SMDM05C120K

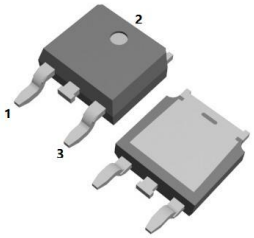
1200V,5A,Silicon Carbide Power Schottky Diode

FEATURE

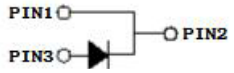
. 1200V Schottky Diode,100% avalanche tested*
. Zero Reverse Recovery/Zero Forward Recovery
. High Efficiency Operation
. Extremely Fast Switching
. Temperature Independent Switching Behavior

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℃ 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°C	$I_{F(AV)}$	5	A
Non-Repetitive Peak Forward Surge Current Tc=25°C,tp=10 ms, Half Sine Pulse	I_{FSM}	60	A
Total power disspation Tc=25°C	P_D	60	W
Operation Junction Temperature and Storage Temperature	T_J, T_{STG}	-40 to +175	℃

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise noted)

Parameter		Symbol	Typ	Max	Unit
Forward voltage	I_F =5A, T_j =25℃	V_F	1.5	1.75	V
	I_F =5A, T_j =175℃		2.2		
Reverse current	V_R =1200V, T_j =25°C	I_R	0.5	20	μA
	V_R =1200V, T_j =175°C		3.5		
Total capacitive charge	V_R =800V	Q_C	25.8	——	nC
Total capacitance	V_R =0V, T_j =25℃, f=1MHZ	C	302	——	pF
	V_R =400V, T_j =25℃, f=1MHZ		26	——	
	V_R =800V, T_j =25℃, f=1MHZ		21	——	

THERMAL CHARACTERISTICS (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Typ	Max	Unit
Typical Thermal Resistance Junction to Case	$R_{(JC)}$	2.5	----	℃/W

Typical Characteristics

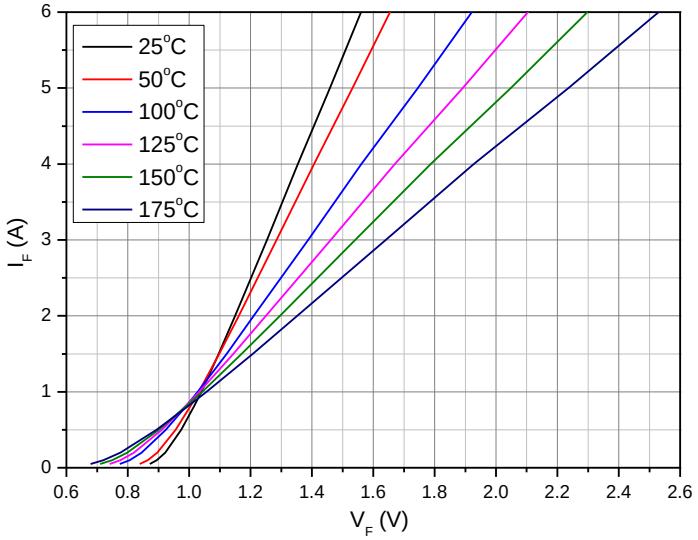


Figure 1. Forward Characteristics

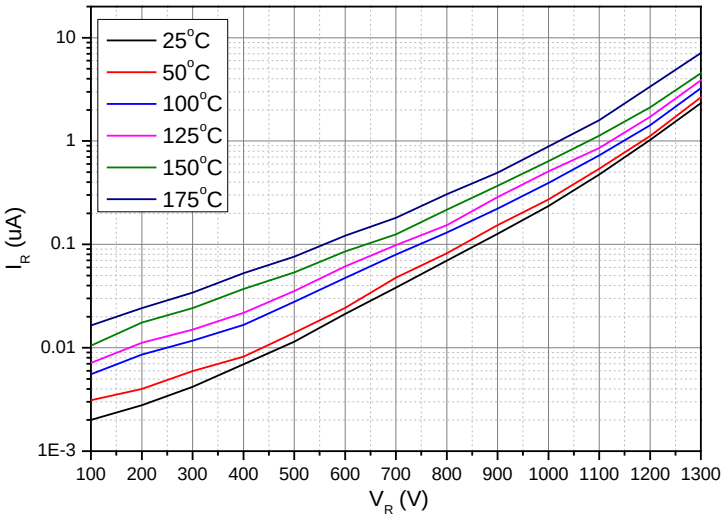


Figure 2. Reverse Characteristics

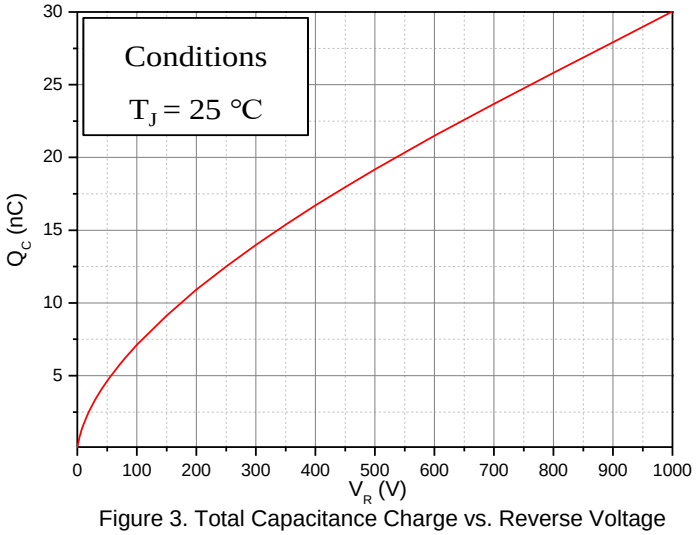


Figure 3. Total Capacitance Charge vs. Reverse Voltage

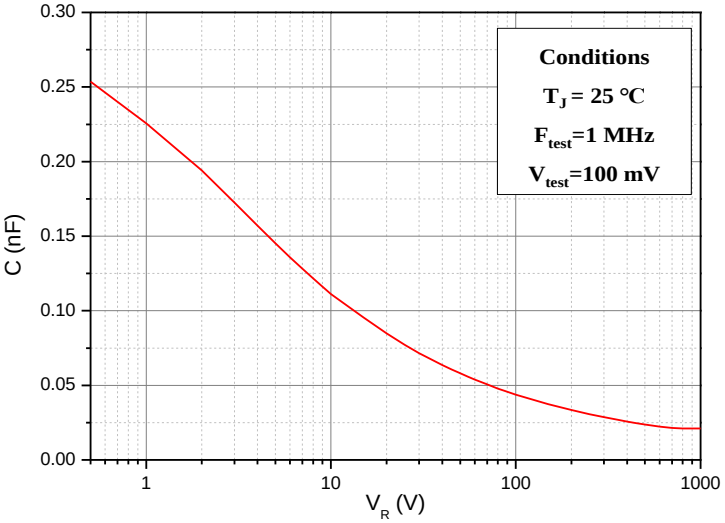
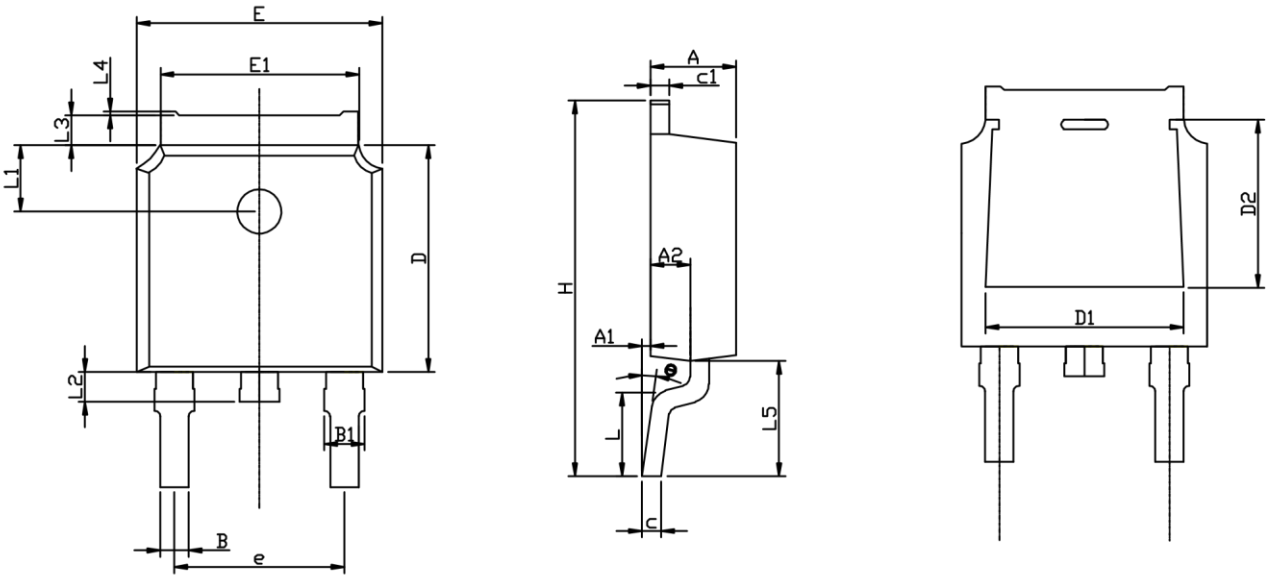
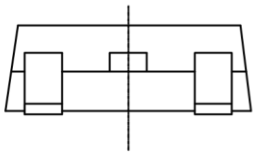


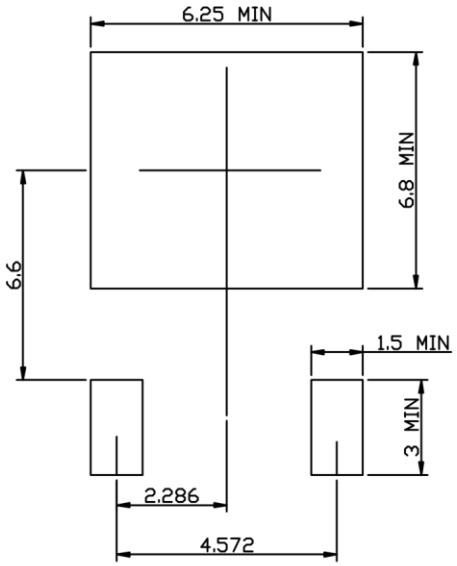
Figure 4. Capacitance vs. Reverse Voltage

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