

**SMDU30C120K****1200V,30A,Silicon Carbide Power Schottky Diode****FEATURE**

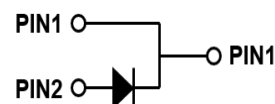
- . 1200V Schottky Diode,100% avalanche tested*
- . Zero Reverse Recovery/Zero Forward Recovery
- . High Efficiency Operation
- . Extremely Fast Switching
- . Temperature Independent Switching Behavior

TYPICAL APPLICATIONS

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



TO-247-2L



*20% rating current,5 mH inductance.

MAXIMUM RATINGS ($T_C=25^\circ\text{C}$ 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 $T_C = 150^\circ\text{C}$	$I_{F(AV)}$	30	A
Non-Repetitive Peak Forward Surge Current $T_C=25^\circ\text{C}$, $t_p=10$ ms, Half Sine Pulse	I_{FSM}	200	A
Total power dissipation $T_C=25^\circ\text{C}$	P_D	241	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	Min	Typ	Max	Units
DC blocking voltage	$I_R = 250\mu\text{A}, T_j = 25^\circ\text{C}$	V_{DC}	1200		V
Forward voltage	$I_F = 30\text{A}, T_j = 25^\circ\text{C}$	V_F	1.5	1.75	V
	$I_F = 30\text{A}, T_j = 175^\circ\text{C}$		2.2		
Reverse current	$V_R = 1200\text{V}, T_j = 25^\circ\text{C}$	I_R	2.0	130	μA
	$V_R = 1200\text{V}, T_j = 175^\circ\text{C}$		40		
Total capacitive charge	$V_R = 800\text{V}$	Q_C	118	---	nC
Total capacitance	$V_R = 0\text{V}, T_j = 25^\circ\text{C}, f = 1\text{MHz}$	C	1794	---	pF
	$V_R = 400\text{V}, T_j = 25^\circ\text{C}, f = 1\text{MHz}$		110	---	
	$V_R = 800\text{V}, T_j = 25^\circ\text{C}, f = 1\text{MHz}$		85	---	

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

Parameter	Symbol	Typ	Max	Units
Typical Thermal Resistance Junction to Case	$R_{(JC)}$	0.6	---	$^\circ\text{C/W}$



RATING AND CHARACTERISTIC CURVES

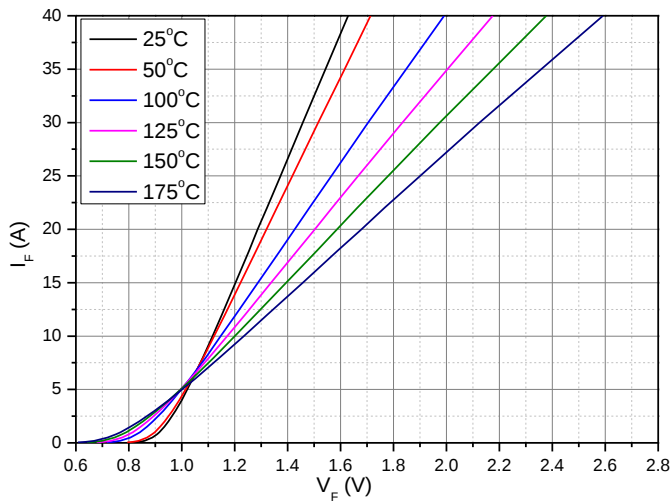


Figure 1. Forward Characteristics

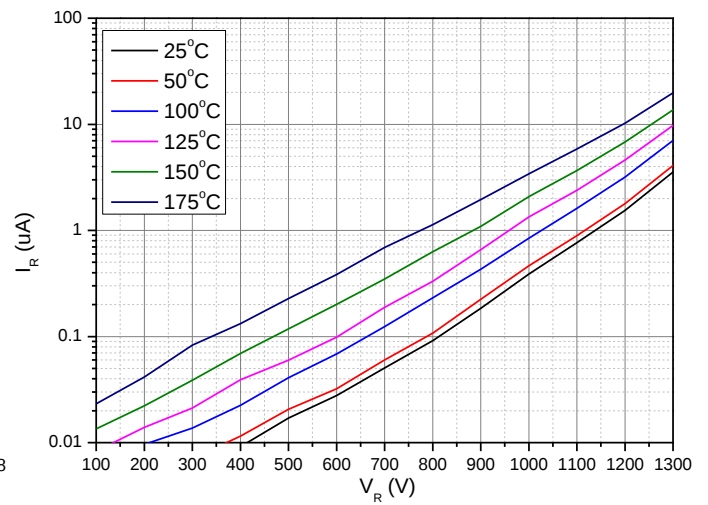


Figure 2. Reverse Characteristics

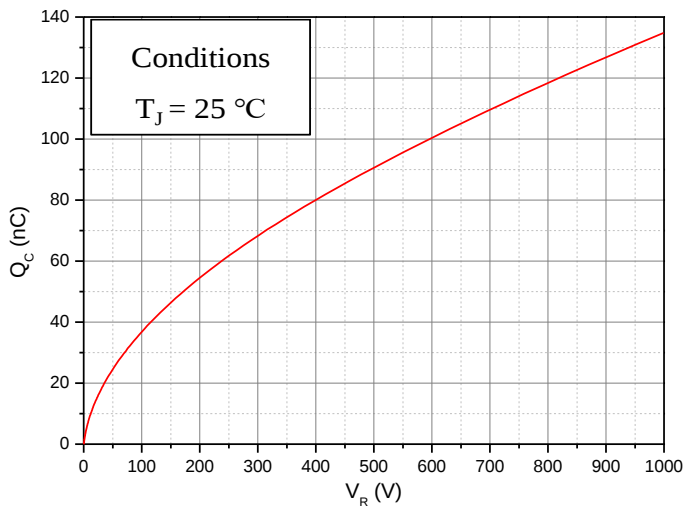


Figure 3. Total Capacitance Charge vs. Reverse Voltage

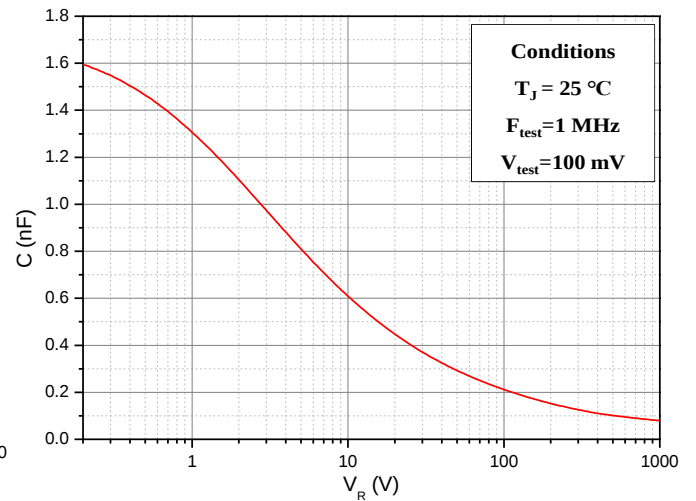
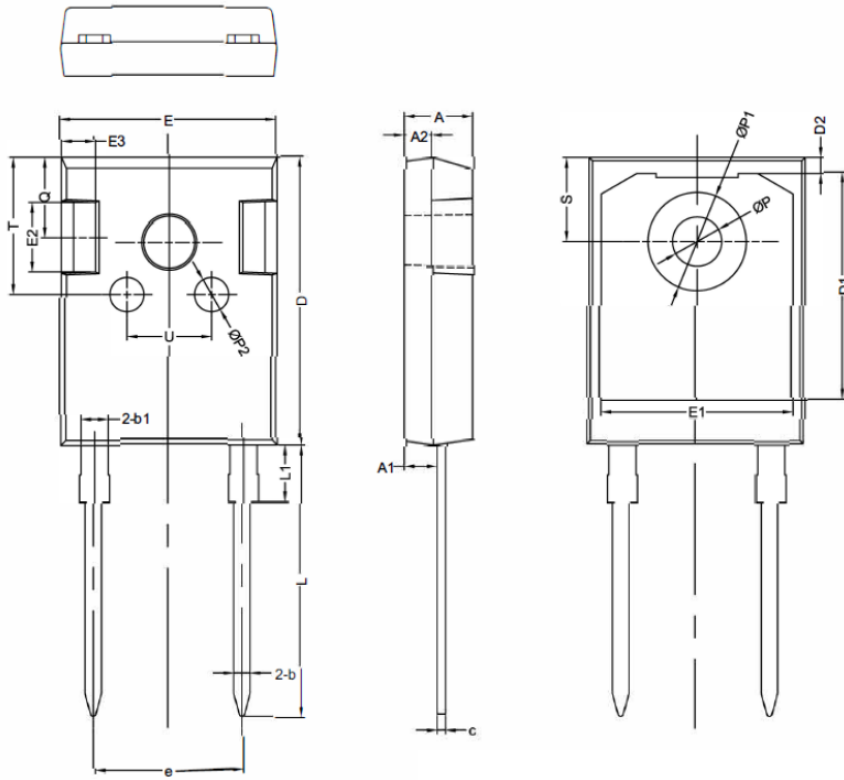


Figure 4. Capacitance vs. Reverse Voltage



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	