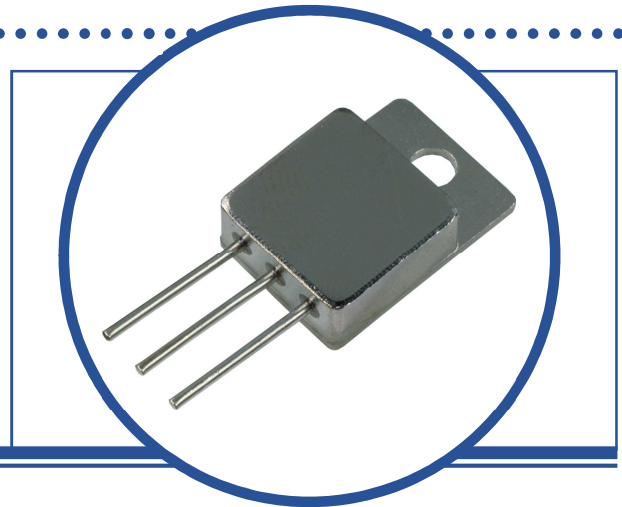


600V SiC COMMON ANODE SCHOTTKY DIODE

SML10SIC06M3A

- High Temperature Operation $T_j = 200^\circ\text{C}$
- Common Anode Configuration
- High Rel and Space Screening Options Available
- Suitable for Down Hole Applications.



DIODE ABSOLUTE MAXIMUM RATINGS

($T_{\text{case}} = 25^\circ\text{C}$ unless otherwise stated)

V_{RRM}	Repetitive Peak Reverse Voltage	600V
V_{RSM}	Surge Peak Reverse Voltage	600V
V_{DC}	DC Blocking Voltage	600V
$I_{\text{F(AVG)}}$	Maximum Average Forward Current	10A
I_{FRM}	Repetitive Peak Forward Surge Current ⁽¹⁾	45A
T_j	Operating Temperature	-55 to +225 °C
T_{Jstg}	Storage Temperature	-55 to +225 °C

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_{\text{F}}^{(1)}$	Forward Voltage	$I_{\text{F}} = 10\text{A}$ $T_{\text{C}} = 175^\circ\text{C}$		1.6	1.8	V
				2.0	2.5	
I_{R}	Reverse Current	$V_{\text{R}} = V_{\text{RRM}}$ $T_{\text{C}} = 175^\circ\text{C}$		10	100	μA
					1000	

DYNAMIC CHARACTERISTICS

Q_{C}	Total Capacitive Charge	$I_{\text{F}} = 10\text{A}$ $di/dt = 500\text{A}/\mu\text{s}$	$V_{\text{R}} = 600\text{V}$ $T_j = 25^\circ\text{C}$		32	nC
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Notes:

1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

THERMAL PROPERTIES

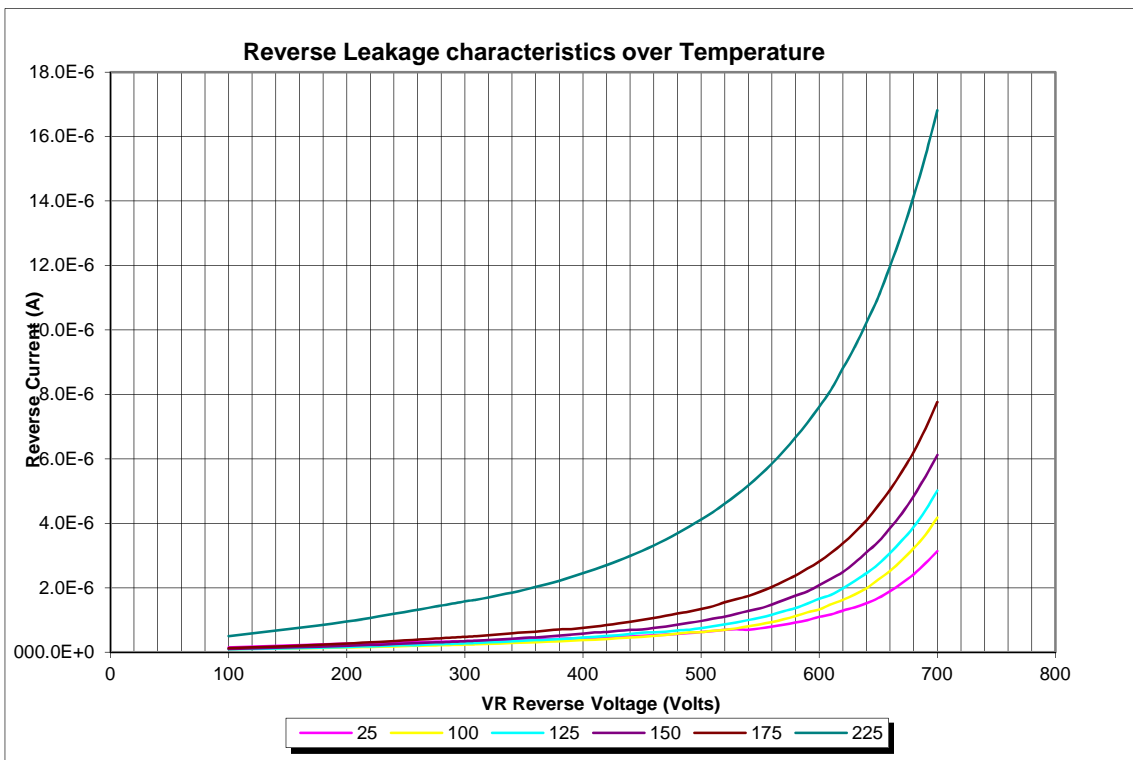
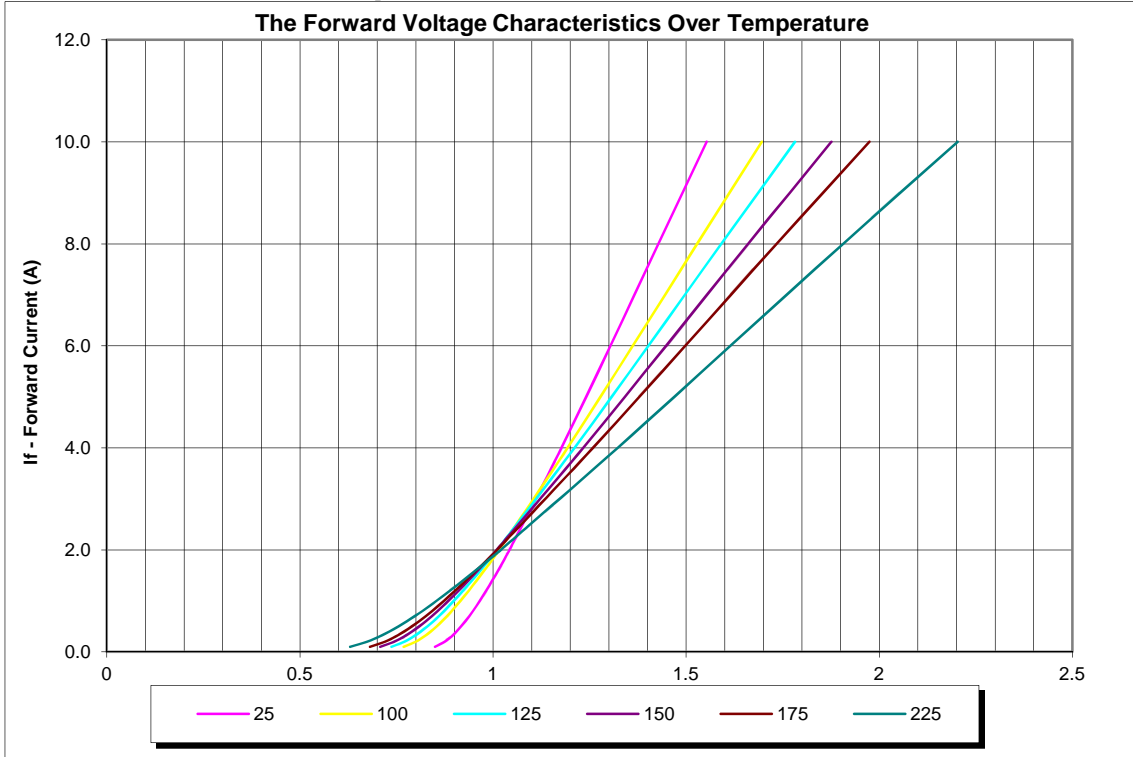
Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta\text{JC}}$	Thermal Resistance, Junction To Case, $T_{\text{C}} = 25^\circ\text{C}$			4.5	$^\circ\text{C}/\text{W}$

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.



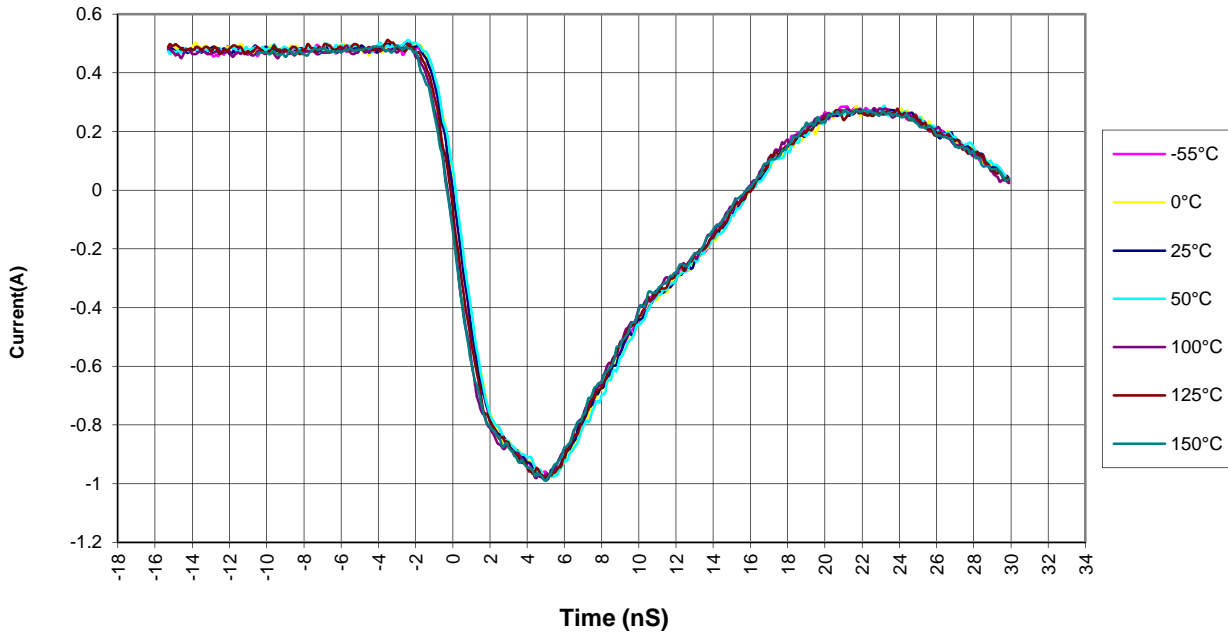
600V SiC COMMON ANODE SCHOTTKY DIODE SML10SIC06M3A

Typical Performance Over Temperature



600V SiC COMMON ANODE SCHOTTKY DIODE SML10SIC06M3A

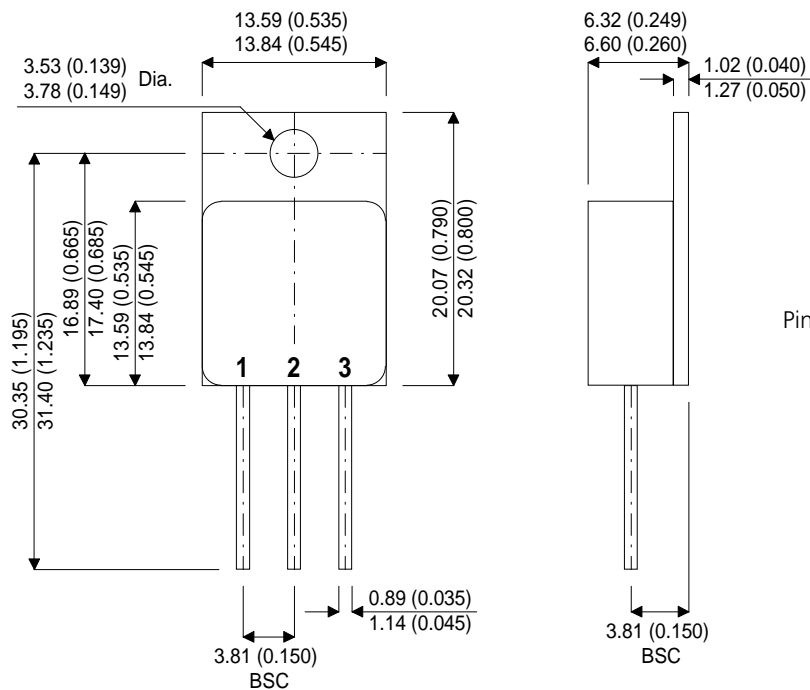
Equivalent Reverse Recovery Time
 $I_F=500\text{mA}$, $I_R = 1\text{A}$, $I_{RR}=250\text{mA}$



SiC Schottky Diode, no minority carrier recombination thus zero reverse recovery. Recovery time shown is due to a small junction capacitance charge and is independent of junction temperature.

MECHANICAL DATA

Dimensions in mm (inches)



TO-254AA

Pin 1 – Cathode 1 Pin 2 - Anode Pin 3 – Cathode 2

