

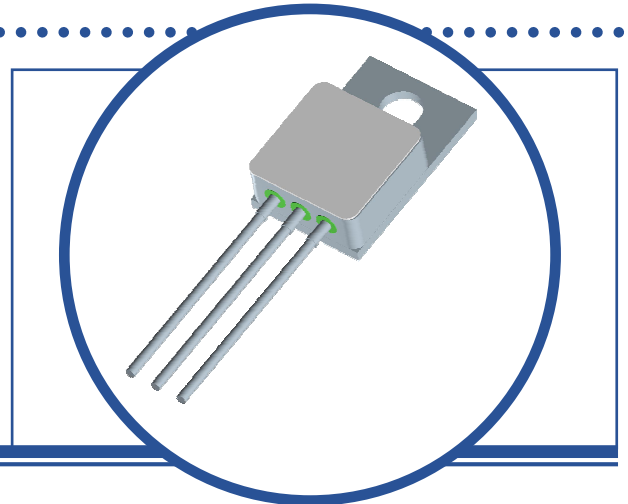
DUAL SILICON CARBIDE (SiC) SCHOTTKY DIODE



Semelab Limited

SML10SIC06YFIC

- Hermetic Metal TO-257 Flexy-lead Isolated 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 ⁽¹⁾	67A
I_{FSM}	Surge Peak Forward Current ⁽²⁾	250A
P_D	Total Power Dissipation at Derate Above 25°C	74W 0.37W/ $^\circ\text{C}$
T_J	Junction Temperature Range	-55 to $+225^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55 to $+225^\circ\text{C}$

THERMAL PROPERTIES (Per Diode)

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	2.70	$^\circ\text{C}/\text{W}$

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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Document Number 9280

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

Static Characteristics

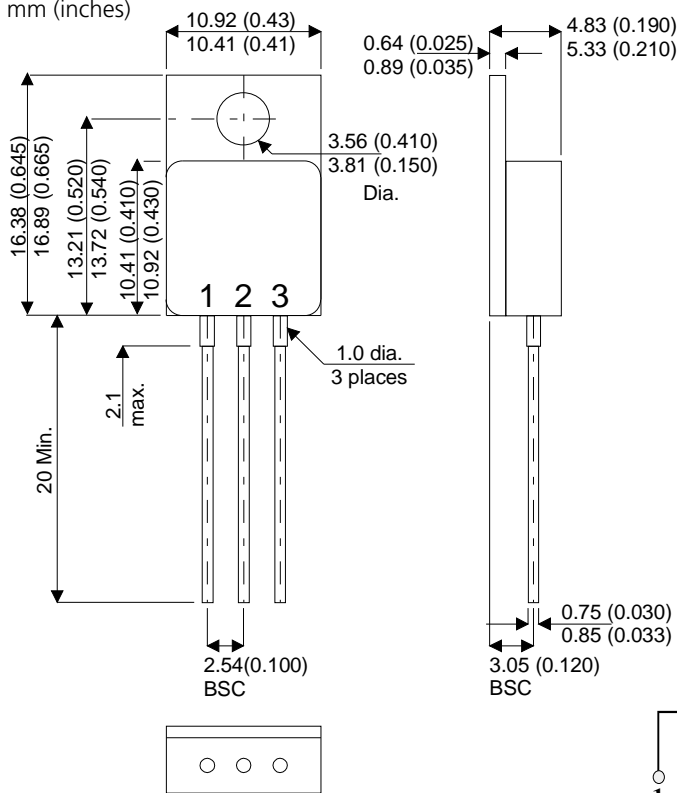
Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
V_F	Forward Voltage	$I_F = 10\text{A}$		1.5	1.8	V
		$T_J = 175^\circ\text{C}$		2.0	2.4	
I_R	Reverse Current	$V_R = 600\text{V}$		10	50	μA
		$T_J = 175^\circ\text{C}$		20	200	

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

MECHANICAL DATA

Dimensions in mm (inches)



TO-257 Flexy-lead

Pin 1 – Anode 1

Pin 2 – Common Cathode

Pin 3 – Anode 2

** Case Isolated