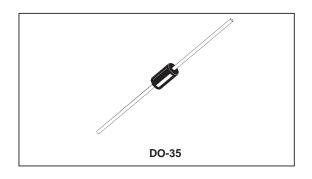
# **BAT41**

# SMALL SIGNAL SCHOTTKY DIODE

### **DESCRIPTION**

General purpose metal to silicon diode featuring very low turn-on voltage and fast switching.

This device has integrated protection against excessive voltage such as electrostatic discharges.



# **ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter	Value	Unit	
$V_{RRM}$	Repetitive Peak Reverse Voltage		100	V
I <sub>F</sub>	Forward Continuous Current*	T <sub>a</sub> = 25°C	100	mA
I <sub>FRM</sub>	Repetitive Peak Forward Current*	$\begin{array}{l} t_p \leq 1s \\ \delta \leq 0.5 \end{array}$	350	mA
$I_{FSM}$	Surge non Repetitive Forward Current*	$t_p \le 10ms$	750	mA
P <sub>tot</sub>	Power Dissipation*	$T_a = 95^{\circ}C$	100	mW
$T_{stg} \ T_{j}$	Storage and Junction Temperature Range		- 65 to +150 - 65 to +125	°C °C
TL	Maximum Lead Temperature for Soldering of from Case	230	°C	

#### THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
R <sub>th(j-a)</sub>	Junction-ambient*	300	°C/W

#### **ELECTRICAL CHARACTERISTICS**

# STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Тур.	Max.	Unit
$V_{BR}$	T <sub>j</sub> = 25°C	$I_R = 100 \mu A$		100			V
V <sub>F</sub> * *	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1mA			0.4	0.45	V
	T <sub>j</sub> = 25°C	$I_F = 200 \text{mA}$				1	
I <sub>R</sub> * *	T <sub>j</sub> = 25°C		V <sub>R</sub> = 50V			0.1	μΑ
	T <sub>j</sub> = 100°C					20	

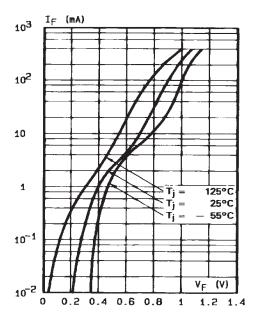
# DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Тур.	Max.	Unit	
С	T <sub>j</sub> = 25°C	$V_R = 1V$	f = 1MHz		2		pF

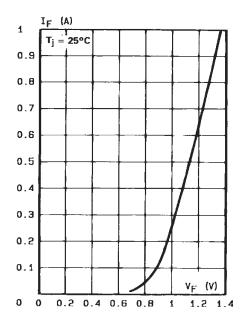
<sup>\*</sup> On infinite heatsink with 4mm lead length \* \* Pulse test:  $t_p {\le}~300 \mu s~\delta {<}~2\%$ 

October 2001 - Ed: 1B 1/4

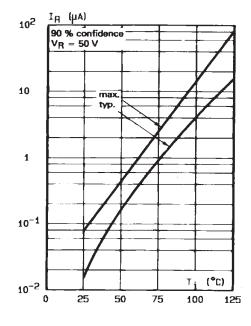
**Fig. 1:** Forward current versus forward voltage at different temperatures (typical values).



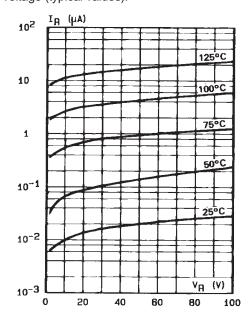
**Fig. 2:** Forward current versus forward voltage (typical values).



**Fig. 3:** Reverse current versus junction temperature.

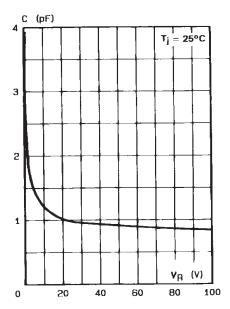


**Fig. 4:** Reverse current versus continuous reverse voltage (typical values).



**577** 

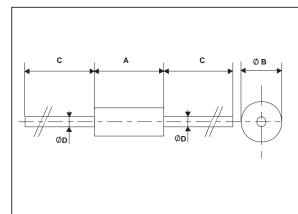
Fig. 5: Capacitance C versus reverse applied voltage  $V_{\scriptscriptstyle R}$  (typical values).



**577** 

#### PACKAGE MECHANICAL DATA

DO-35



REF.	DIMENSIONS				
	Millimeters		Millimeters Inches		
	Min.	Max.	Min.	Max.	
А	3.05	4.50	0.120	0.177	
В	1.53	2.00	0.060	0.079	
С	28.00		1.102		
D	0.458	0.558	0.018	0.022	

Cooling method: by convection and conduction

Marking: clear, ring at cathode end.

Weight: 0.15g

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied.

STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics

© 2001 STMicroelectronics - Printed in Italy - All rights reserved.

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A.

http://www.st.com

57