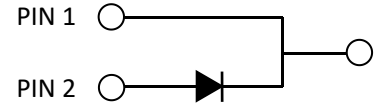


# N0D15120A

## Silicon Carbide Schottky Diode



### Maximum Ratings ( $T_c = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
$V_{RRM}$	Repetitive Peak Reverse Voltage	1200	V		
$V_{RSM}$	Surge Peak Reverse Voltage	1200	V		
$V_{DC}$	DC Blocking Voltage	1200	V		
$I_F$	Continuous Forward Current	16	A	$T_C = 135^\circ\text{C}$	Fig. 7
$I_{FRM}$	Repetitive Peak Forward Surge Current	80	A	$T_C = 25^\circ\text{C}$ , $t_p = 10$ ms, Half Sine Wave,	
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	120	A	$T_C = 25^\circ\text{C}$ , $t_p = 10$ ms, Half Sine Wave,	
$I_{F,Max}$	Non-Repetitive Peak Forward Surge Current	850	A	$T_C = 25^\circ\text{C}$ , $t_p = 10$ $\mu\text{s}$ , Pulse	
$P_{tot}$	Power Dissipation	258 112	W	$T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	Fig. 6
$\int i^2 dt$	$I^2t$ value	72	$\text{A}^2\text{s}$	$T_C = 25^\circ\text{C}$	
$T_J, T_{stg}$	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$		

### Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
$V_F$	Forward Voltage	1.5 2.2	1.8 2.5	V	$I_F = 15$ A $T_J = 25^\circ\text{C}$ $I_F = 15$ A $T_J = 175^\circ\text{C}$	Fig. 1
$I_R$	Reverse Current	10 20	50 100	$\mu\text{A}$	$V_R = 1200$ V $T_J = 25^\circ\text{C}$ $V_R = 1200$ V $T_J = 175^\circ\text{C}$	Fig. 2
$Q_C$	Total Capacitive Charge	78		nC	$V_R = 800$ V, $T_J = 25^\circ\text{C}$ , $Q_C = \int_0^{V_R} C(V)dV$	Fig. 4
C	Total Capacitance	1090 70 53		pF	$V_R = 0$ V, $T_J = 25^\circ\text{C}$ , $f = 1$ MHz $V_R = 400$ V, $T_J = 25^\circ\text{C}$ , $f = 1$ MHz $V_R = 800$ V, $T_J = 25^\circ\text{C}$ , $f = 1$ MHz	Fig. 3
$E_C$	Capacitance Stored Energy	40		$\mu\text{J}$	$V_R = 800$ V	Fig. 5

### Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	0.63	$^\circ\text{C}/\text{W}$	Fig. 8

# Typical Performance

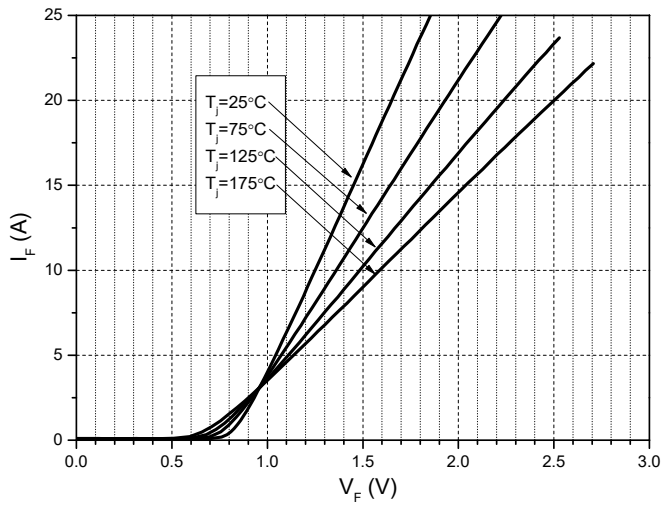
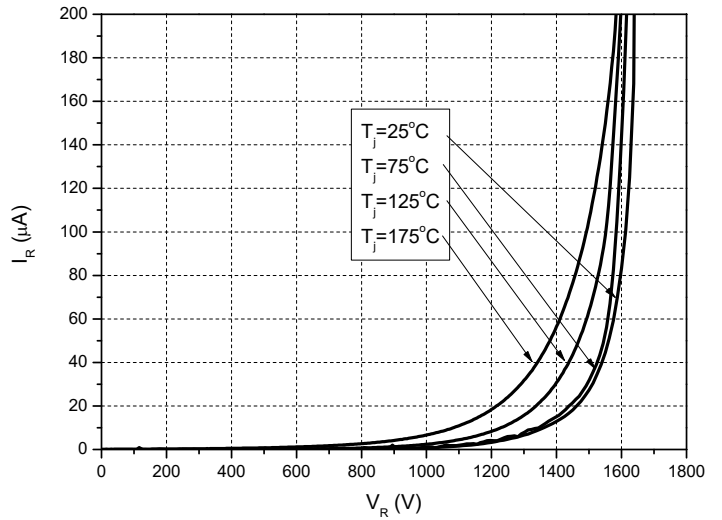


Figure 1. Forward Characteristics



2. Reverse Characteristics

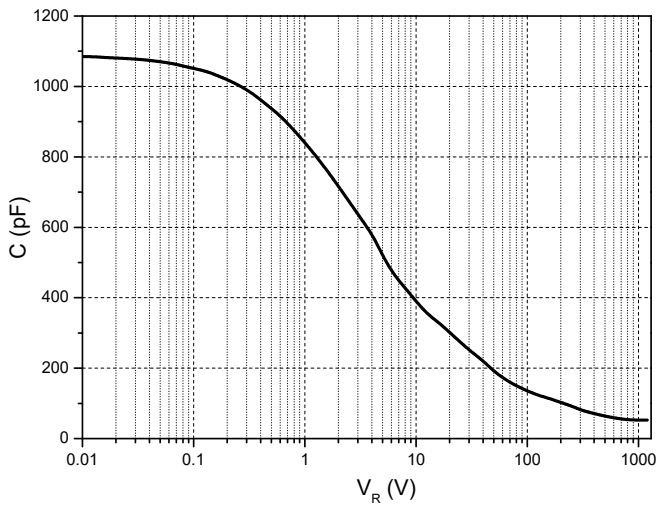


Figure 3. Capacitance vs. Reverse Voltage

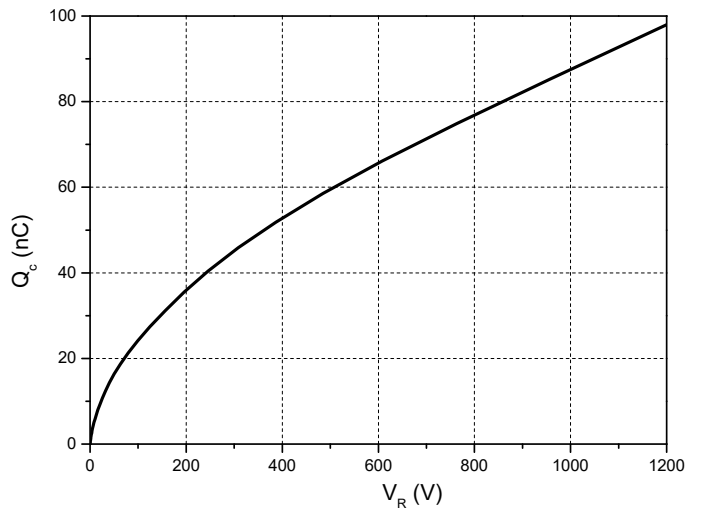


Figure 4. Total Capacitance Charge vs. Reverse Voltage

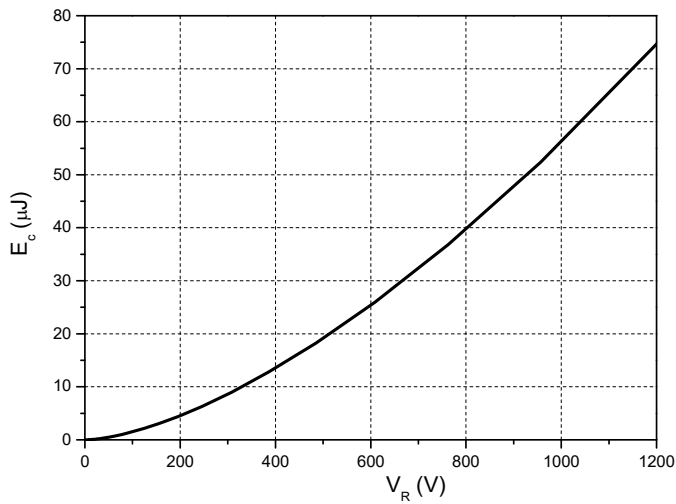


Figure 5. Capacitance Stored Energy

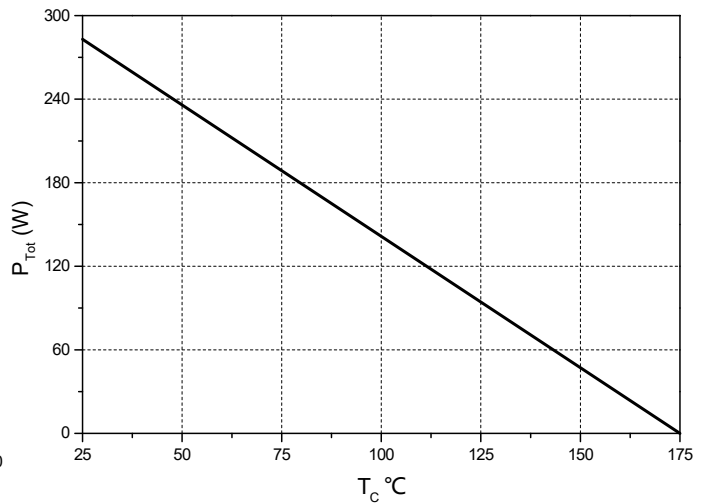


Figure 6. Power Derating

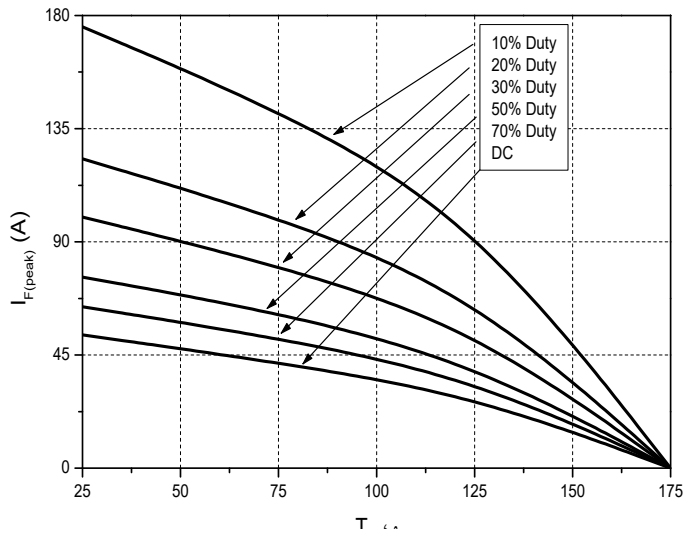


Figure 7. Current Derating

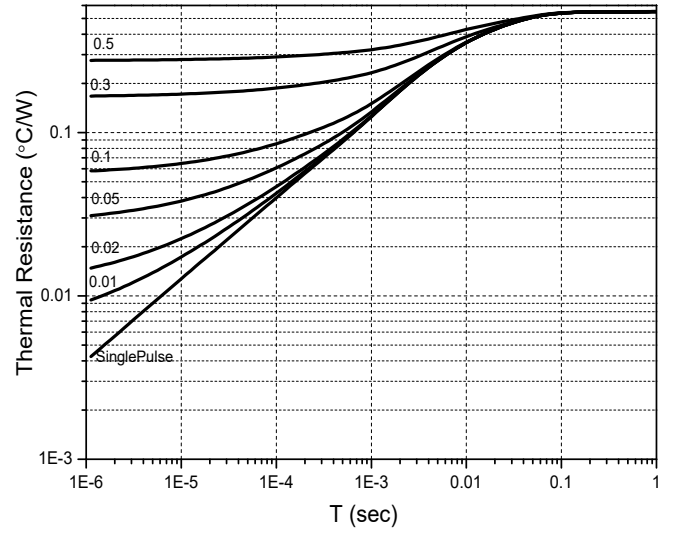
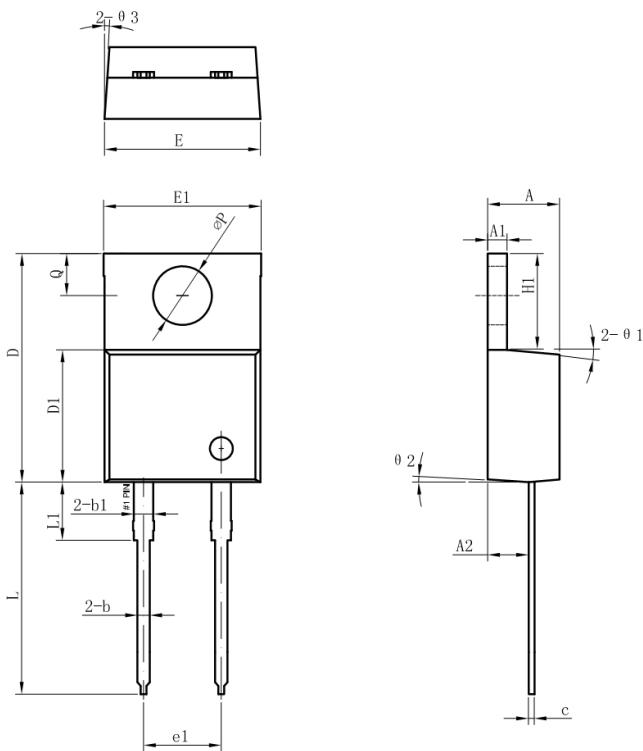


Figure 8. Transient Thermal Impedance

**Package Dimensions:TO-247-2L**



符号	机械尺寸/mm		
	最小值	典型值	最大值
A	4.55	4.70	4.85
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.64	14.94	15.24
D1	8.55	8.70	8.85
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1		5.08	
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1		3.80	
φP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		5°	
θ2		4°	
θ3		4°	