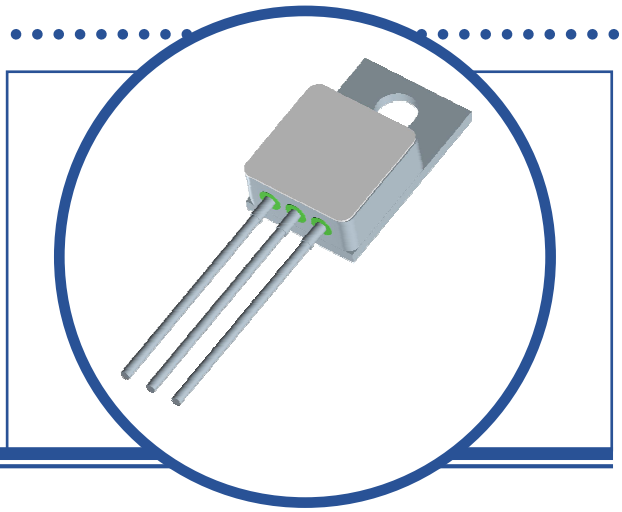
DUAL SILICON CARBIDE (SiC) SCHOTTKY DIODE

TT electronics
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°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°C)	10A
I_{FRM}	Repetitive Peak Forward Current (1)	67A
I_{FSM}	Surge Peak Forward Current (2)	250A
P_D	Total Power Dissipation at	74W
	Derate Above 25°C	0.37W/°C
T_J	Junction Temperature Range	-55 to +225°C
T_{stg}	Storage Temperature Range	-55 to +225°C

THERMAL PROPERTIES (Per Diode)

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

Notes
(1) T_c = 25°C, T_p = 10ms, Half Sine Wave, D = 0.3
(2) T_c = 25°C, T_p = 10µs

SEMELAB
A subsidiary of TT electronics plc.

Semelab Limited Coventry Road, Lutterworth, Leicestershire, LE17 4JB
Telephone +44 (0) 1455 556565 Fax +44 (0) 1455 552612 Email: sales@semelab-tt.com Website: http://www.semelab-tt.com

DUAL SILICON CARBIDE (SiC) SCHOTTKY DIODE
SML10SIC06YFIC

TT electronics
Semelab Limited

ELECTRICAL CHARACTERISTICS (Per Diode, T_C = 25°C unless otherwise stated)

Static Characteristics

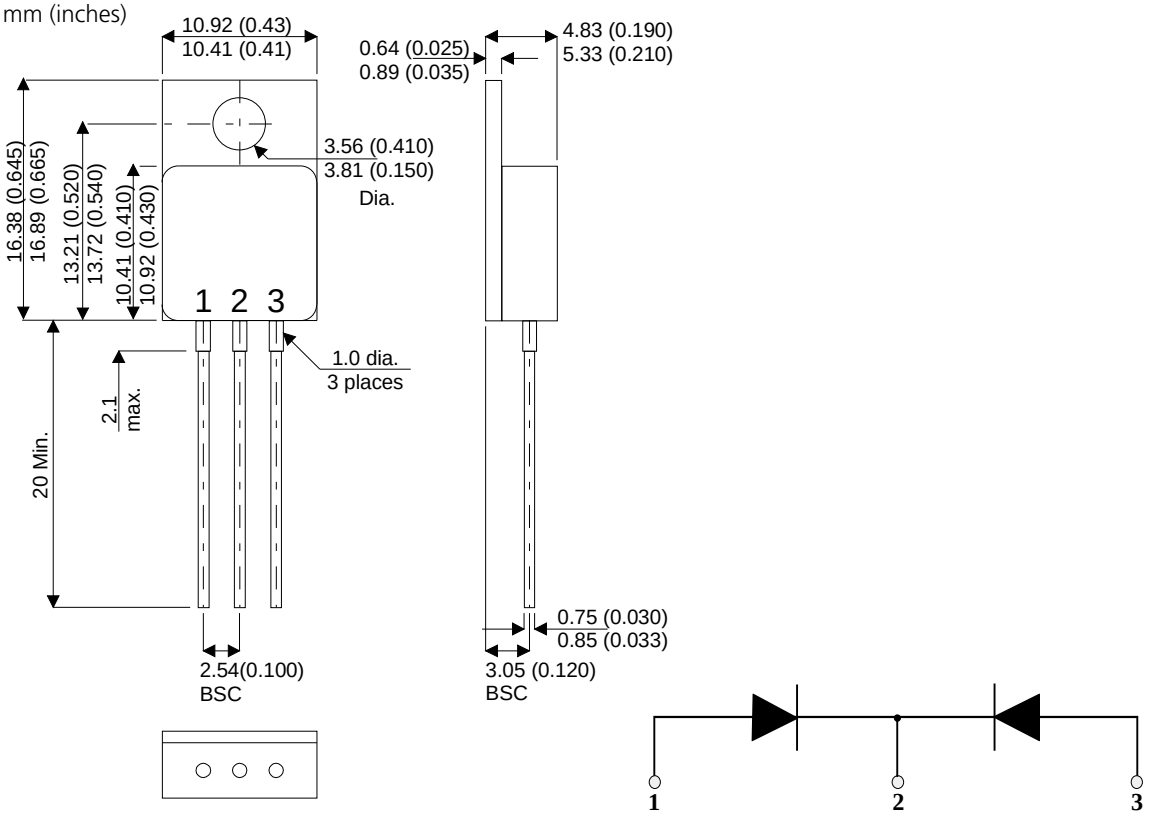
Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
V_F	Forward Voltage	I_F = 10A		1.5	1.8	V
		T_J = 175°C		2.0	2.4	
I_R	Reverse Current	V_R = 600V		10	50	µA
		T_J = 175°C		20	200	

Dynamic Characteristics

Q_C	Total Capacitive Charge	V_R = 600V, I_F = 10A δi/δt = 500A/µs		25		nC
C	Total Capacitance	V_R = 1.0V, f = 1.0MHz		480		pF
		V_R = 200V, f = 1.0MHz		50		
		V_R = 400V, f = 1.0MHz		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