

### Product Summary

$V_{RRM}$	$I_F$	$Q_c$
1200V	20A	116nC

### Feature

- Negligible reverse recovery
- High-speed switching
- Positive Temperature Coefficient
- Temperature-Independent Switching

### Applications

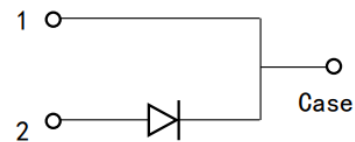
- Switch mode power supply
- Solar inverter
- Data Center
- Uninterruptible power supply

### Package

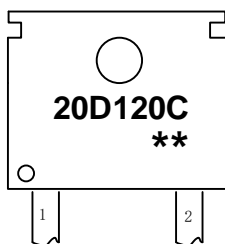


TO-247-2L

### Circuit diagram



### Marking



20D120 =Device Code  
C =SiC product  
\*\* =Week Code

**Absolute maximum ratings (T<sub>c</sub>=25°C, unless otherwise noted)**

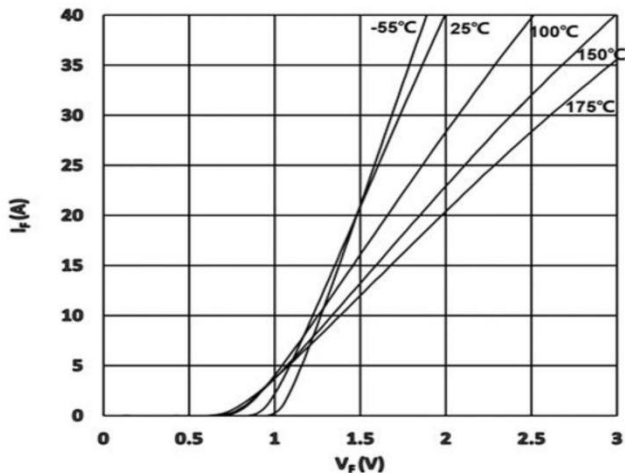
Parameter	Symbol	Rating	Units
Drain-Source Voltage	V <sub>RRM</sub>	1200	V
Continuous forward current (T <sub>c</sub> =25°C)	I <sub>F</sub>	44	A
Continuous forward current (T <sub>c</sub> =150°C)		20	
Non-repetitive forward surge current	I <sub>FSM</sub>	170	A
Repetitive Peak Forward Surge Current	I <sub>FRM</sub>	135	A
i <sup>2</sup> t value	∫i <sup>2</sup> dt	120	A <sup>2</sup> S
Total Power Dissipation(T <sub>c</sub> =25°C)	P <sub>D</sub>	269	W
Total Power Dissipation(T <sub>c</sub> =150°C)		49	
Thermal Resistance Junction-Case <sup>1</sup>	R <sub>θJC</sub>	0.55	°C/W
Storage Temperature Range	T <sub>STG</sub>	-55 to 175	°C
Operating Junction Temperature Range	T <sub>J</sub>	-55 to 175	°C

**Electrical characteristics (T<sub>a</sub>=25°C, unless otherwise noted)**

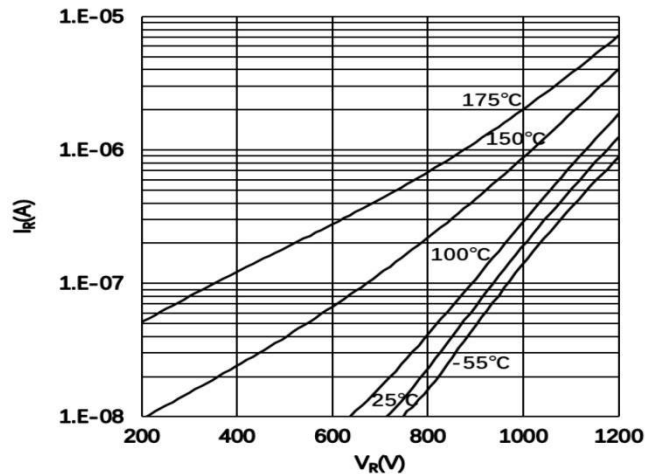
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
DC blocking voltage	V <sub>DC</sub>		1200	---	---	V
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =10A	---	1.22	---	V
		I <sub>F</sub> =20A, T <sub>c</sub> =25°C	---	1.45	1.8	
		I <sub>F</sub> =20A, T <sub>c</sub> =175°C	---	2.1	3.0	
Reverse current	I <sub>R</sub>	V <sub>R</sub> =1200V, T <sub>c</sub> =25°C	---	2	20	uA
		V <sub>R</sub> =1200V, T <sub>c</sub> =175°C	---	10	200	
Total capacitive charge	Q <sub>C</sub>	V <sub>R</sub> =800V	---	116	---	nC
Total capacitance	C	V <sub>R</sub> =1V, f=1MHZ	---	1950	---	pF
		V <sub>R</sub> =400V, f=1MHZ	---	105	---	
		V <sub>R</sub> =800V, f=1MHZ	---	81	---	
Capacitance Stored Energy	E <sub>C</sub>	V <sub>R</sub> =400V, T <sub>c</sub> =25°C	---	4.1	---	uJ



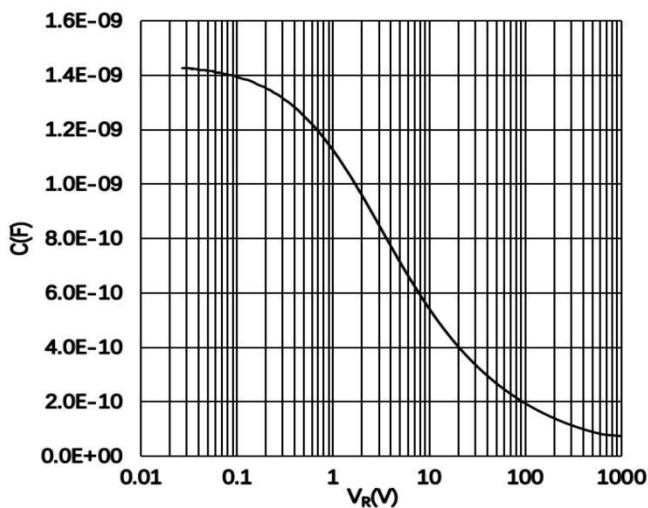
Typical Characteristics



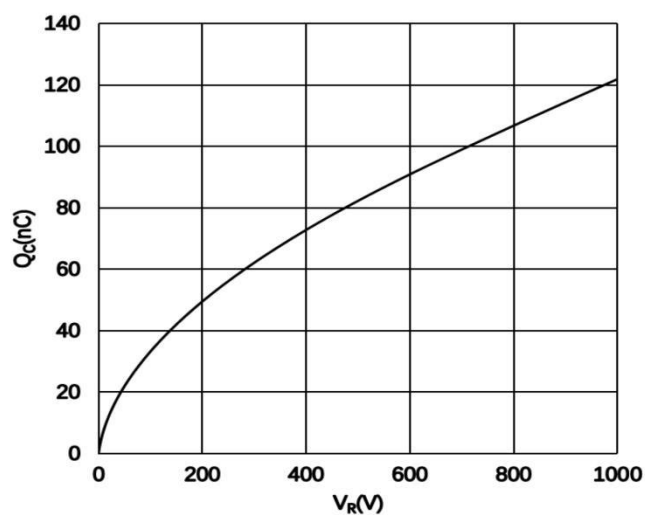
典型正向特性曲线



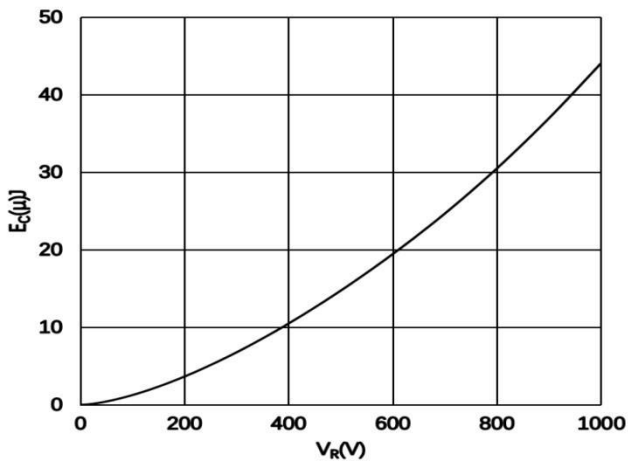
典型反向特性曲线



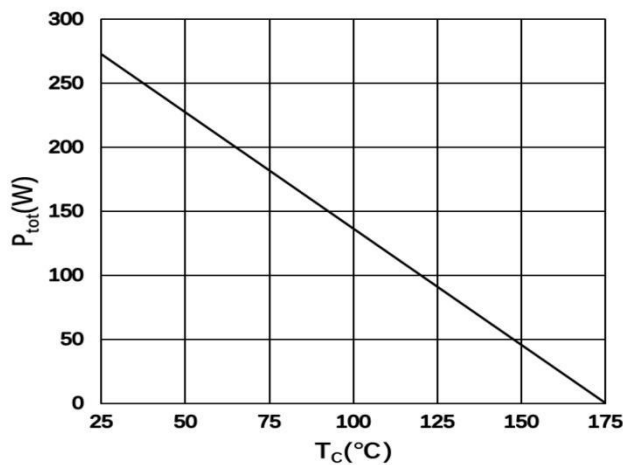
典型电容与反向电压曲线



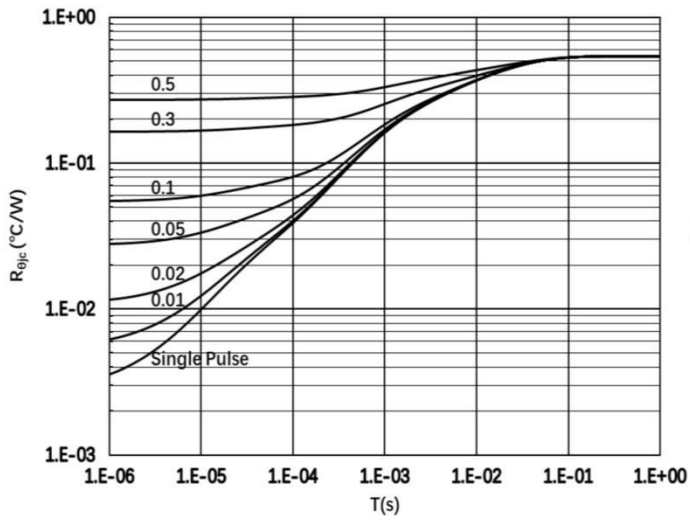
典型存储电荷与反向电压曲线



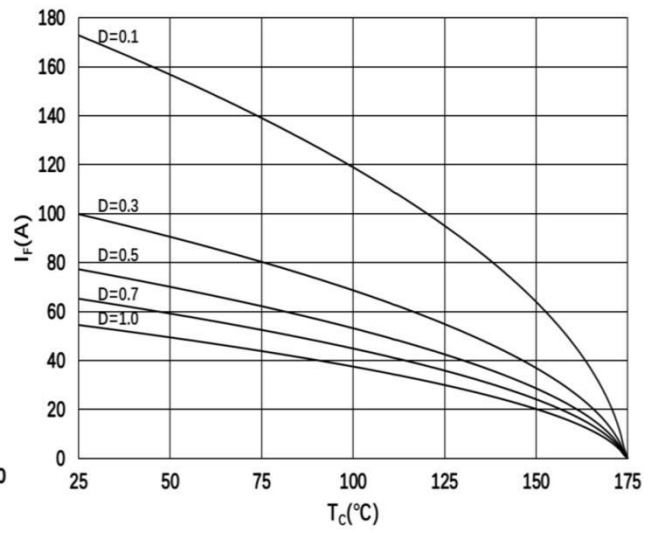
典型电容能量与反向电压曲线



典型功率降额曲线



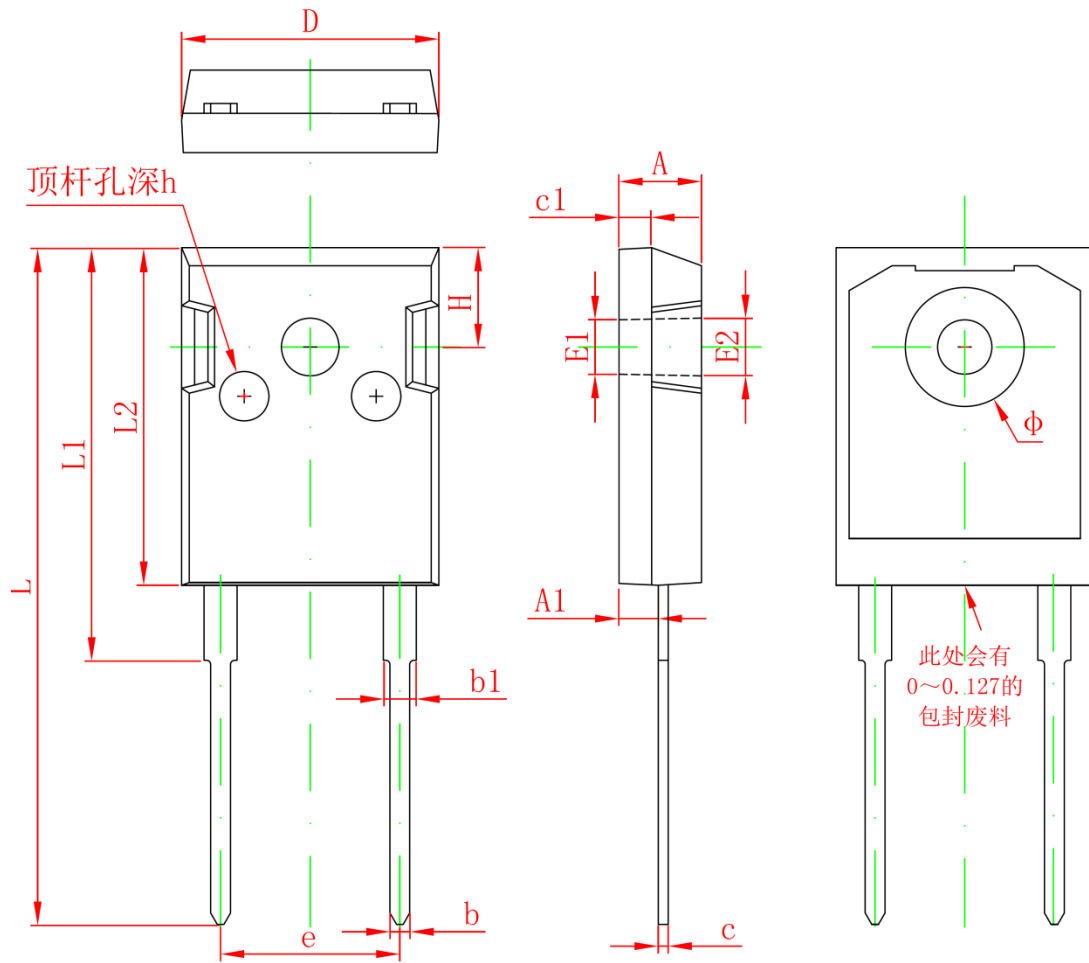
瞬态热阻抗



不同负载下的电流曲线



TO-247-2L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF.		0.138 REF.	
E2	3.600 REF.		0.142 REF.	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Φ	7.100	7.300	0.280	0.287
e	10.900 TYP.		0.429 TYP.	
H	5.980 REF.		0.235 REF.	
h	0.000	0.300	0.000	0.012