

## SMD1 (TO-276AB) PACKAGE

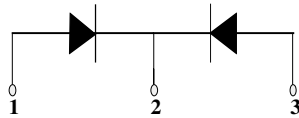
## SiC SCHOTTKY DIODE



**$V_R$  300V**  
 **$I_F$  2x10A**

Semelab's Silicon Carbide (SiC) Schottky diodes exhibit low forward voltage, zero reverse recovery, and superb high-temperature performance.

The devices employ Semelab's proven hermetic packaging technology and are suitable for high-frequency hard-switching applications, where system efficiency and reliability are paramount.



### ABSOLUTE MAXIMUM RATINGS at $T_J = 25^\circ\text{C}$ unless otherwise stated (per leg)

Symbol	Parameter	Rating	Units
$V_R$	DC Reverse Voltage	300	V
$V_{RRM}$	Repetitive Peak Reverse Voltage	300	V
$V_{RSM}$	Surge Peak Reverse Voltage	300	V
$I_F$	DC Forward Current $T_C = 100^\circ\text{C}$	10	A
$I_{FRM}$	Repetitive Peak Forward Current $T_J = 150^\circ\text{C}$ , $T_C = 100^\circ\text{C}$ , $D = 0.1$	45	A
$I_{FSM}$	Surge Peak Forward Current $T_C = 25^\circ\text{C}$ , $t_p = 10\mu\text{s}$	100	A
$P_D$	Power Dissipation $T_C = 25^\circ\text{C}$	70W	W
$T_J, T_{stg}$	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

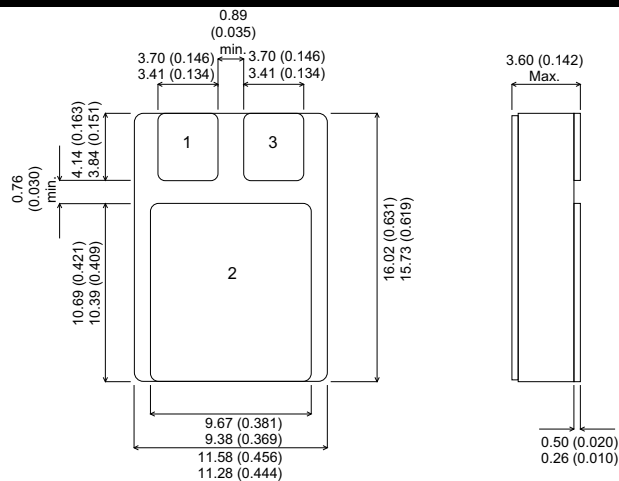
**ELECTRICAL CHARACTERISTICS** at  $T_J = 25^\circ\text{C}$  unless otherwise stated (per leg)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>Static Characteristics</b>						
$V_F$	Forward Voltage	$I_F = 10\text{A}$		1.5	1.7	V
		$I_F = 10\text{A}, T_J = 150^\circ\text{C}$		1.5	1.9	V
$I_R$	Reverse Current	$V_R = 300\text{V}$		15	200	$\mu\text{A}$
		$V_R = 300\text{V}, T_J = 150^\circ\text{C}$		20	1000	$\mu\text{A}$
<b>Dynamic Characteristics</b>						
$Q_C$	Total Capacitive Charge	$V_R = 200\text{V}, I_F = 10\text{A},$ $di/dt = 200\text{A}/\mu\text{s}, T_J = 150^\circ\text{C}$		23		nC
$t_{rr}$	Reverse Recovery Time			n.a.		ns
C	Total Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		600		pF
		$V_R = 150\text{V}, f = 1\text{MHz}$		55		pF
		$V_R = 300\text{V}, f = 1\text{MHz}$		40		pF

**THERMAL CHARACTERISTICS** (per leg)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$R_{th}$	Thermal Resistance, Junction to Case	TO276AB Package		2.1		$^\circ\text{C}/\text{W}$

**PACKAGE DIMENSIONS** mm (in)



Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.