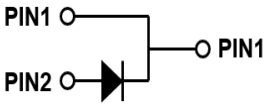
SMDU50C120K

Automotive 1200V,50A,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

TO-247-2L



TYPICAL APPLICATIONS

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

*20% rating current,5 mH inductance.

MAXIMUM RATINGS (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	1200	V
DC peak blocking Voltage	V_{DC}	1200	V
Maximum Average Forward Rectified Current at T_C =150°C	$I_{F(AV)}$	50	A
Non-Repetitive Peak Forward Surge Current Tc=25°C,tp=10 ms, Half Sine Pulse	I_{FSM}	280	A
Total power disspation Tc=25°C	P_D	428	W
Operation Junction Temperature and Storage Temperature	T_J, T_{STG}	-40 to +175	°C

ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise noted)

Parameter		Symbol	Min	Typ	Max	Units
DC blocking voltage	I_R = 250μA, T_j= 25 °C	V_{DC}	1200			V
Forward voltage	I_F =50A, T_j =25℃	V_F		1.50	1.75	V
	I_F =50A, T_j =175℃			2.3		
Reverse current	V_R =1200V, T_j =25°C	I_R		10	180	μA
	V_R =1200V, T_j =175°C			130		
Total capacitive charge	VR = 800V	Qc		206	——	nC
Total capacitance	V_R =0V, T_j =25℃, f=1MHZ	C		3058	——	pF
	V_R=400V,T_j=25℃, f=1MHZ			194	——	
	V_R=800V,T_j=25℃, f=1MHZ			146	——	

THERMAL CHARACTERISTICS (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Typ	Max	Units
Typical Thermal Resistance Junction to Case	$R_{(JC)}$	0.35	——	℃/W

RATING AND CHARACTERISTIC CURVES

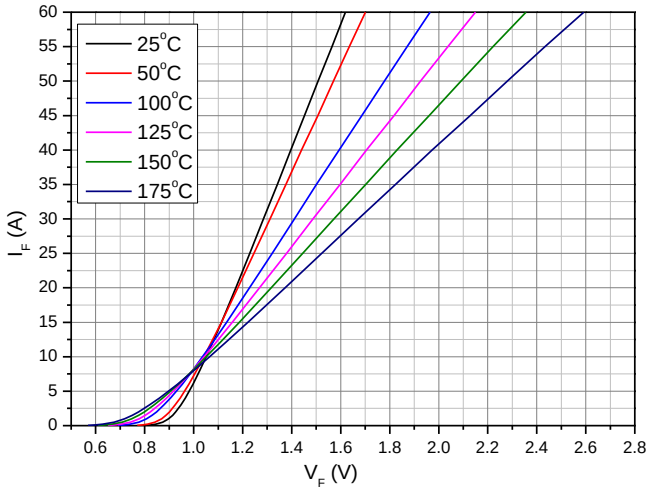


Figure 1. Forward Characteristics

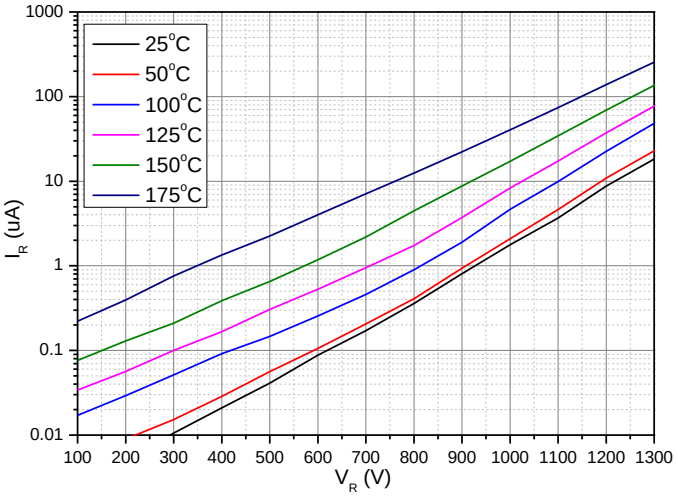


Figure 2. Reverse Characteristics

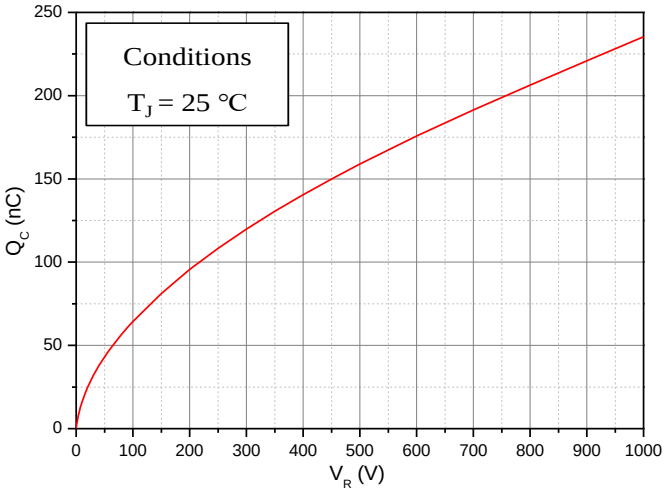


Figure 3. Total Capacitance Charge vs. Reverse Voltage

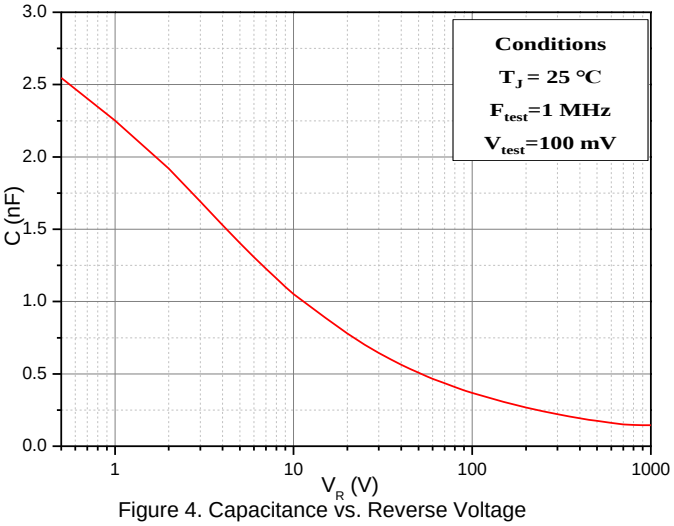
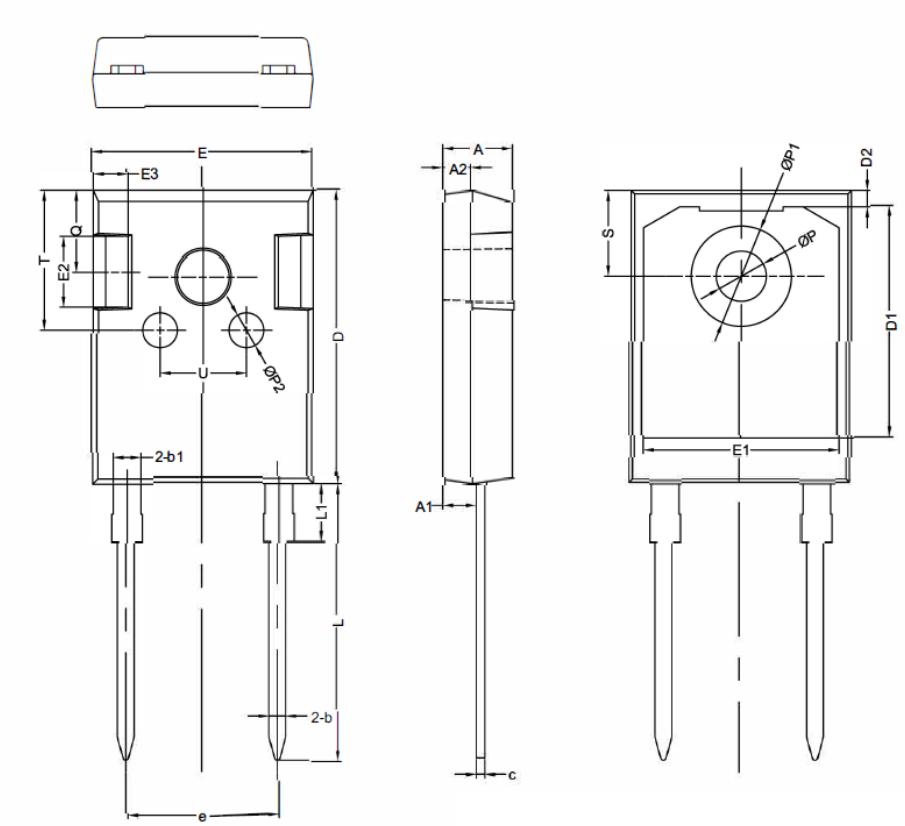


Figure 4. Capacitance vs. Reverse Voltage

TO-247-2L PACKAGE OUTLINE



	MIN	MON	MAX
A	4.80	5.00	5.20
A1	2.21	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.35
b1		2.00	
c	0.55	0.60	0.75
D	20.80	21.00	21.20
D1		16.58	
D2		1.17	
E	15.60	15.80	16.0
E1		14.02	
E2		5.00	
E3		2.50	
e		10.88	
L	19.42	19.92	20.42
L1		4.13	
P	3.50	3.60	3.70
P1		7.19	
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	