

Product Summary

V_{RRM}	I_F	Q_c
1200V	40A	217nC



合肥矽普半导体

Siliup Semiconductor Technology Co., Ltd

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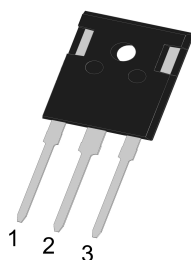
Feature

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

Applications

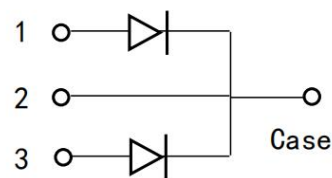
- Switch mode power supply
- Solar inverter
- Data Center
- Uninterruptible power supply

Package

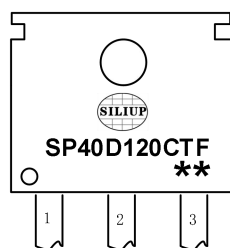


TO-247(1:G 2:D 3:S)

Circuit diagram



Marking



SP40D120CTF :Device Code
** :Week Code

Order Information

Device	Package	Unit/Tube
SP40D120CTF	TO-247	30

Absolute maximum ratings (Tc=25°C, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{RRM}	1200	V
Continuous forward current (T _C =25°C)	I_F	107	A
Continuous forward current (T _C =150°C)		40	
Non-repetitive forward surge current	I_{FSM}	320	A
Repetitive Peak Forward Surge Current	I_{FRM}	230	A
Power Dissipation(T _C =25°C)	P_D	467	W
Power Dissipation(T _C =150°C)		203	
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.27	°C/W
Storage Temperature Range	T_{STG}	-55 to 175	°C
Operating Junction Temperature Range	T_J	-55 to 175	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
DC blocking voltage	V_{DC}		1200	-	-	V
Forward voltage	V_F	$I_F=40A, T_C=25^{\circ}C$	-	1.45	1.65	V
		$I_F=40A, T_C=175^{\circ}C$	-	2.2	-	
Reverse current	I_R	$V_R=1200V, T_C=25^{\circ}C$	-	2	20	uA
		$V_R=1200V, T_C=175^{\circ}C$	-	7	-	
Total capacitive charge	Q_C	$V_R=800V$	-	217	-	nC
Total capacitance	C	$V_R=0V, f=1MHZ$	-	2855	-	pF
		$V_R=400V, f=1MHZ$	-	201	-	
		$V_R=800V, f=1MHZ$	-	145	-	

Typical Characteristics

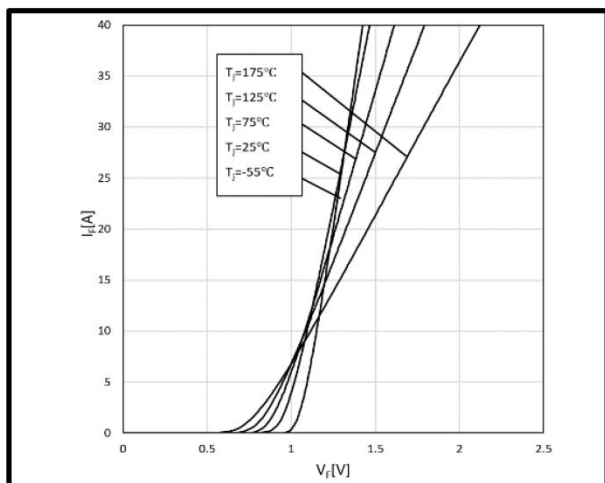


图 1 典型正向特性曲线

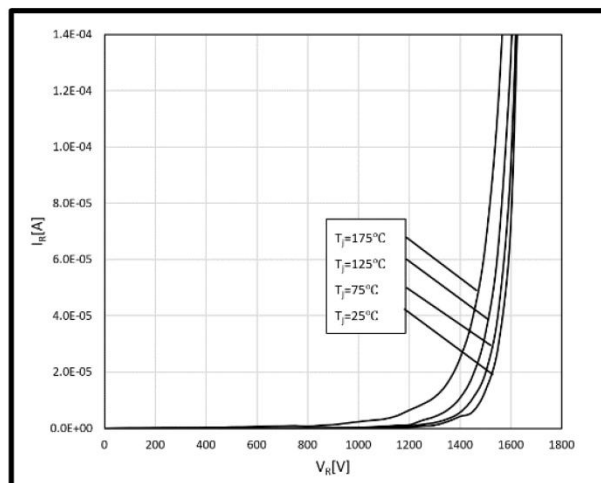


图 2 典型反向特性曲线

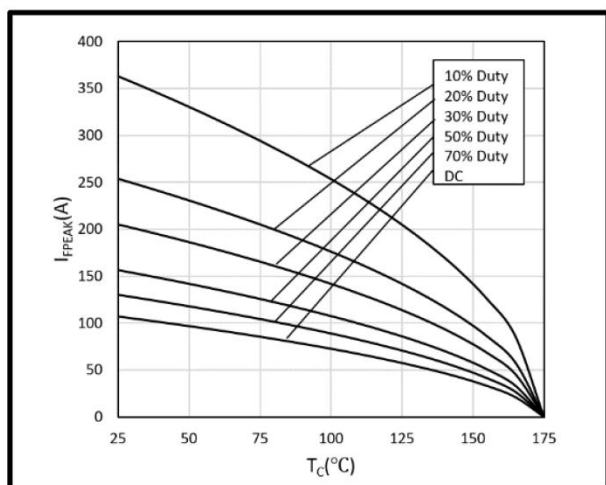


图 3 典型电流降额曲线

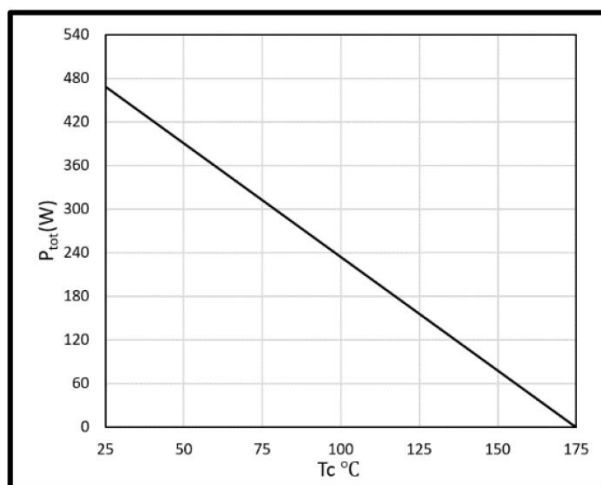


图 4 典型功率降额曲线

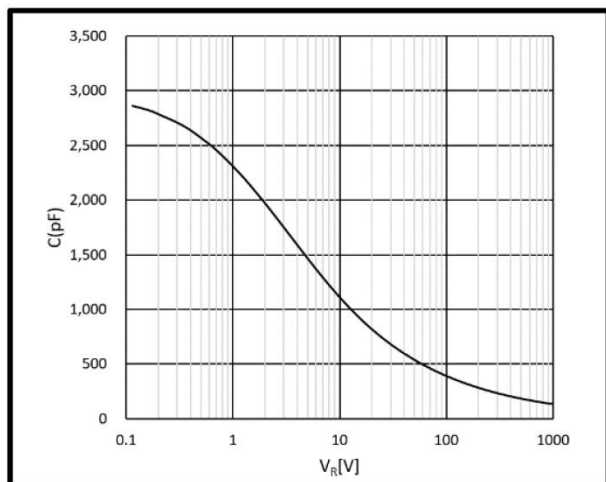


图 5 典型电容与反向电压曲线

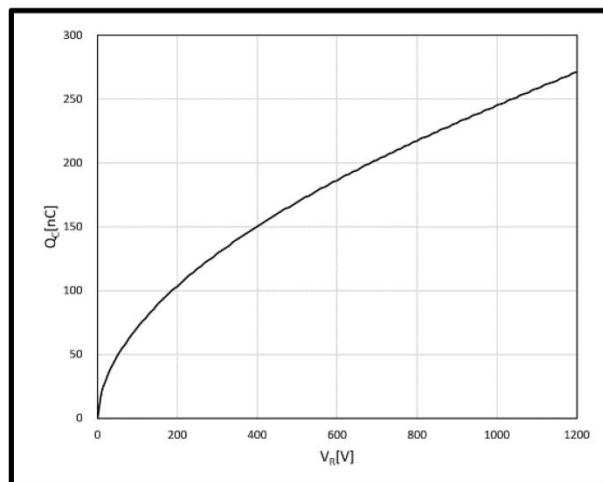


图 6 典型存储电荷与反向电压曲线

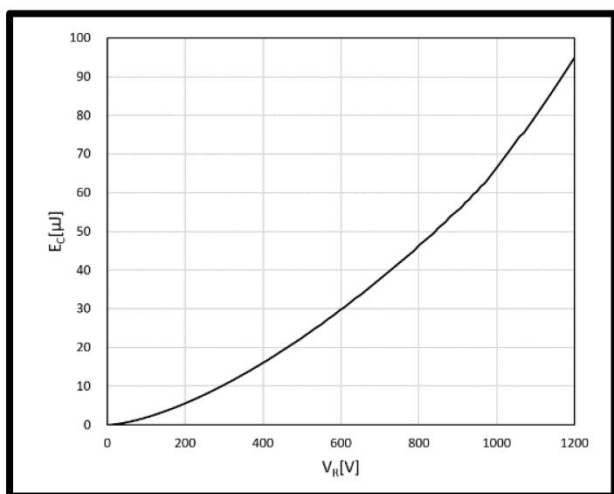


图 7 典型电容能量与反向电压曲线

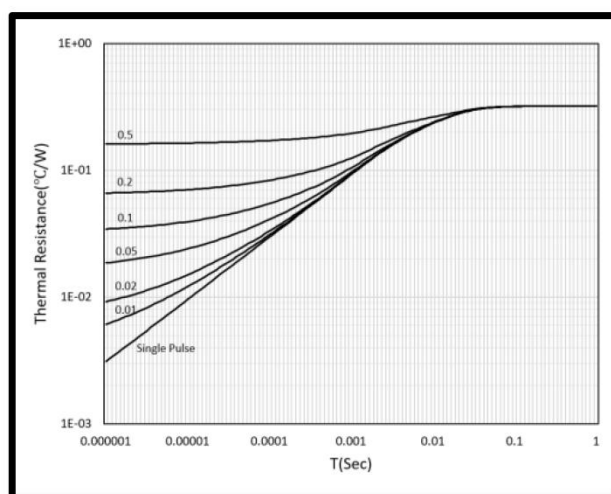
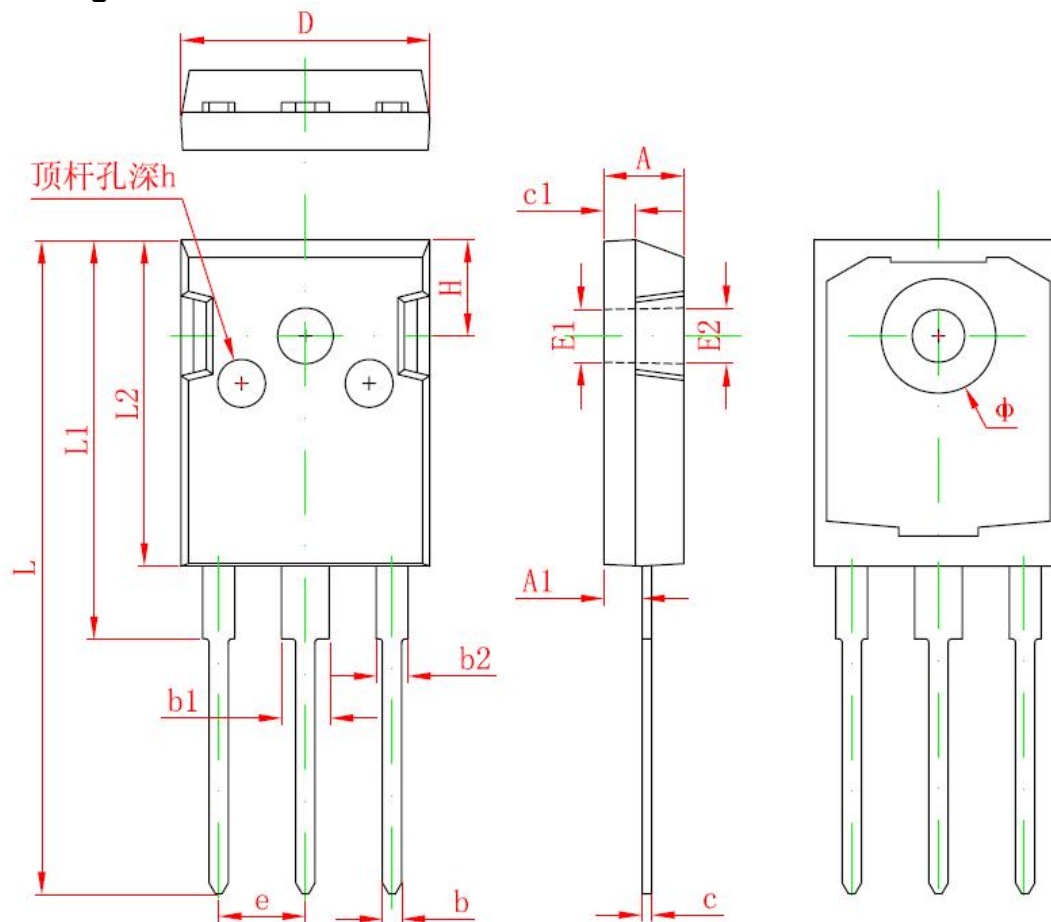


图 8 瞬态热阻抗

TO-247 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
b2	1.800	2.200	0.071	0.087
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
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	5.450 TYP.		0.215 TYP.	
H1	5.980 REF.		0.235 REF.	
h	0.000	0.300	0.000	0.012