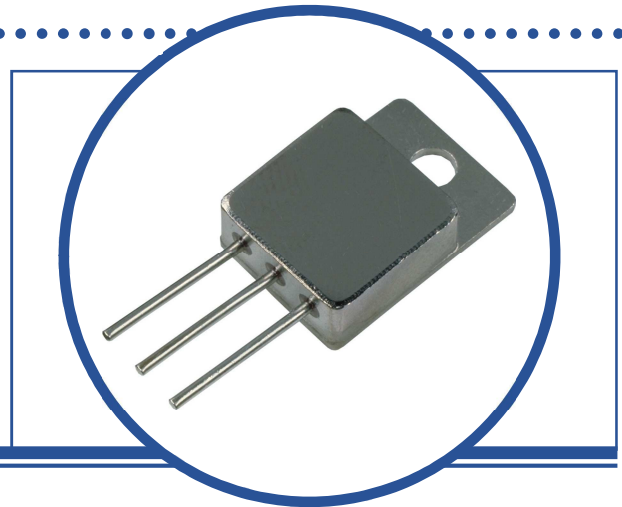


600V SiC COMMON CATHODE SCHOTTKY DIODE

SML10SIC06M3M

- High Temperature Operation $T_j = 200^\circ\text{C}$
- Common Cathode 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 +200 °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, $T_{\text{C}} = 25^\circ\text{C}$	TBD	TBD	TBD	$^\circ\text{C}/\text{W}$

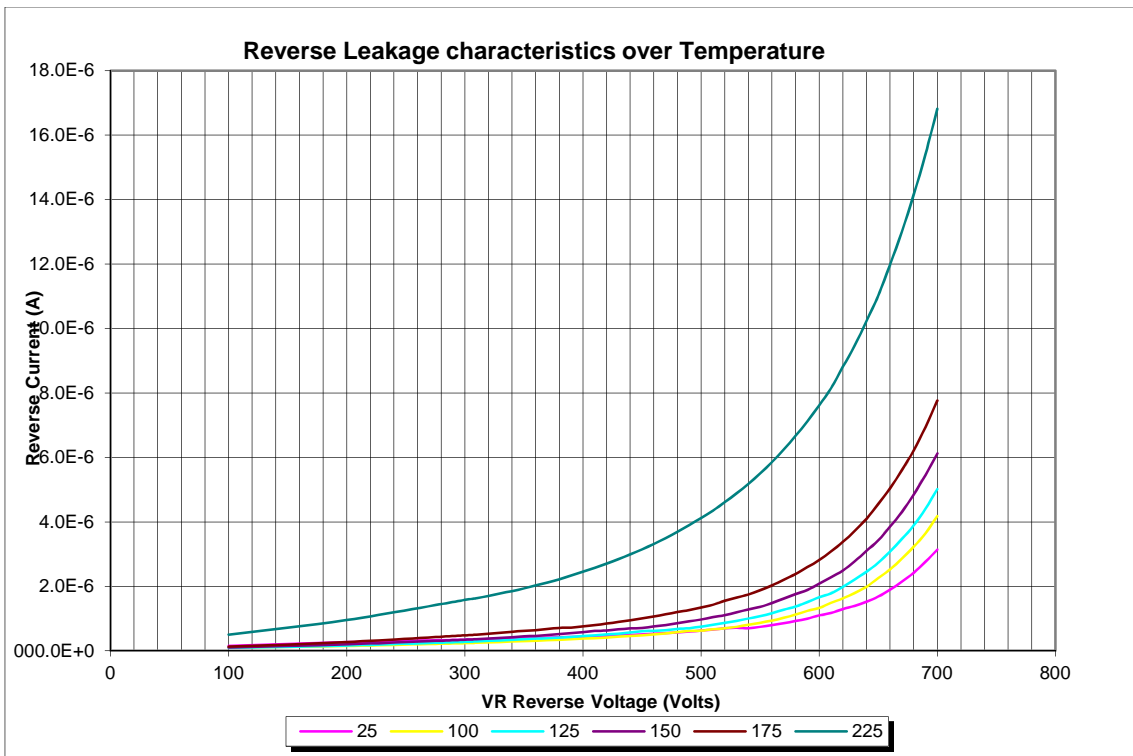
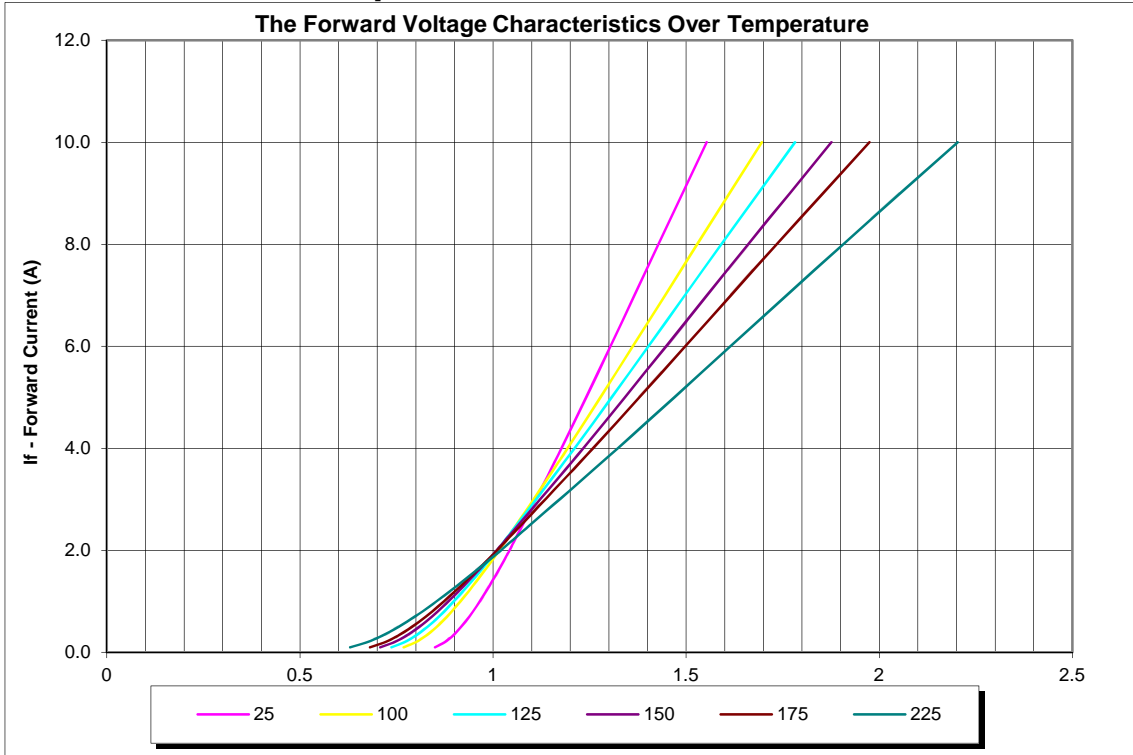
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600V SiC COMMON CATHODE SCHOTTKY DIODE

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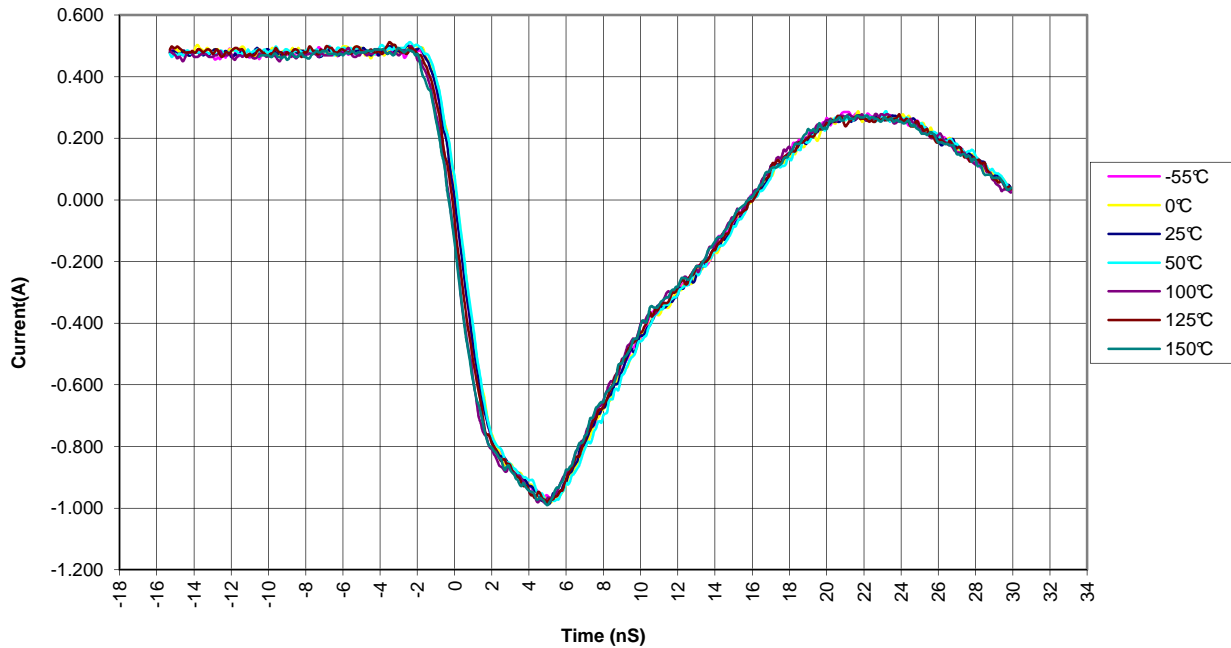
Typical Performance Over Temperature



600V SiC COMMON CATHODE SCHOTTKY DIODE

SML10SIC06M3M

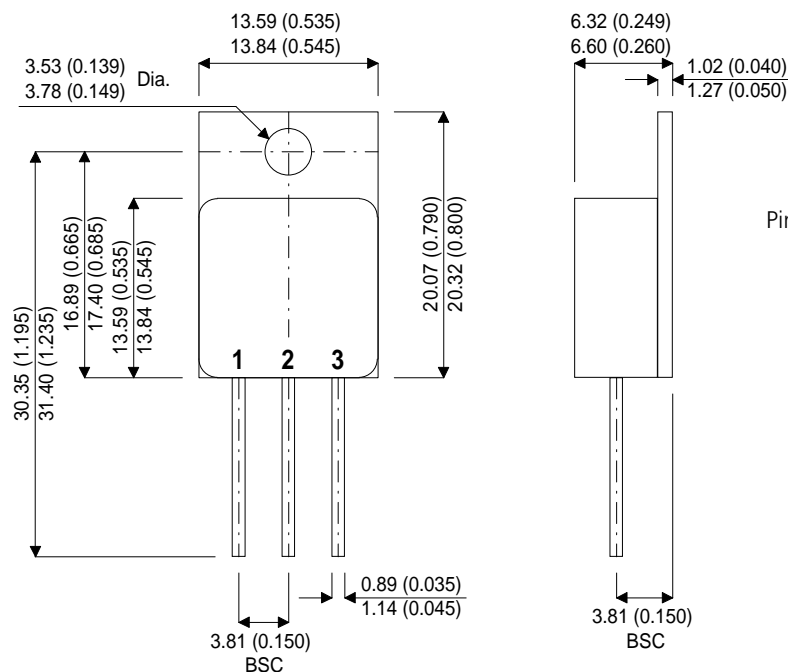
Equivalent Reverse Recovery Time
 $I_F=500\text{mA}$, $I_R = 1\text{A}$, $I_{RR}=250\text{mA}$



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 – Anode1 Pin 2 – Cathode Pin 3 – Anode 2

