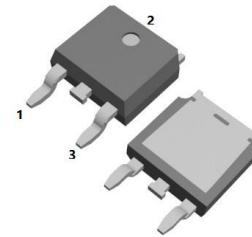


**SMDM02C120K****Automotive 1200V,2A,Silicon Carbide Power Schottky Diode****FEATURE**

- . 1200V Schottky Diode,100% avalanche tested*
- . Zero Reverse Recovery/Zero Forward Recovery
- . High Efficiency Operation
- . Extremely Fast Switching
- . Temperature Independent Switching Behavior
- . AEC-Q101 qualified

TYPICAL APPLICATIONS

- . Switch mode power supply
- . Power factor correction Solar Invertor
- . Solar inverter
- . Uninterruptible power supply



TO-252-2L



*20% rating current,5 mH inductance.

MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	1200	V
DC blocking Voltage	V_{DC}	1200	V
Maximum Average Forward Rectified Current at $T_C=150^{\circ}\text{C}$	$I_{F(AV)}$	2	A
Non-Repetitive Peak Forward Surge Current $T_C=25^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse	I_{FSM}	15	A
Total power dissipation $T_C=25^{\circ}\text{C}$	P_D	53	W
Operation Junction Temperature and Storage Temperature	T_J, T_{STG}	-40 to +175	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter		Symbol	Typ	Max	Unit
Forward voltage	$I_F=2\text{A}, T_J=25^{\circ}\text{C}$	V_F	1.5	1.75	V
	$I_F=2\text{A}, T_J=175^{\circ}\text{C}$		2.1		
Reverse current	$V_R=1200\text{V}, T_J=25^{\circ}\text{C}$	I_R	0.3	20	μA
	$V_R=1200\text{V}, T_J=175^{\circ}\text{C}$		15		
Total capacitive charge	$V_R=800\text{V}$	Q_C	9.4	---	nC
Total capacitance	$V_R=0\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHZ}$	C	139	---	pF
	$V_R=400\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHZ}$		9.5	---	
	$V_R=800\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHZ}$		7	---	

THERMAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Typ	Max	Unit
Typical Thermal Resistance Junction to Case	R_{JC}	2.8	----	$^{\circ}\text{C}/\text{W}$



Typical Characteristics

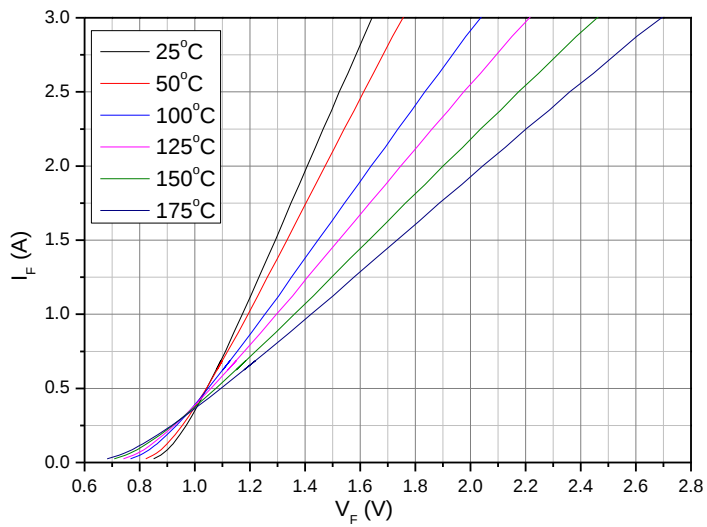


Figure 1. Forward Characteristics

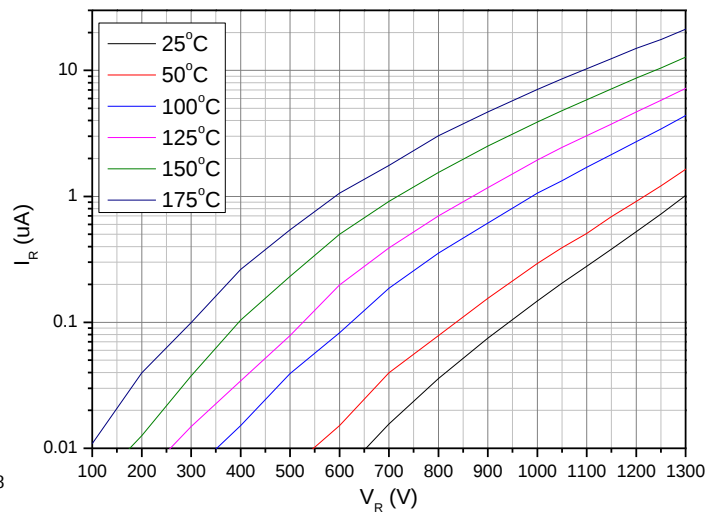


Figure 2. Reverse Characteristics

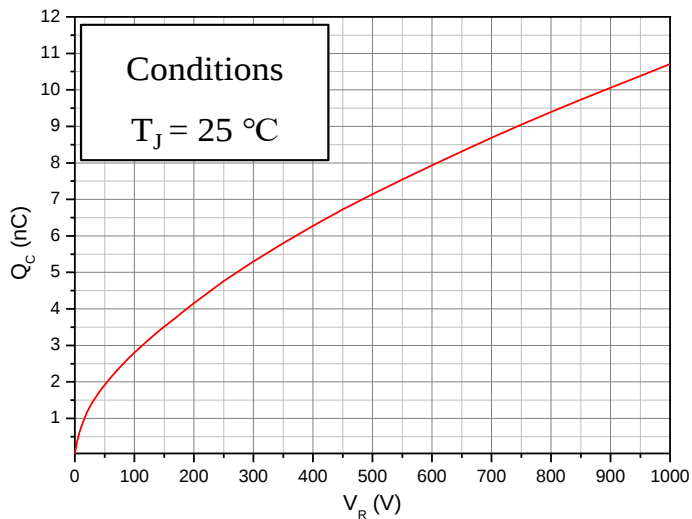


Figure 3. Total Capacitance Charge vs. Reverse Voltage

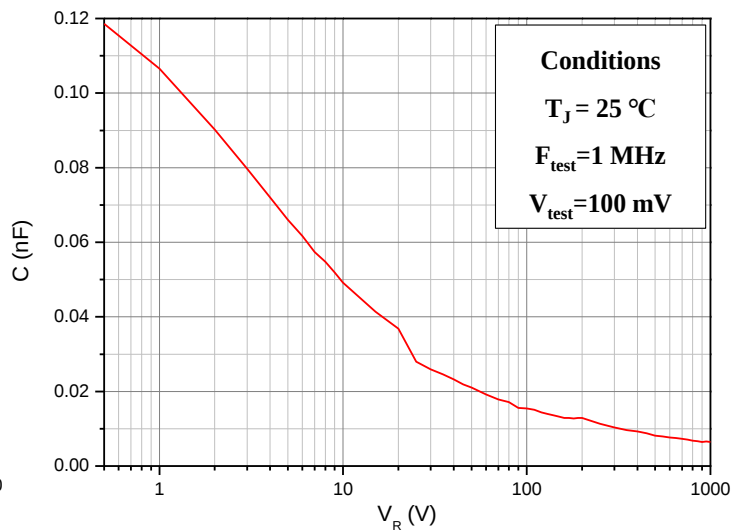
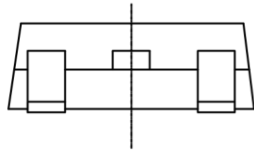
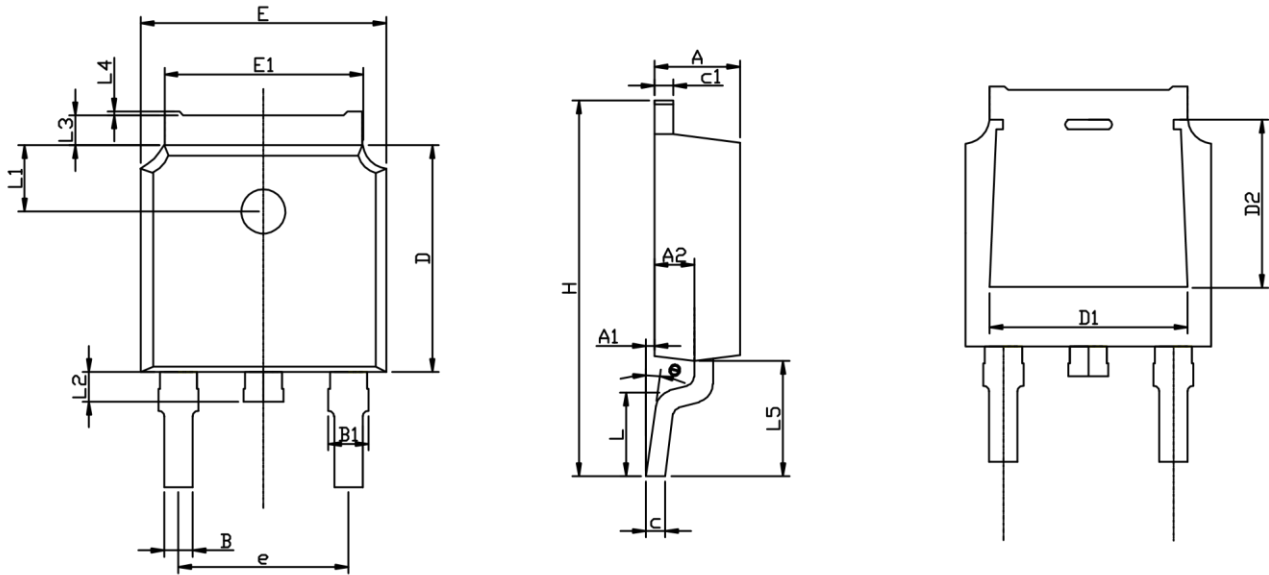


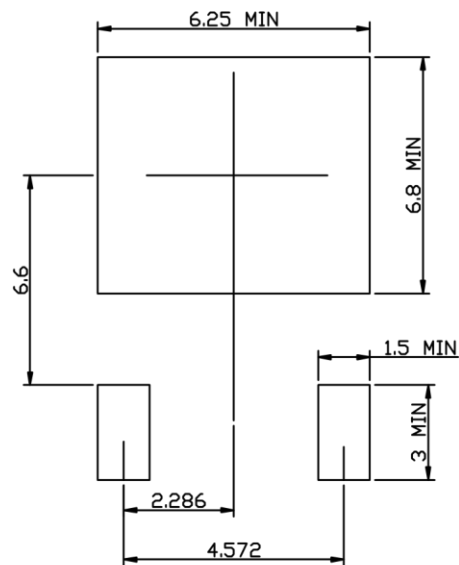
Figure 4. Capacitance vs. Reverse Voltage



TO-252-2L PACKAGE OUTLINE



RECOMMENDED LAND PATTERN



	MIN	NOM	MAX
A	2.15	2.30	2.45
A1	0.05	0.10	0.20
A2	0.91	1.07	1.22
B	0.66	0.76	0.86
B1	0.93	1.08	1.23
C	0.40	0.50	0.60
C1	0.40	0.50	0.60
D	5.95	6.10	6.25
D1	—	4.8REF	—
D2	—	3.8REF	—
E	6.45	6.60	6.75
E1	5.12	5.32	5.52
L		1.65	
L1	1.58	1.78	1.98
L2	0.60	0.80	1.00
L3	0.70	0.85	1.00
L4	0.00	0.05	0.20
L5	2.80	3.10	3.40
H	9.80	10.10	10.40
Θ	0°		8°
e		4.572REF	

UNIT: mm