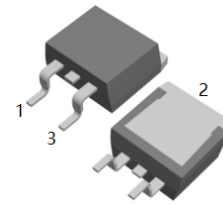


**SMDV25C120K****Automotive 1200V,25A,Silicon Carbide Power Schottky Diode****FEATURE**

- . 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-263-2L



*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 $T_C=150^{\circ}\text{C}$	$I_{F(AV)}$	25	A
Non-Repetitive Peak Forward Surge Current $T_C=25^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse	I_{FSM}	140	A
Total power dissipation $T_C=25^{\circ}\text{C}$	P_D	150	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	$I_F=25\text{A}, T_J=25^{\circ}\text{C}$	V_F	1.5	1.75	V
	$I_F=25\text{A}, T_J=175^{\circ}\text{C}$		2.2		
Reverse current	$V_R=1200\text{V}, T_J=25^{\circ}\text{C}$	I_R	1.75	110	μA
	$V_R=1200\text{V}, T_J=175^{\circ}\text{C}$		10		
Total capacitive charge	$V_R=800\text{V}$	Q_C	102.3	---	nC
Total capacitance	$V_R=0\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$	C	1442	---	pF
	$V_R=400\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$		97	---	
	$V_R=800\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$		74	---	

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

Parameter	Symbol	Typ	Max	Unit
Typical Thermal Resistance Junction to Case	R_{JC}	1.0	----	$^{\circ}\text{C/W}$



Typical Characteristics

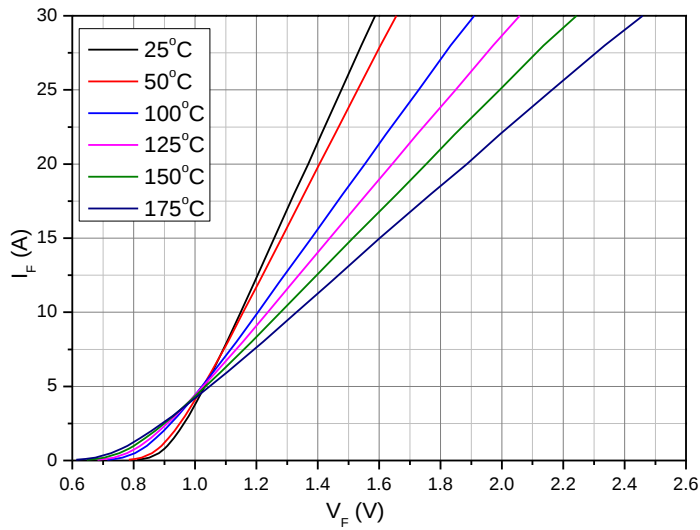


Figure 1. Forward Characteristics

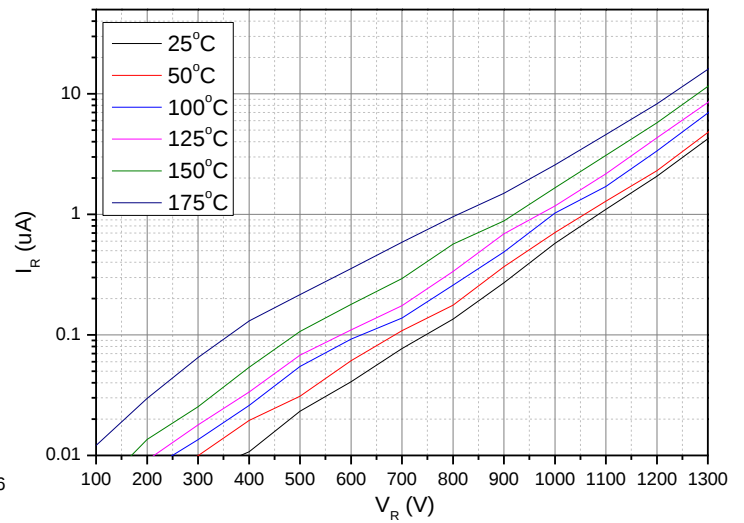


Figure 2. Reverse Characteristics

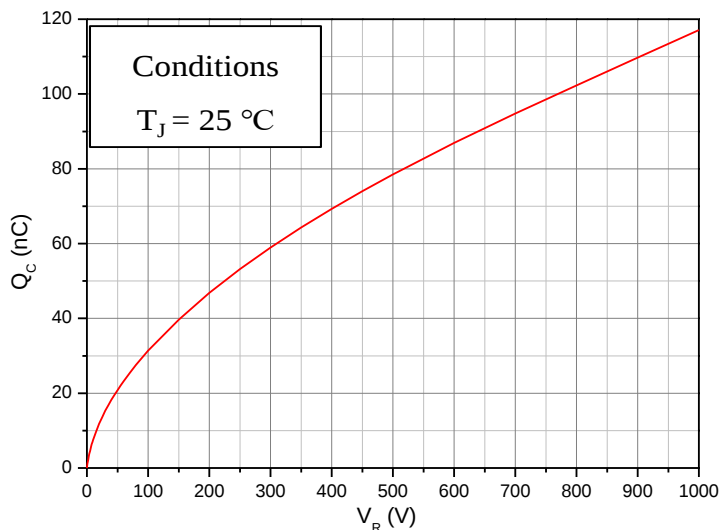


Figure 3. Total Capacitance Charge vs. Reverse Voltage

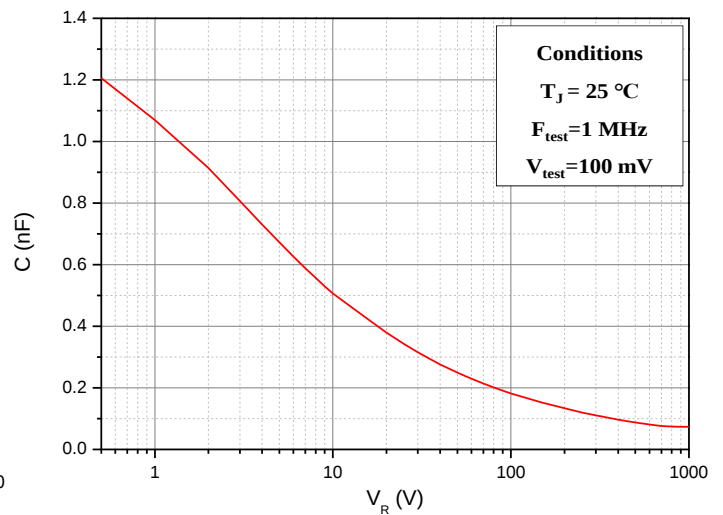
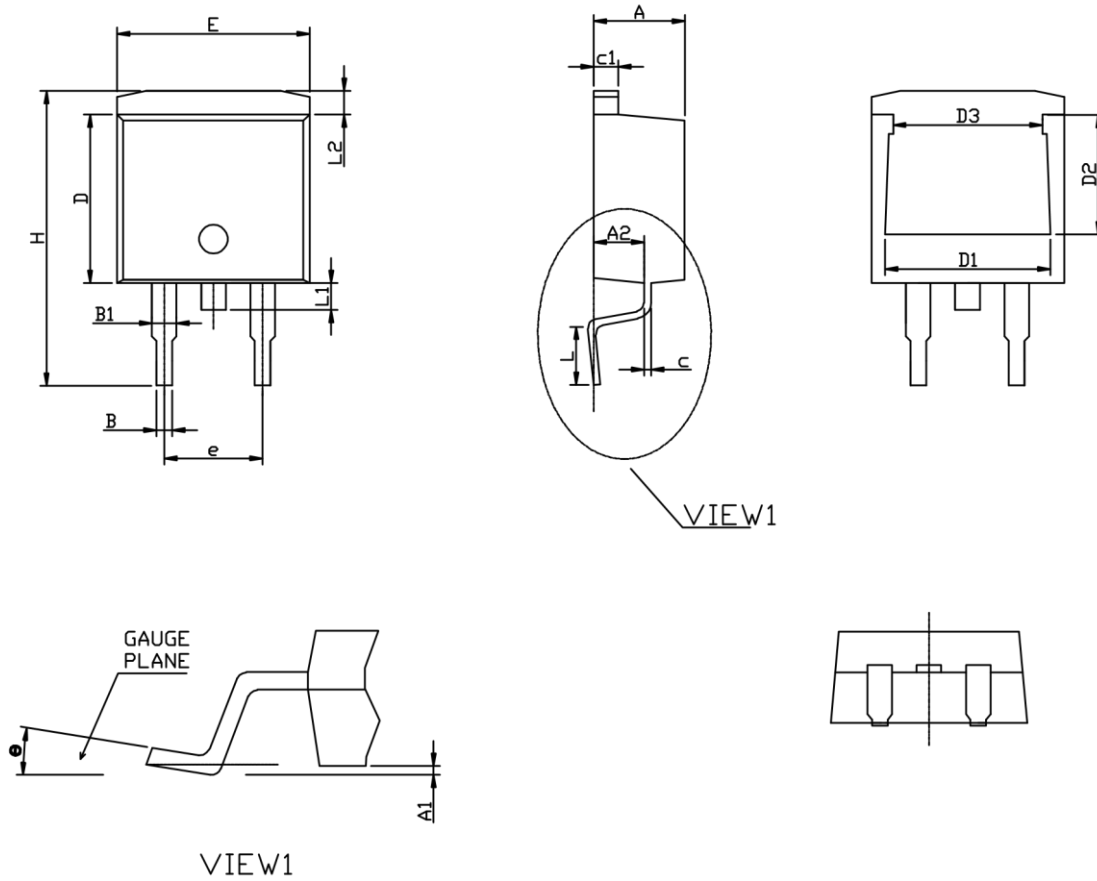


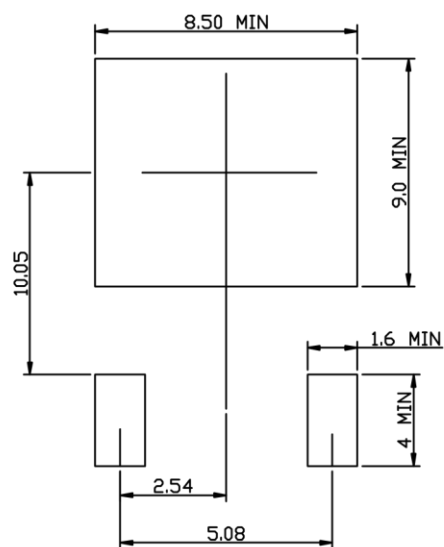
Figure 4. Capacitance vs. Reverse Voltage



TO-263-2L PACKAGE OUTLINE



RECOMMENDED LAND PATTERN



UNIT: mm

	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	0.05	0.15	0.30
A2	2.45	2.60	2.70
B	0.72	0.82	0.92
B1	1.12	1.27	1.42
c	0.28	0.38	0.48
c1	1.17	1.27	1.37
D	8.46	8.66	8.86
D1	7.90	8.10	8.40
D2	5.50	5.70	5.90
D3	7.10	7.30	7.50
E	9.85	10.15	10.45
e		5.08BCS	
H	14.75	15.15	15.55
L	2.30	2.55	2.80
L1	1.20	1.40	1.60
L2	1.01	1.23	1.50
θ	0°	7°	8°