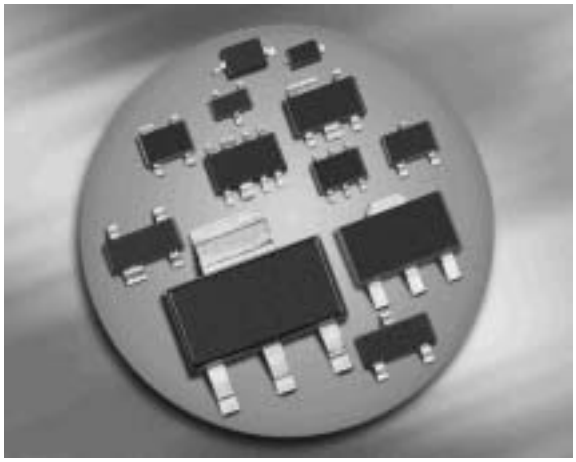
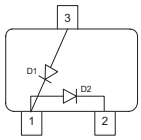
High Voltage Schottky Diode

- 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



AEC Qualified RoHS

BAT240A



ESD (**E**lectro**s**tatic **d**ischarge) sensitive device, observe handling precaution!

Type	Package	Configuration	Marking
BAT240A	SOT23	half bridge	4Ms

Maximum Ratings at T_A = 25°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 ($t \leq$ 10ms)	I_{FSM}	1	A
Total power dissipation $T_S \leq$ 28°C	P_{tot}	400	mW
Junction temperature	T_j	150	°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 TA > 25 °C the derating of VR and IF 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

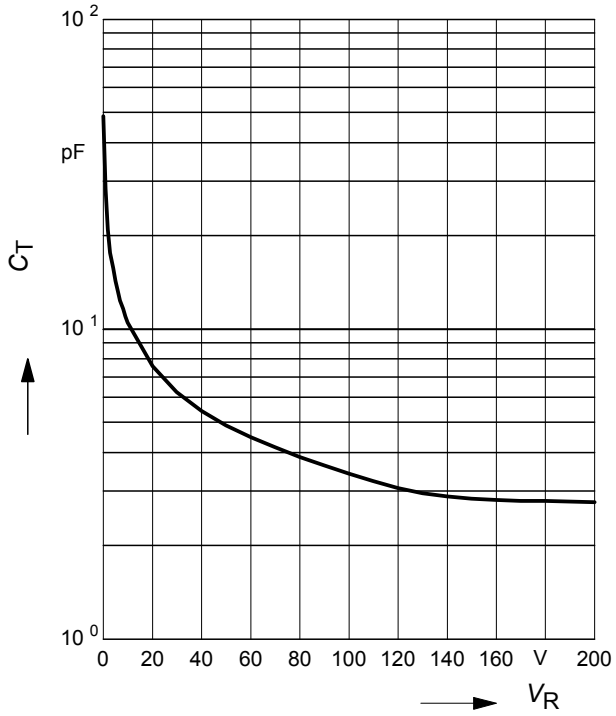
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 500 µA	$V_{(BR)}$	240	-	-	V
Reverse current	I_R				µA
V_R = 100 V		-	1	10	
V_R = 200 V		-	5	-	
Forward voltage	V_F				V
I_F = 10 mA		0.25	0.325	0.36	
I_F = 20 mA		0.29	0.37	0.41	
I_F = 50 mA		0.35	0.47	0.52	
I_F = 100 mA		-	0.58	-	
I_F = 200 mA		-	0.72	-	
I_F = 400 mA		-	0.9	-	
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 10 V, f = 1 MHz		-	11	15	
V_R = 5 V, f = 1 MHz		-	15	20	

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

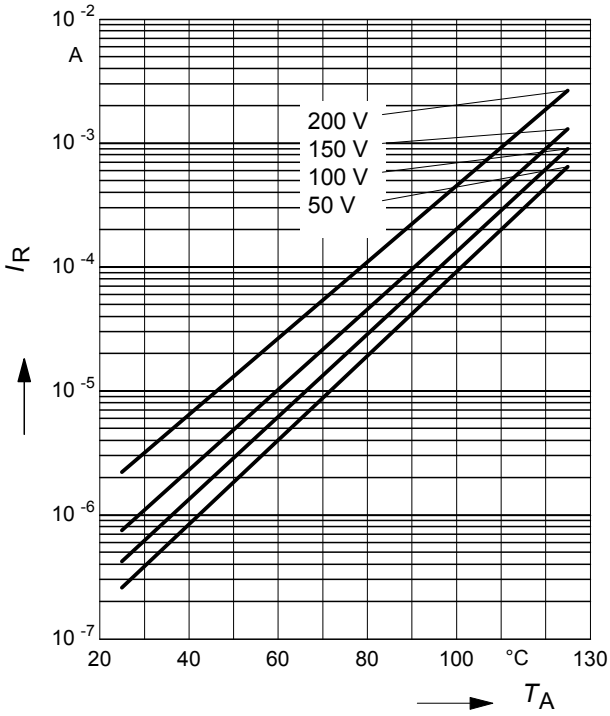
Diode capacitance $C_T = f(V_R)$

f = 1MHz



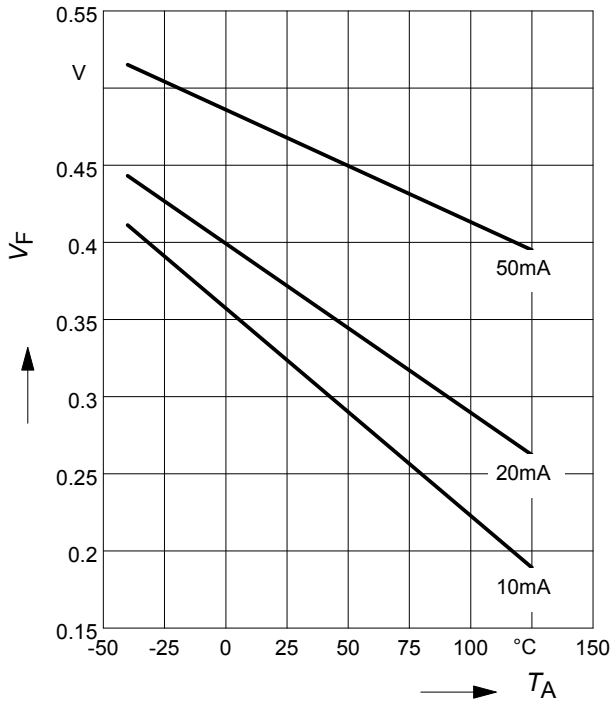
Reverse current $I_R = f(T_A)$

V_R = Parameter



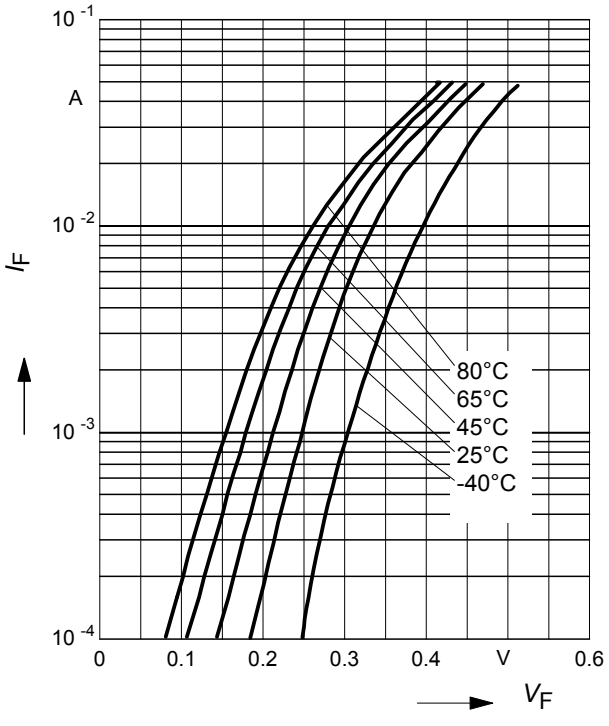
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



Forward current $I_F = f(V_F)$

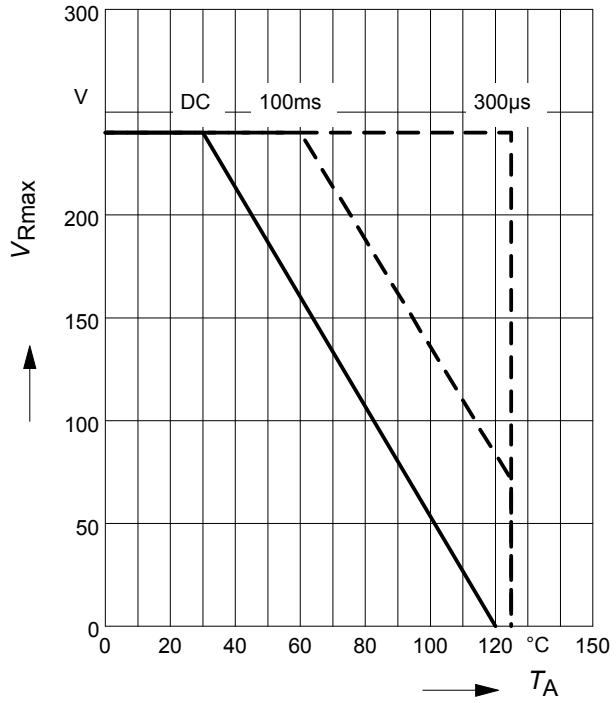
T_A = Parameter



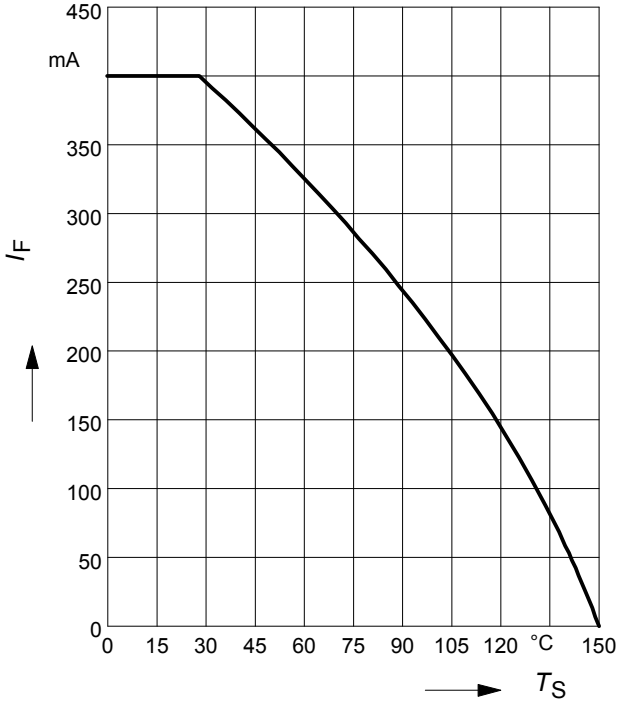
Permissible Reverse voltage $V_R = f(T_A)$

t_p = Parameter, Duty cycle < 0.01

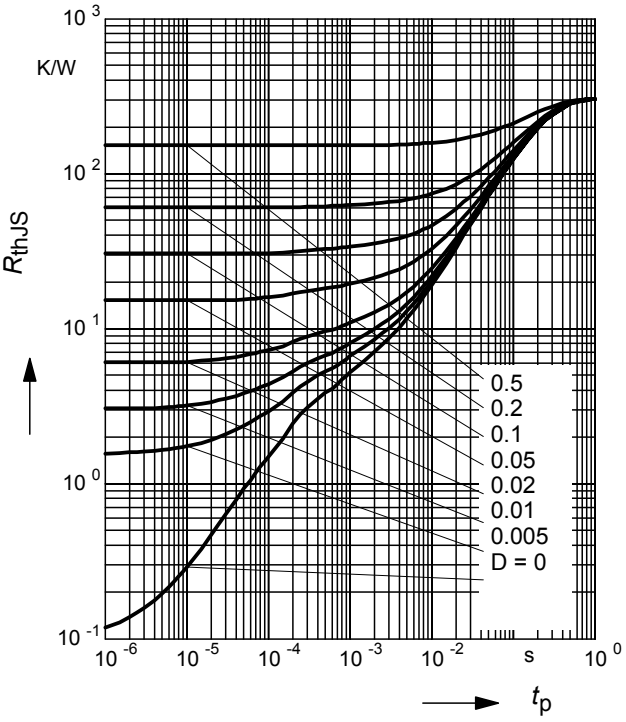
Device mounted on PCB with R_{th} = 160 k/W



Forward current $I_F = f(T_S)$

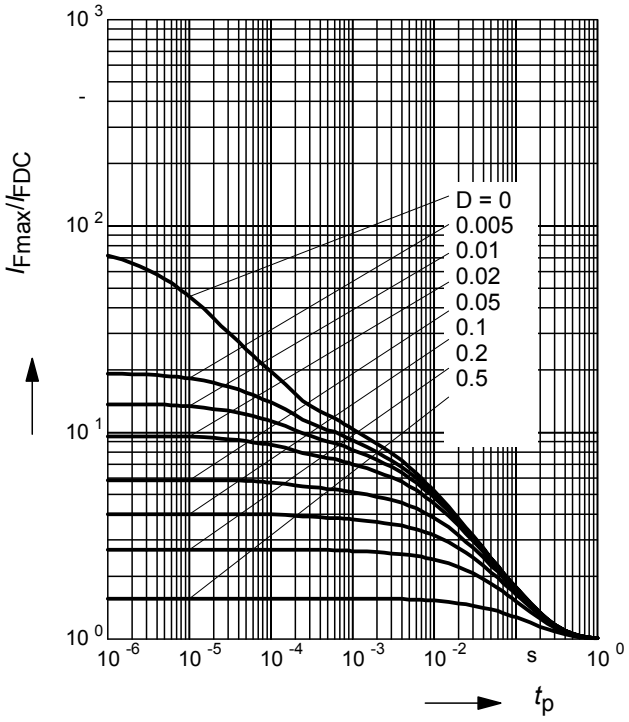


Permissible Puls Load $R_{thJS} = f(t_p)$

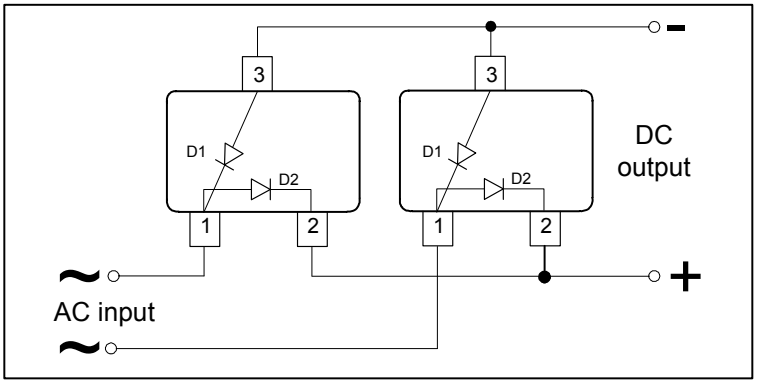


Permissible Pulse Load

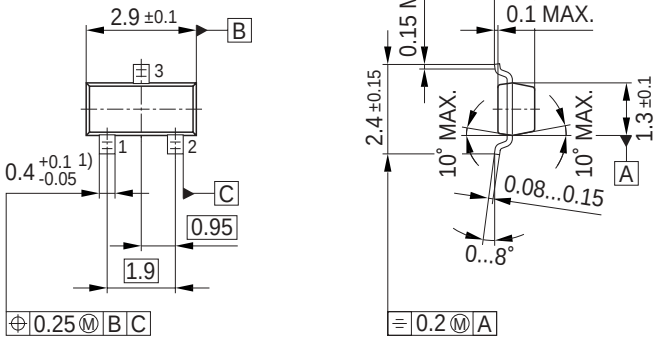
$I_{Fmax}/ I_{FDC} = f(t_p)$



Application example BAT240A
Energy efficient bridge rectification for 110 V / 60 Hz power lines

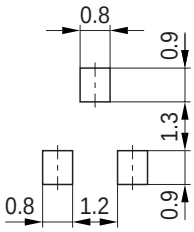


Package Outline

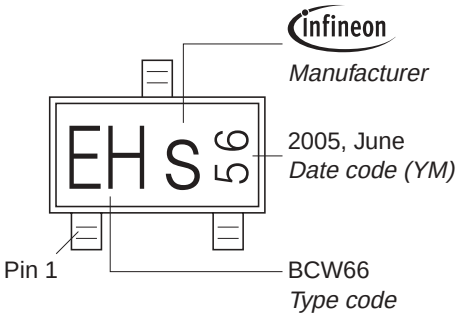


1) Lead width can be 0.6 max. in dambar area

Foot Print

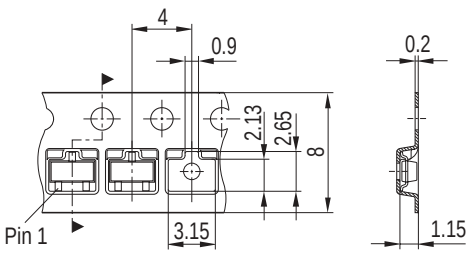


Marking Layout (Example)



Standard Packing

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



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