

## Features

- ◆ Integrated protection ring against static discharge.
- ◆ These diodes feature very low turn-on voltage and fast switching. This device is protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges.
- ◆ The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications.
- ◆ Low capacitance.



## Typical Applications

- ◆ General purpose and switching Schottky barrier diode.
- ◆ HF-Detector, Protection circuit.
- ◆ Diode for low currents with a low supply voltage.
- ◆ Small battery charger, Power supplies.
- ◆ DC/DC converter for notebooks.

MINIMELF (GLASS CASE)

## Mechanical Data

- ◆ Case: MiniMELF Glass Case
- ◆ Weight: approx. 0.05g

## Absolute Maximum Ratings

( $T_A=25^\circ\text{C}$  unless otherwise noted)

Parameter	Part	Symbol	Value	Unit
Repetitive peak reverse voltage	BAS81	$V_{RRM}$	40	V
	BAS82	$V_{RRM}$	50	
	BAS83	$V_{RRM}$	60	
Forward continuous current at $T_{amb}=25^\circ\text{C}$		$I_F$	30	mA
Repetitive peak forward current at $t_p < 1\text{s}$ , $\delta < 0.5$ , $T_{amb}=25^\circ\text{C}$		$I_{FRM}$	150	mA
Surge forward current at $t_p < 10\text{ms}$ , $T_{amb}=25^\circ\text{C}$		$I_{FSM}$	500	mA
Power dissipation <sup>(1)</sup> at $T_{amb}=25^\circ\text{C}$		$P_{tot}$	200 <sup>(1)</sup>	mW

## Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal resistance junction to ambient air	$R_{\theta JA}$	320 <sup>(1)</sup>	$^\circ\text{C/W}$
Junction temperature	$T_j$	125	$^\circ\text{C}$
Ambient operating temperature range	$T_{amb}$	- 65 to +125	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	- 65 to +150	$^\circ\text{C}$

## Electrical Characteristics

( $T_A=25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	TestCondition	Min.	Typ.	Max.	Unit
Reverse breakdown voltage	BAT81S	$I_R=100\mu\text{A}$ (pulsed)	40	—	—	V
	BAT82S		50	—	—	V
	BAT83S		60	—	—	V
Leakage current pulse test $t_p < 300\mu\text{s}$ , $\delta < 2\%$	$I_R$	$V_R = V_{RRM}$	—	—	0.20	$\mu\text{A}$
Forward voltage pulse test $t_p < 300\mu\text{s}$ , $\delta < 2\%$	$V_F$	$I_F = 0.1\text{mA}$	—	—	0.330	V
		$I_F = 1.0\text{mA}$	—	—	0.410	
		$I_F = 15\text{mA}$	—	—	1.000	
Capacitance	$C_{tot}$	$V_R = 1\text{V}$ , $f = 1\text{MHz}$	—	—	8	pF
Reverse recovery time	$t_{rr}$	$I_F = 10\text{mA}$ , $I_R = 10\text{mA}$ $I_{rr} = 1\text{mA}$ , $R_L = 100\Omega$	—	—	5	ns

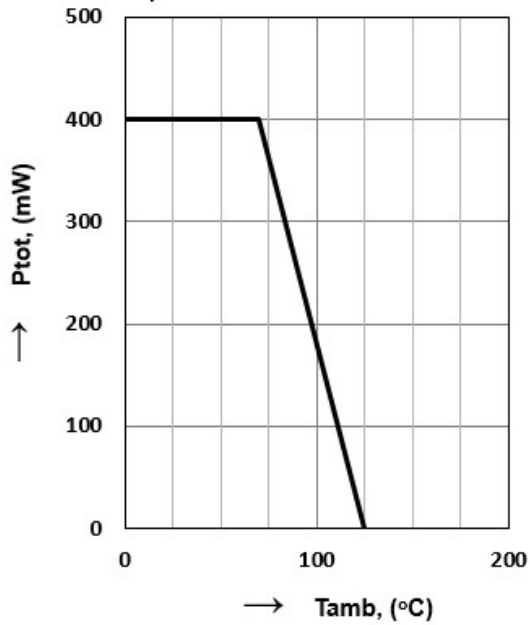
Notes: 1. Valid provided that electrodes are kept at ambient temperature.

## Ratings and Characteristics Curves

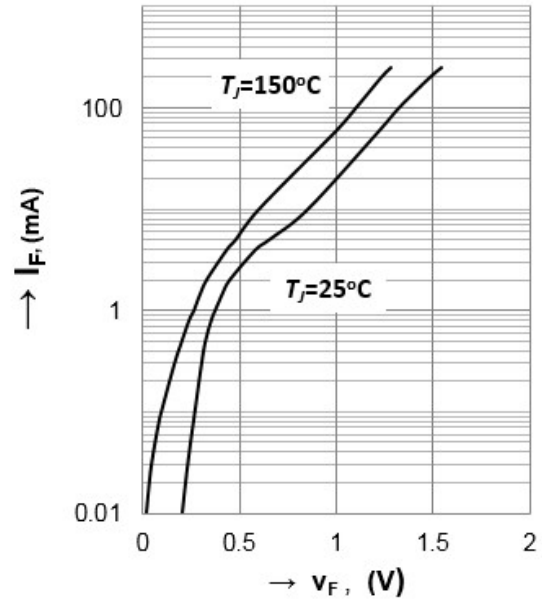
( $T_J = 25^\circ\text{C}$  unless otherwise noted)

### Admissible power dissipation versus ambient temperature

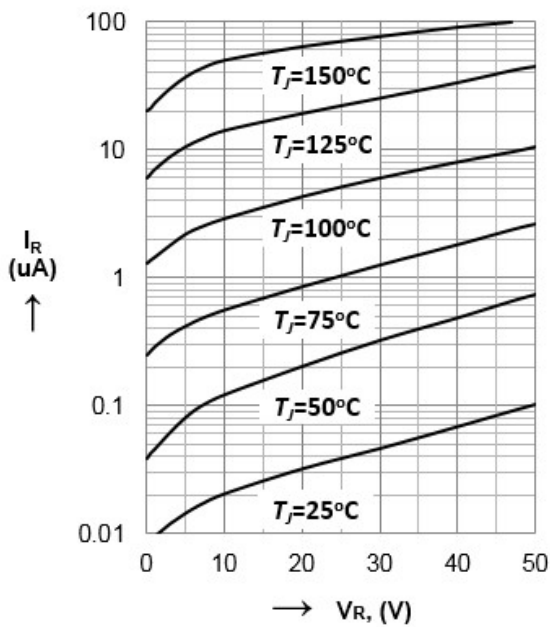
Valid provided that leads are kept ambient temperature at a distance of 9.5 mm from case



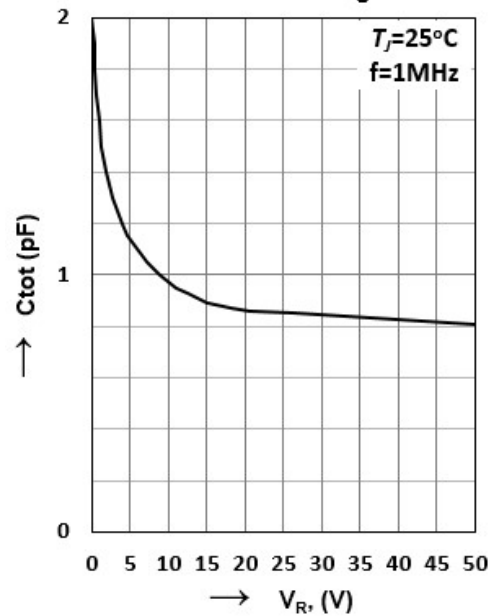
### Typical forward characteristics



### Leakage current versus junction temperature

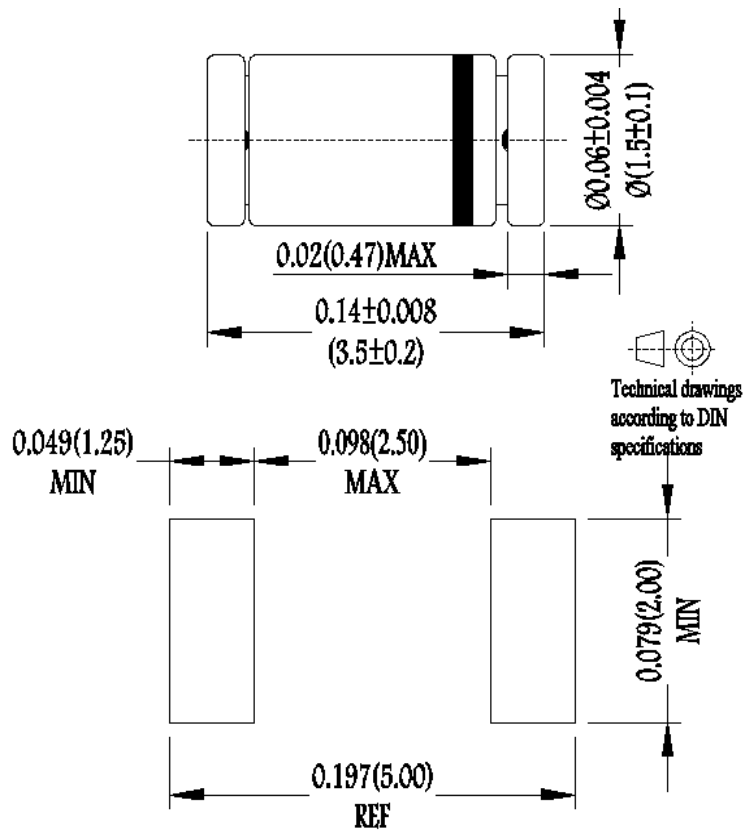


### Typical capacitance versus reverse voltage



## Package Outline Dimensions

in inches (millimeters)



Version	Revision content	Date
A	Initial version release	Jun-21



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