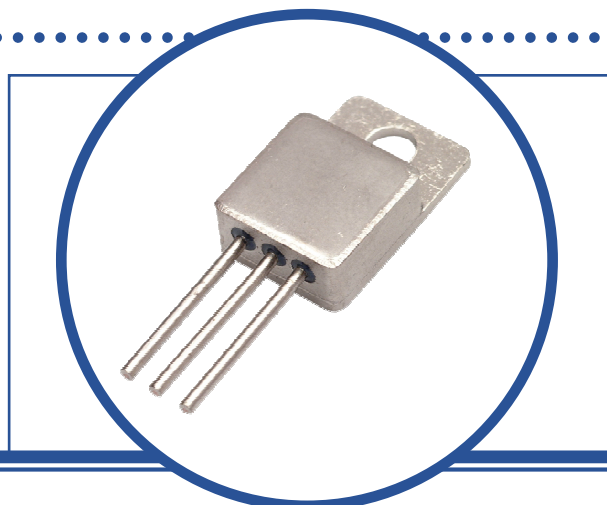


SILICON CARBIDE SCHOTTKY DIODE

SML20SIC06M

- $V_{R(max)} = 600V$
- $I_{F(avg)} = 20A$
- $V_{F(typ)} = 1.5V$
- Hermetic TO220 Metal Package
- No Reverse Recovery
- No Forward Recovery
- High Reliability Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ C$ unless otherwise stated)

V_{RRM}	Peak Repetitive Reverse Voltage	600V
V_{RSM}	Surge Peak Reverse Voltage	600V
$I_{F(AVG)}$	Average Forward Current @ $T_J = 87^\circ C$	20A
I_{FSM}	Surge Non Repetitive Forward Current	500A
I_{FRM}	Repetitive Peak Forward Current	86A
I_{FMAX}	Non-Repetitive Peak Forward Current	50A
P_D	Total Power Dissipation at $T_C = 25^\circ C$ Derate Above $T_C = 25^\circ C$	75W 0.5W/ $^\circ C$
T_J	Junction Temperature Range	-55 to +175 $^\circ C$
T_{stg}	Storage Temperature Range	-55 to +175 $^\circ C$

THERMAL PROPERTIES

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

Semelab Limited 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.

SILICON CARBIDE SCHOTTKY DIODE

SML20SIC06M

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

Symbol	Parameters	Test Conditions	Min.	Typ.	Max.	Unit
V _F ⁽¹⁾	Diode Forward Voltage	I _F = 10A T _J = 25°C		1.6	1.8	V
		I _F = 10A T _J = 175°C		2.5	3.0	
I _R	Leakage Current	V _R = 600V T _J = 25°C		50	200	μA
		V _R = 600V T _J = 175°C		100	1000	

DYNAMIC CHARACTERISTICS

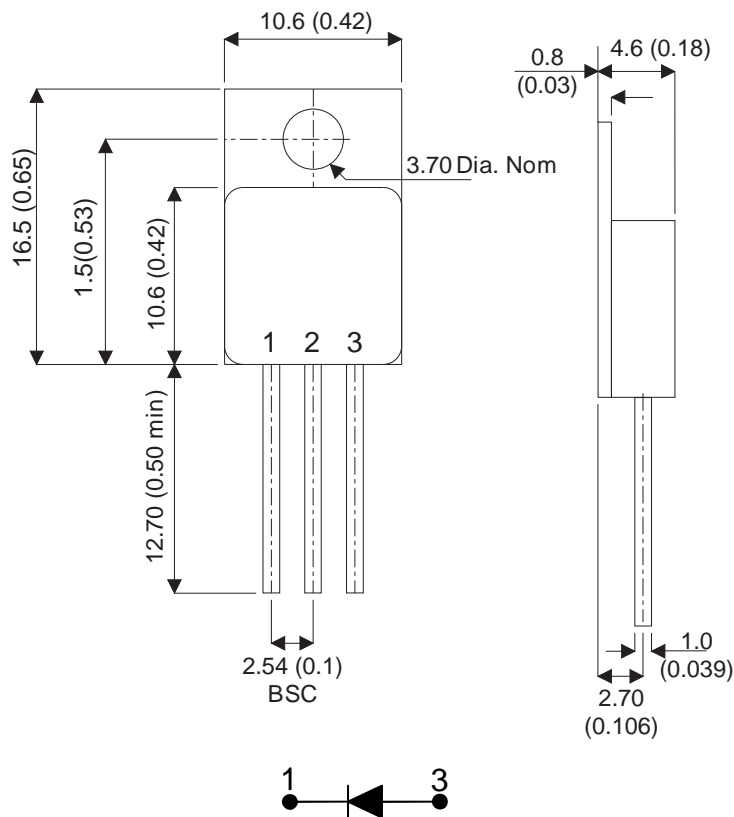
Q _C	Total Capacitive Charge	V _R = 600V I _F = 10A d _i /d _t = 500A/μs T _J = 25°C		28		nC
C _T	Junction Capacitance (f = 1.0MHz)	V _R = 0V T _J = 25°C		550		pF
		V _R = 200V T _J = 25°C		65		
		V _R = 400V T _J = 25°C		50		

Notes

(1) Pulse Width ≤ 300us, δ ≤ 2%

MECHANICAL DATA

Dimensions in mm (inches)



TO220M (TO-257AB) METAL PACKAGE

Underside View

PIN 1 - Cathode

PIN 2 - N/C

PIN 3 - Anode