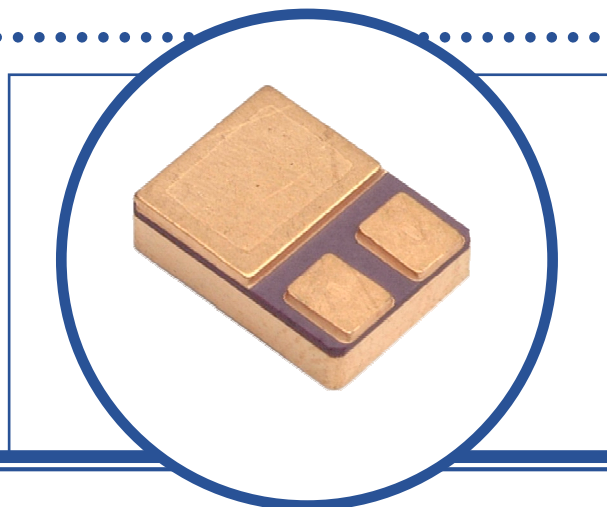


# SILICON CARBIDE (SiC) SCHOTTKY DIODE

## SML10SiC06SMD5C

- 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 (Per Diode, $T_C = 25^\circ\text{C}$ unless otherwise stated)

$V_R$	DC Reverse Voltage	600V
$V_{RRM}$	Repetitive Peak Reverse Voltage	600V
$I_F$	DC Forward Current ( $T_J = 175^\circ\text{C}$ )	10A
$I_{FRM}$	Repetitive Peak Forward Current <sup>(1)</sup>	67A
$I_{FSM}$	Surge Peak Forward Current <sup>(2)</sup>	250A
$P_D$	Total Power Dissipation at Derate Above $25^\circ\text{C}$	100W 0.5W/ $^\circ\text{C}$
$T_J$	Junction Temperature Range	-55 to $+225^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55 to $+225^\circ\text{C}$

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	2.0	$^\circ\text{C}/\text{W}$

#### Notes

(1)  $T_c = 25^\circ\text{C}$ ,  $T_p = 10\text{ms}$ , Half Sine Wave,  $D = 0.3$

(2)  $T_c = 25^\circ\text{C}$ ,  $T_p = 10\mu\text{s}$

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

### Static Characteristics

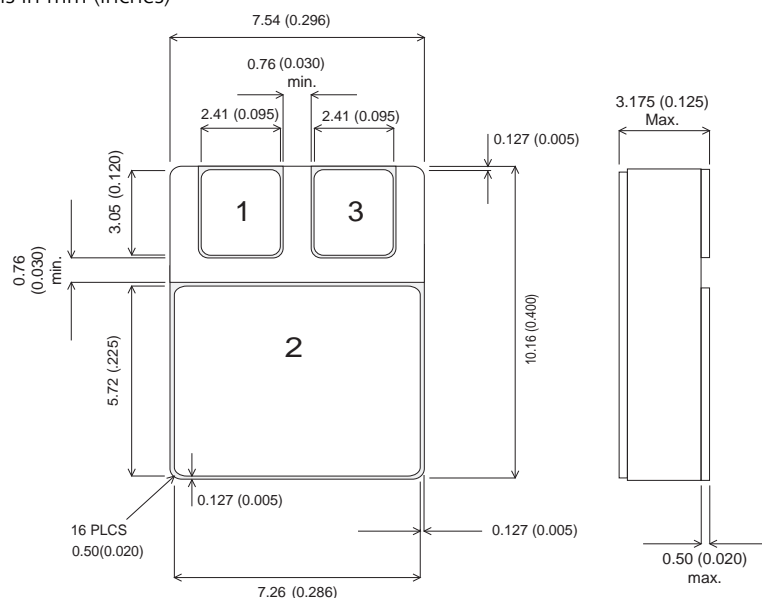
Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_F$	Forward Voltage	$I_F = 10\text{A}$		1.5	1.8	V
		$T_J = 175^\circ\text{C}$		2.0	2.4	
$I_R$	Reverse Current	$V_R = 600\text{V}$		10	50	$\mu\text{A}$
		$T_J = 175^\circ\text{C}$		20	200	

### 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		$\mu\text{F}$
		$V_R = 200\text{V}$ , $f = 1.0\text{MHz}$		50		
		$V_R = 400\text{V}$ , $f = 1.0\text{MHz}$		42		

## MECHANICAL DATA

Dimensions in mm (inches)



### SMD05 (TO-276AA)

#### Underside View

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

