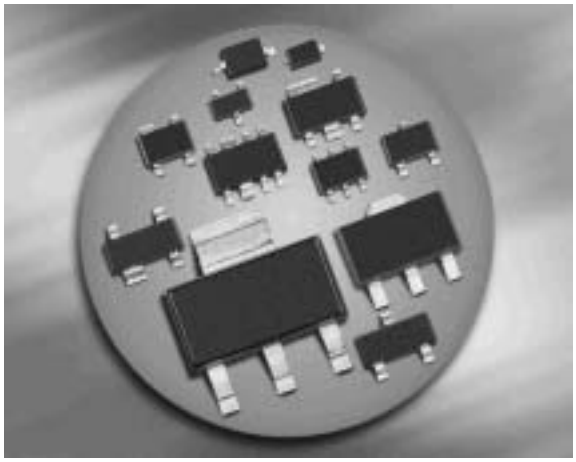
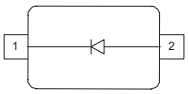
Medium Power AF Schottky Diode

- Forward current: 750 mA
  Reverse voltage: 40 V
- For low-loss, fast-recovery, meter protection, bias isolation and clamping applications
- Pb-free (RoHS compliant) package[1)]
- Qualified according AEC Q101



AEC Qualified RoHS

BAT165



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

Type	Package	Configuration	Marking
BAT165	SOD323	single	C/White

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage[2)]	V_R	40	V
Forward current[2)]	I_F	750	mA
Average rectified forward current (50/60Hz, sinus)	I_{FAV}	500	mA
Non-repetitive peak surge forward current ($t \leq$ 10ms)	I_{FSM}	2.5	A
Total power dissipation $T_S \leq$ 93°C	P_{tot}	600	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[3)]	R_{thJS}	≤ 95	K/W

[1]Pb-containing package may be available upon special request
[2]For T_A > 25°C the derating of V_R and I_F has to be considered. Please refer to the attached curves.
[3]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

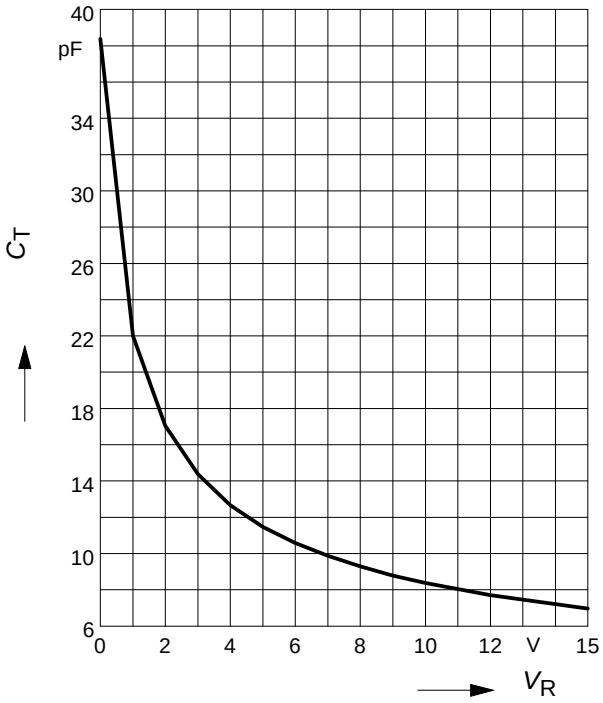
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current[1)]	I_R				µA
V_R = 30 V		-	-	12	
V_R = 40 V		-	-	50	
V_R = 40 V, T_A = 65 °C		-	-	900	
Forward voltage	V_F				V
I_F = 10 mA		0.23	0.315	0.4	
I_F = 100 mA		0.32	0.39	0.47	
I_F = 250 mA		0.35	0.44	0.54	
I_F = 750 mA		0.44	0.58	0.74	
AC Characteristics					
Diode capacitance	C_T	-	8.4	12	pF
V_R = 10 V, f = 1 MHz					

[1]Pulsed test: t_p = 300 µs; D = 0.01

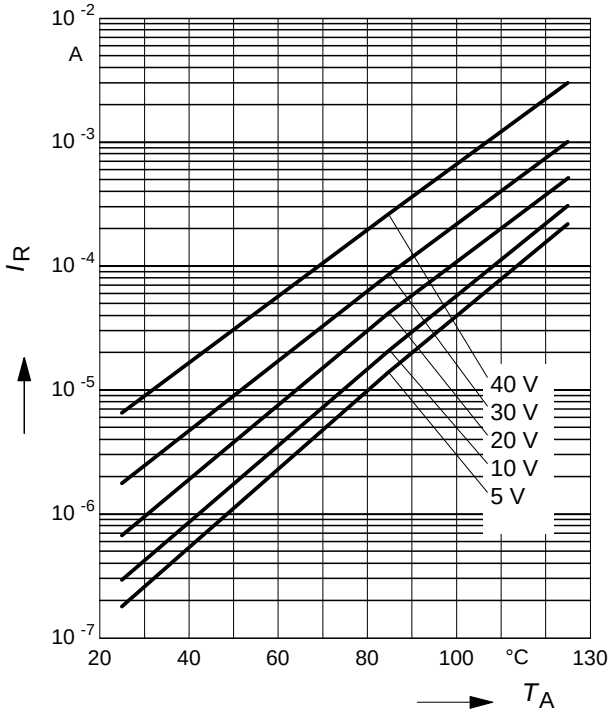
Diode capacitance $C_T = f(V_R)$

f = 1MHz



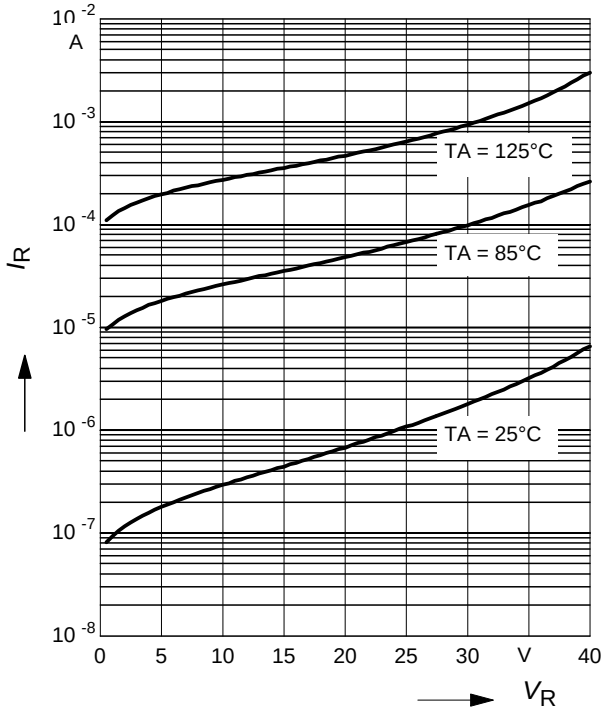
Reverse current $I_R = f(T_A)$

V_R = Parameter



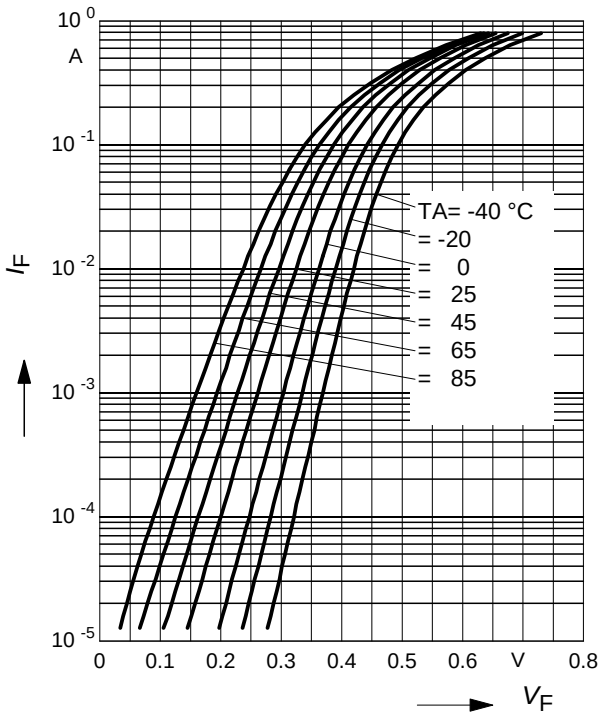
Reverse current $I_R = f(V_R)$

T_A = Parameter



Forward current $I_F = f(V_F)$

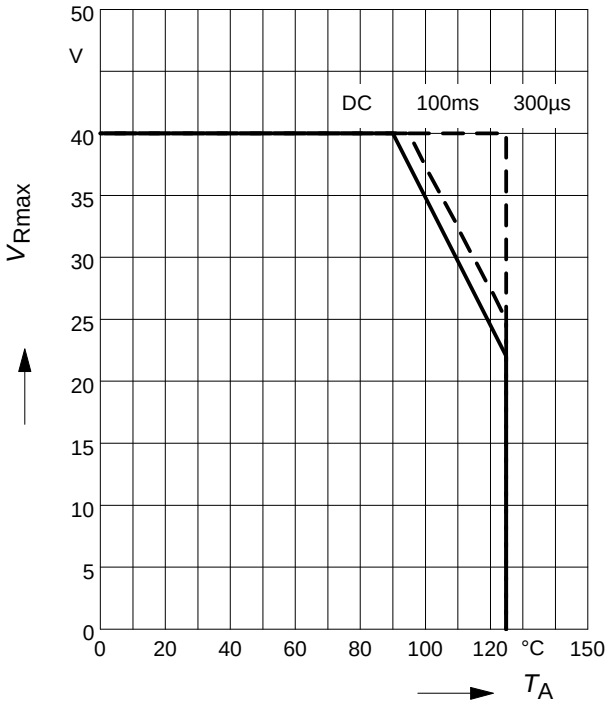
T_A = Parameter



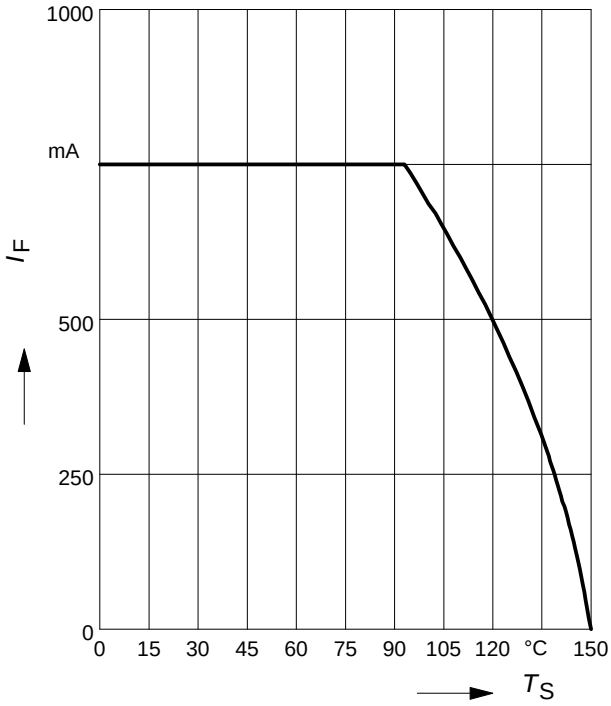
Permissible Reverse voltage $V_R = f(T_A)$

t_p = Parameter, Duty cycle < 0.01

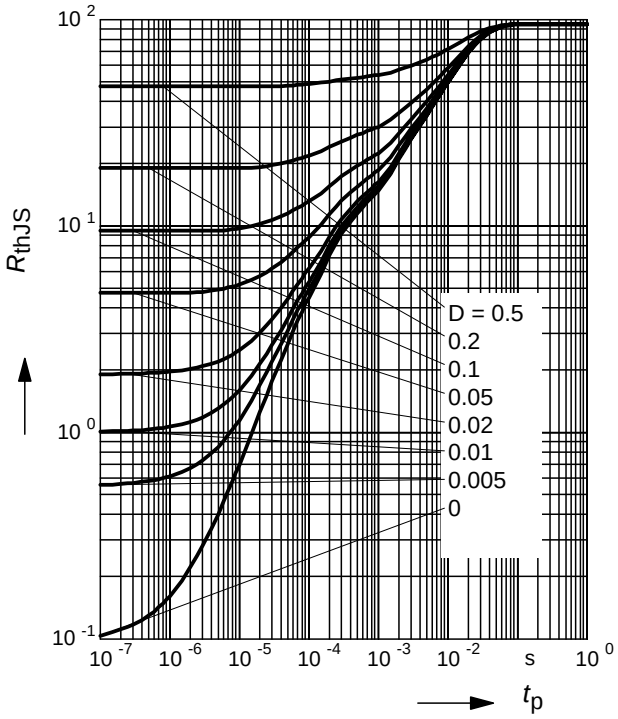
Device mounted on PCB with R_{th} = 160 k/W



Forward current $I_F = f(T_S)$

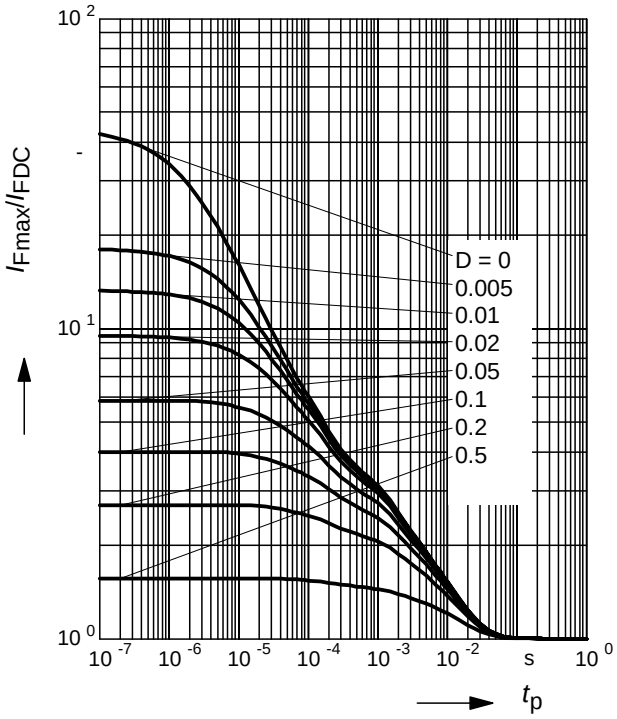


Permissible Puls Load $R_{thJS} = f(t_p)$

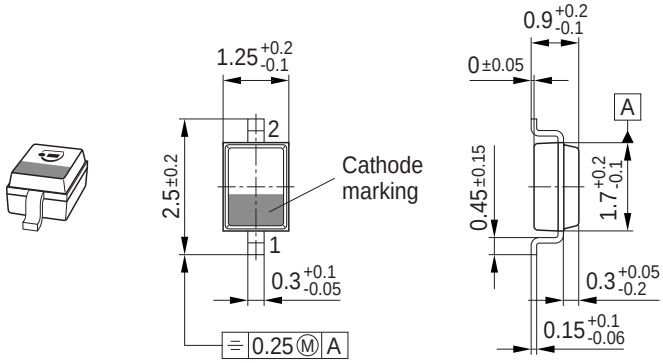


Permissible Pulse Load

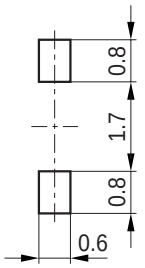
$I_{Fmax}/I_{FDC} = f(t_p)$



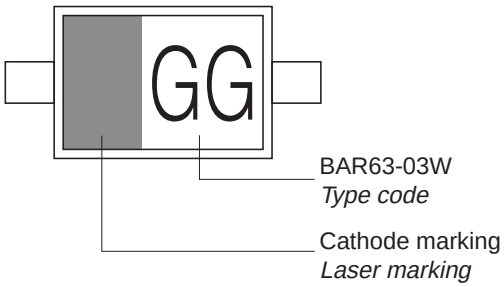
Package Outline



Foot Print

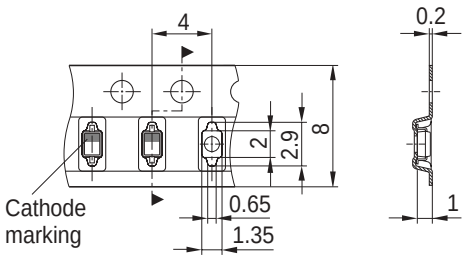


Marking Layout (Example)



Standard Packing

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



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