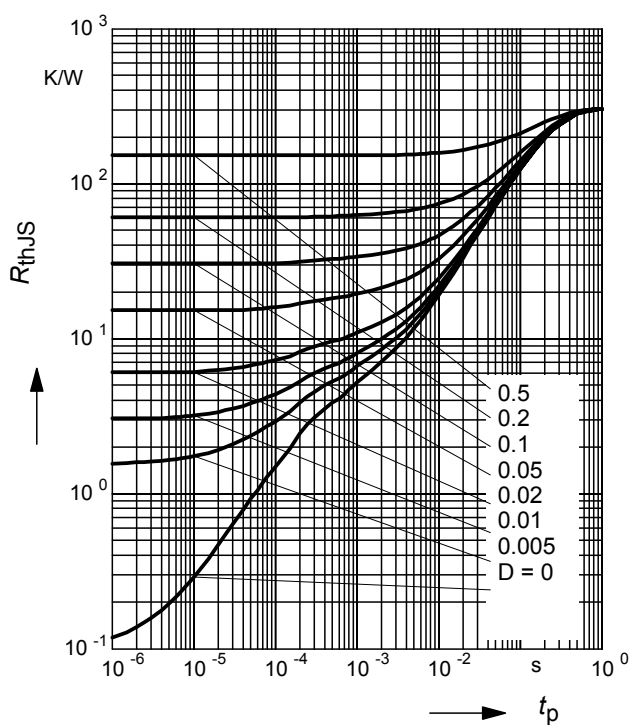


Forward current $I_F = f(V_F)$

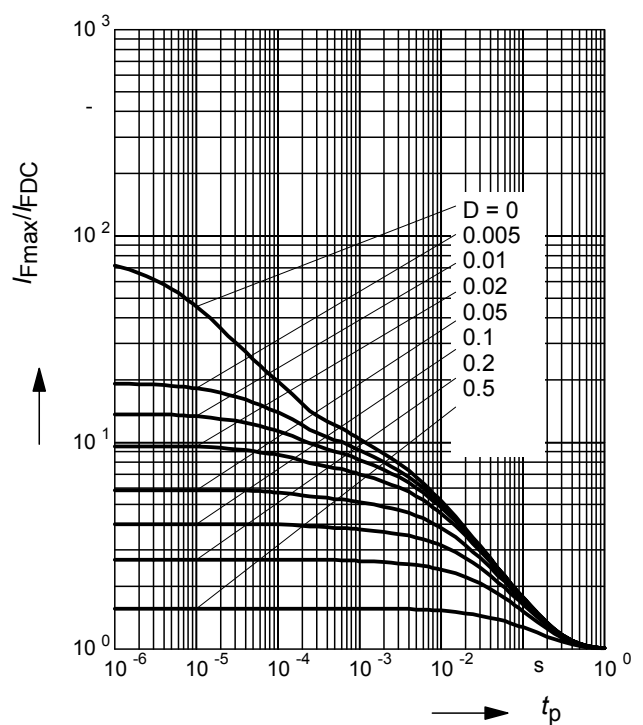
$T_A = \text{Parameter}$



Permissible Reverse voltage $V_R = f(T_A)$
 t_p = Parameter, Duty cycle < 0.01

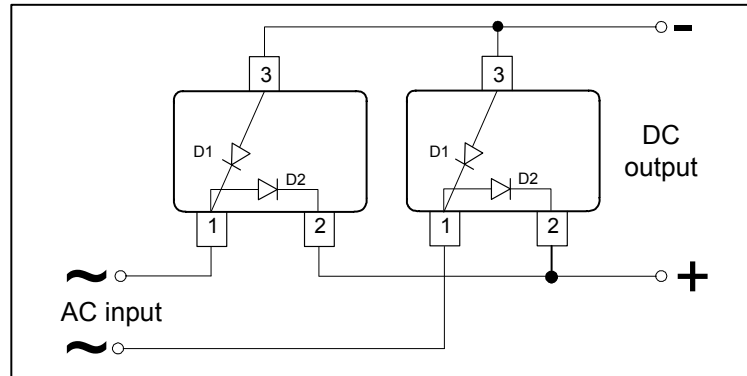
Device mounted on PCB with $R_{th} = 160 \text{ k/W}$

Forward current $I_F = f(T_S)$

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

Permissible Pulse Load

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

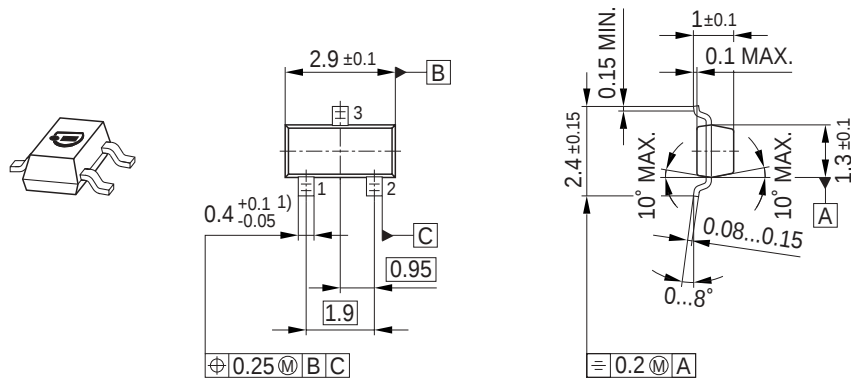


Application example BAT240A

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

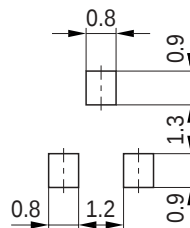


Package Outline

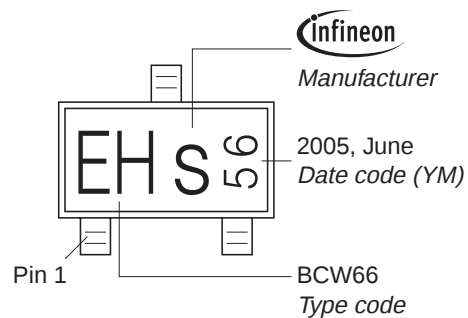


1) Lead width can be 0.6 max. in dambar area

Foot Print

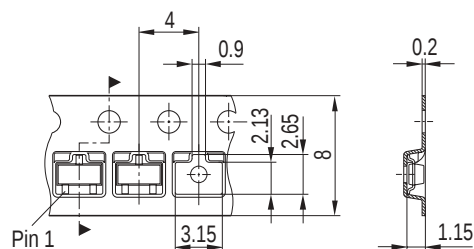


Marking Layout (Example)



Standard Packing

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



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