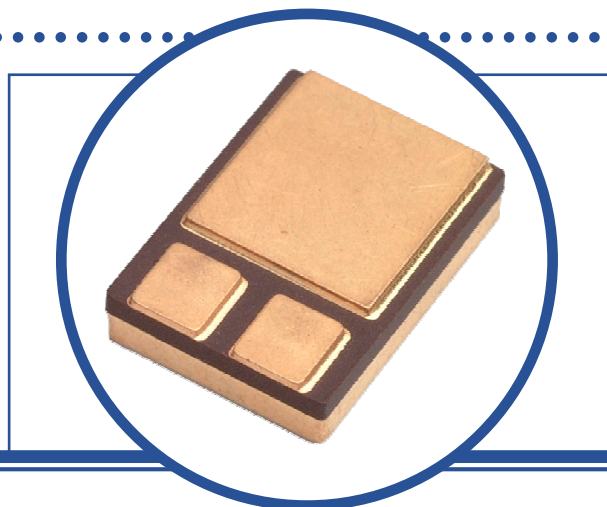


# SILICON CARBIDE (SiC) SCHOTTKY DIODE

## SML10SiC06SMD5

- Hermetic Ceramic Surface Mount Package.
- Semelab's Silicon Carbide (SiC) Schottky diodes exhibit low forward voltage and superb high temperature performance.
- Suitable for high-frequency hard switching applications, where system efficiency and reliability are paramount.
- No reverse recovery time due to absence of minority carrier injection.
- Screening Options Available.



### ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub> = 25°C unless otherwise stated)

V <sub>R</sub>	DC Reverse Voltage	600V
V <sub>RRM</sub>	Repetitive Peak Reverse Voltage	600V
I <sub>F</sub>	DC Forward Current (T <sub>J</sub> = 175°C)	10A
I <sub>FRM</sub>	Repetitive Peak Forward Current <sup>(1)</sup>	67A
I <sub>FSM</sub>	Surge Peak Forward Current <sup>(2)</sup>	250A
P <sub>D</sub>	Total Power Dissipation at Derate Above 25°C	100W 0.5W/°C
T <sub>J</sub>	Junction Temperature Range	-55 to +225°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +225°C

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
R <sub>θJC</sub>	Thermal Resistance, Junction To Case	2.0	°C/W

#### Notes

(1) T<sub>c</sub> = 25°C, T<sub>p</sub> = 10ms, Half Sine Wave, D = 0.3

(2) T<sub>c</sub> = 25°C, T<sub>p</sub> = 10μs

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## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

### Static Characteristics

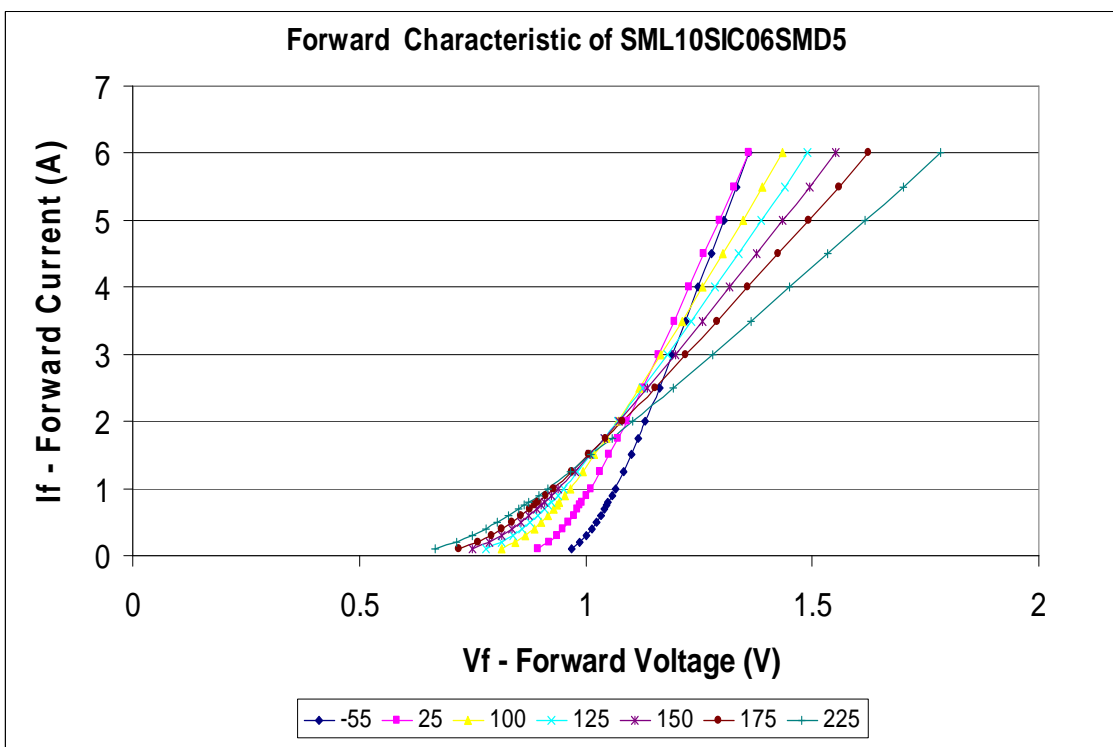
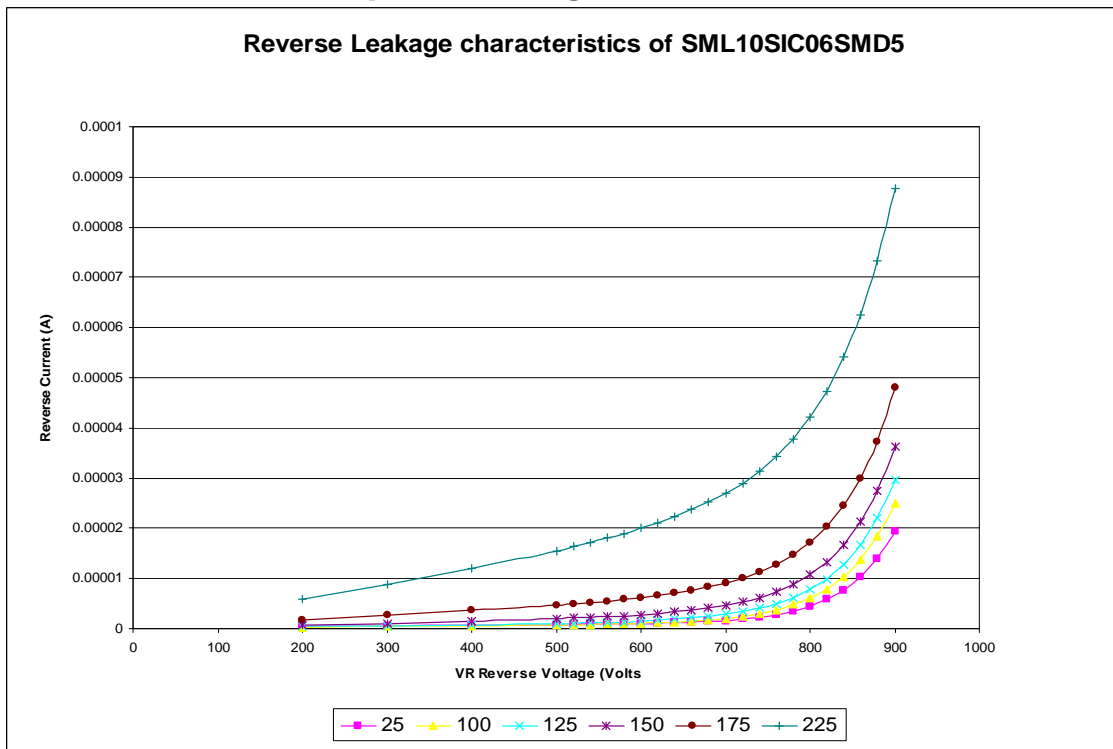
Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_F$	Forward Voltage	$I_F = 10\text{A}$		1.5	1.8	V
		$T_J = 175^\circ\text{C}$		2.0	2.4	
$I_R$	Reverse Current	$V_R = 600\text{V}$		10	50	$\mu\text{A}$
		$T_J = 175^\circ\text{C}$		20	200	

### Dynamic Characteristics

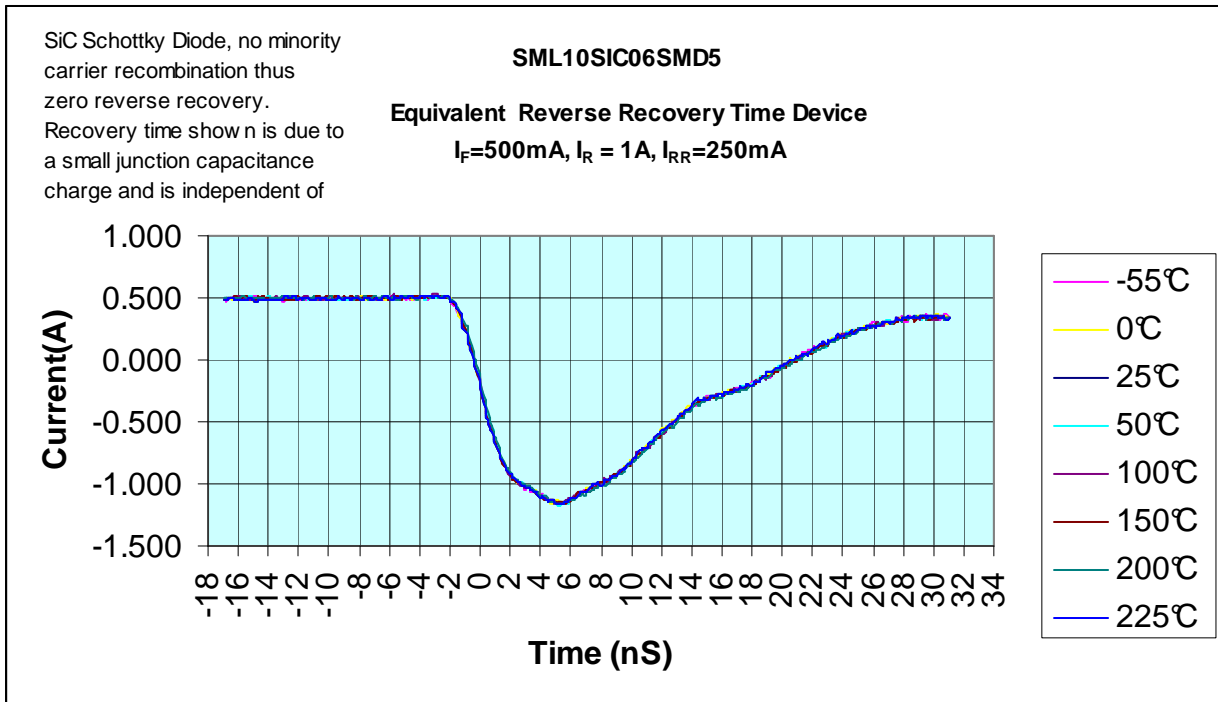
$Q_C$	Total Capacitive Charge	$V_R = 600\text{V}, I_F = 10\text{A}$ $\delta i/\delta t = 500\text{A}/\mu\text{s}$		25		nC
C	Total Capacitance	$V_R = 1.0\text{V}, f = 1.0\text{MHz}$		480		$\text{pF}$
		$V_R = 200\text{V}, f = 1.0\text{MHz}$		50		
		$V_R = 400\text{V}, f = 1.0\text{MHz}$		42		

# SILICON CARBIDE (SiC) SCHOTTKY DIODE SML10SIC06SMD5

## Typical Performance Over Temperature Range

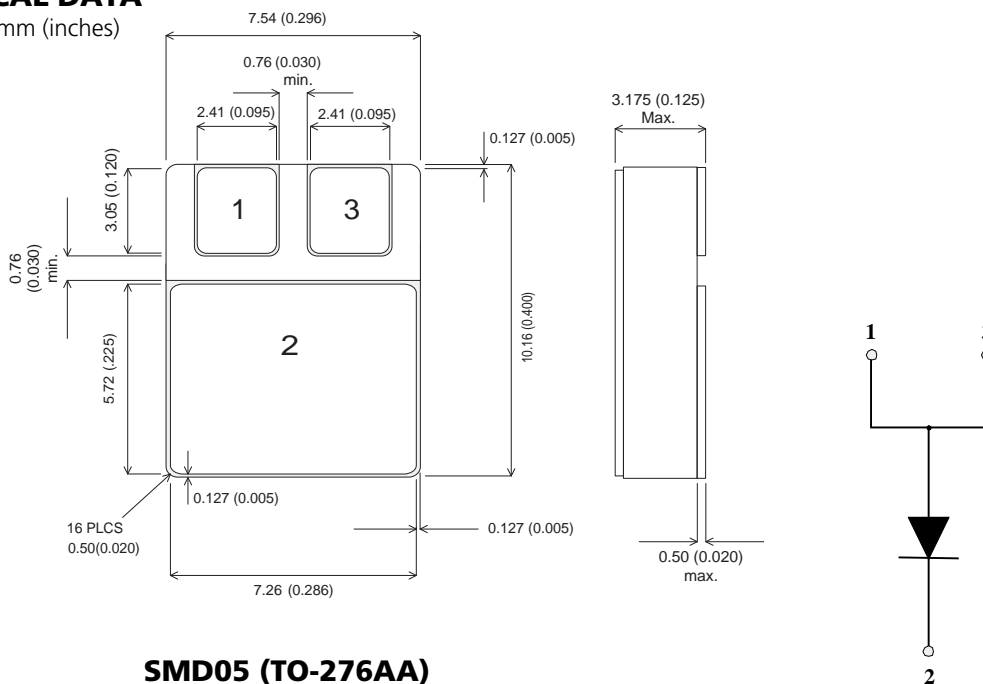


# SILICON CARBIDE (SiC) SCHOTTKY DIODE SML10SIC06SMD5



## MECHANICAL DATA

Dimensions in mm (inches)



**SMD05 (TO-276AA)**

### Underside View

Pad 1 – Anode      Pad 2 – Cathode      Pad 3 – Anode