芯科半导体

ELECTRONIC PRODUCT

浙江芯科半导体有限公司

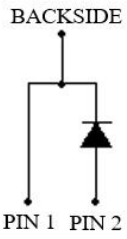
芯科半导体 SiC Schottky Diode **#KXJM65C15T2**

Features

- ✓ Zero forward recovery voltage
- ✓ Zero reverse recovery current
- ✓ Excellent surge current capability
- ✓ Temperature independent switching
- ✓ Positive temmperature coefficient on V_F
- ✓ High frequency operation

Part NO.		KXJM65C15T2
V_{RRM}	=	650 V
$I_F(T_C=150°C)$	=	23 A
Q_C	=	53 nC

Package: TO-220-2



Applications

- ✓ Motor drives
- ✓ Uninterruptible power supplies
- ✓ Photovoltaic inverter
- ✓ Switch mode power supplies (SMPS)

Key performance parameters

Symbol	Parameter	Test conditions	Value	Unit	Note
V_{RRM}	Repetitive peak reverse voltage	T_C= 25°C	650	V	
V_{RSM}	Surge peak reverse voltage (DC)	T_C= 25°C	650	V	
I_F	Continuous forward current	T_C= 25°C, D=1 T_C= 135°C, D=1 T_C= 155°C, D=1	56 29 20	A	Fig.2
I_{FRM}	Repetitive forward surge current	t_p=10 ms, Half sine wave T_C= 25°C T_C= 100°C	 82 62	A	
I_{FSM}	Non-repetitive forward surge current	t_p= 10 ms, Half sine wave T_C= 25°C T_C= 150°C	 84 62	A	
$\int i^2dt$	i²t value	t_p= 10 ms, T_C= 25°C T_C= 150°C	 35 19	A²s	
P_{tot}	Total power dissipation	T_C= 25°C	290	W	Fig.1
T_j	Operating junction temperature		-55 ~ 175	°C	
T_{stg}	Storage temperature		-55 ~ 175	°C	

Static electrical characteristics

Symbol	Parameter	Test conditions	Value			Unit	Note
			Min.	Typ.	Max.		
V_{DC}	DC blocking voltage	I_R= 100 μA, T_j= 25°C	700	-	-	V	
V_F	Diode forward voltage	I_F= 15 A, T_j= 25°C I_F= 15 A, T_j= 150°C	- -	1.42 1.94	1.6 -	V	Fig.3
I_R	Reverse current	V_R= 650 V, T_j= 25°C V_R= 650 V, T_j= 150°C	- -	4 178	100 200	μA	Fig.4
C	Total capacitance	V_R= 0.1 V, T_j= 25°C, f= 1 MHz V_R= 200 V, T_j= 25°C, f= 1 MHz V_R= 400 V, T_j= 25°C, f= 1 MHz	- - -	1091 100 72	- - -	pF	Fig.8
Q_C	Total capacitive charge	V_R= 400 V, T_j= 25°C	-	53	-	nC	Fig.5
E_C	Capacitance stored energy	V_R= 400 V, T_j= 25°C	-	13	-	μJ	Fig.7
T_{RR}	Reverse recovery time	V_R=400V, I_F=25A, di/dt=1000A/μs	-	11.67	-	ns	
Q_{RR}	Reverse recovery Charge		-	51	-	nC	

Thermal characteristics

Symbol	Parameter	Value		Unit	Note
		Typ	Max		
$R_{\theta JC}$	Thermal resistance from junction to case	0.515		°C/W	Fig.6
$R_{\theta JA}$	Thermal resistance from junction to ambient	32.33		°C/W	

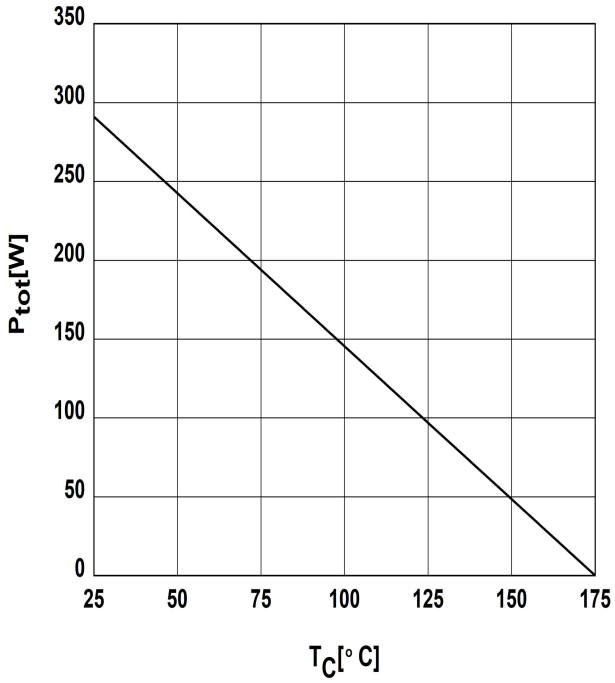


Figure.1 Power dissipation

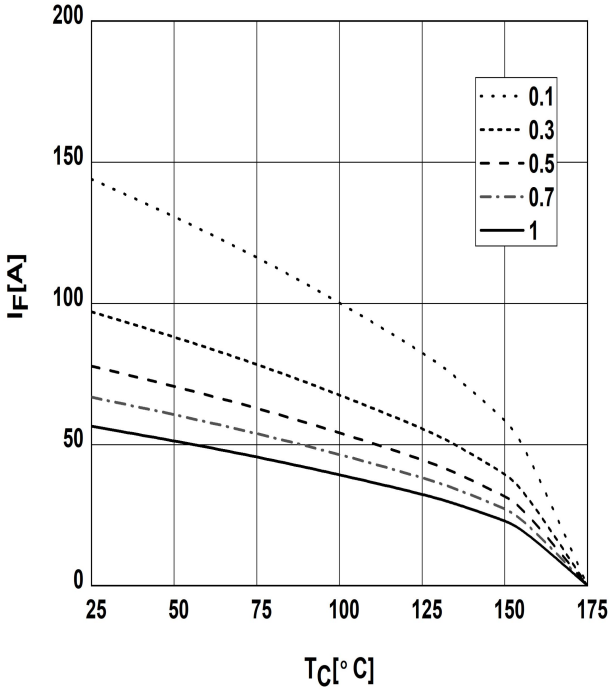


Figure.2 Diode forward current

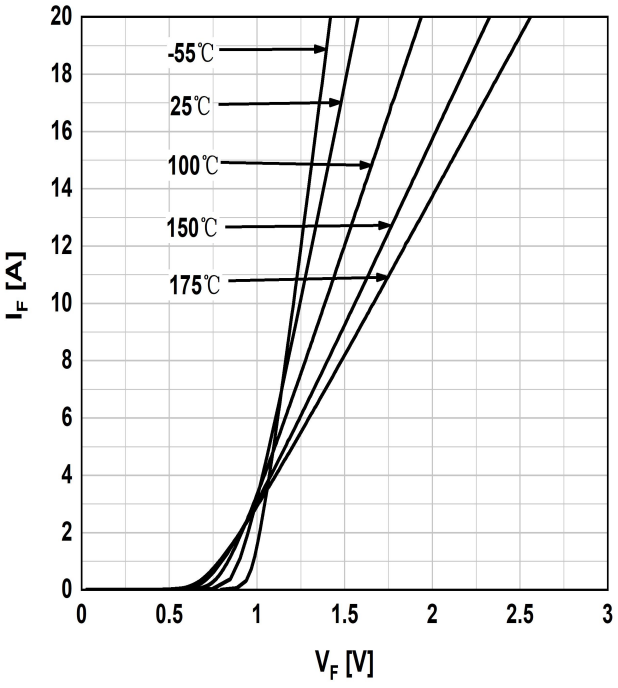


Figure.3 Typical forward characteristics

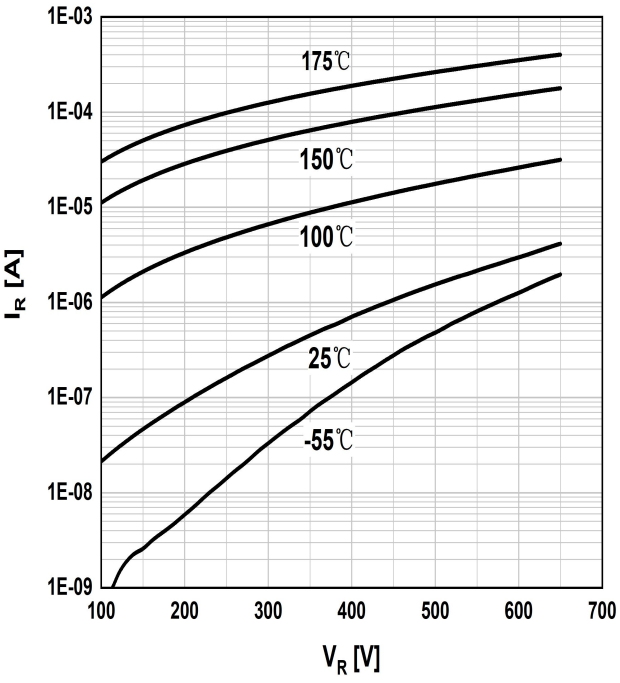


Figure.4 Reverse current vs. reverse voltage

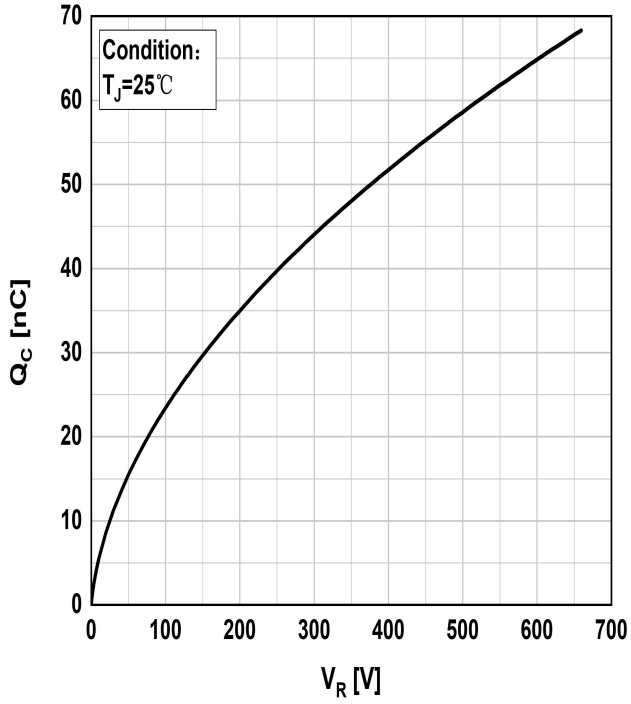


Figure.5 Capacitance charge vs. reverse voltage

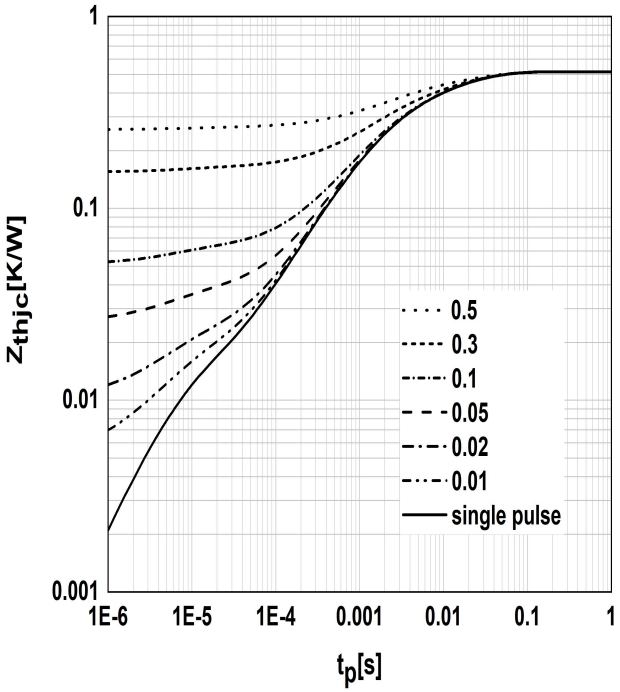


Figure.6 Transient thermal impedance

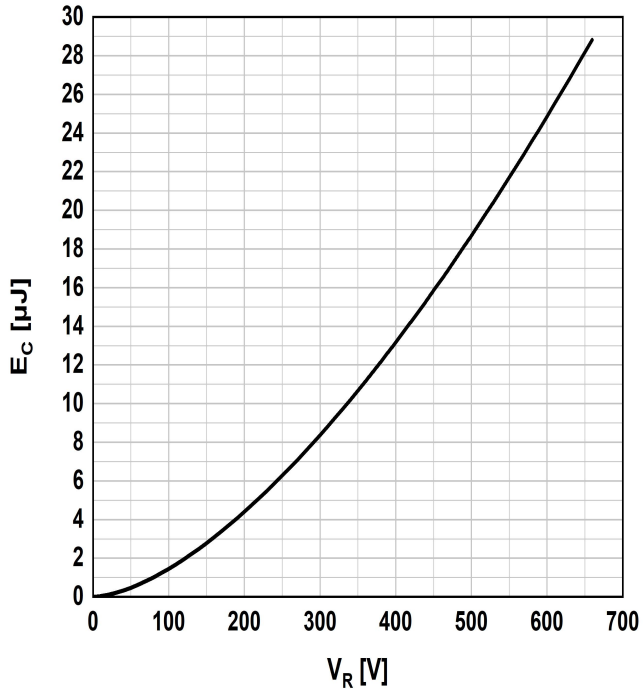


Figure.7 Capacitance stored energy

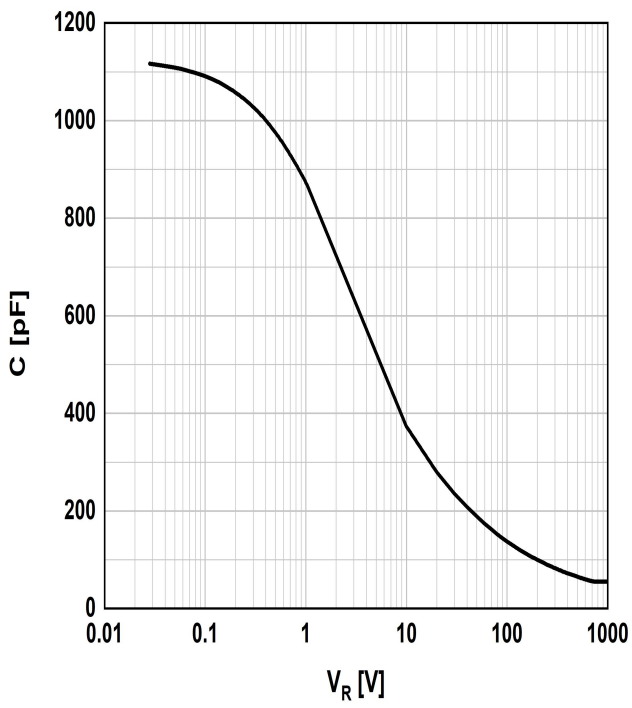
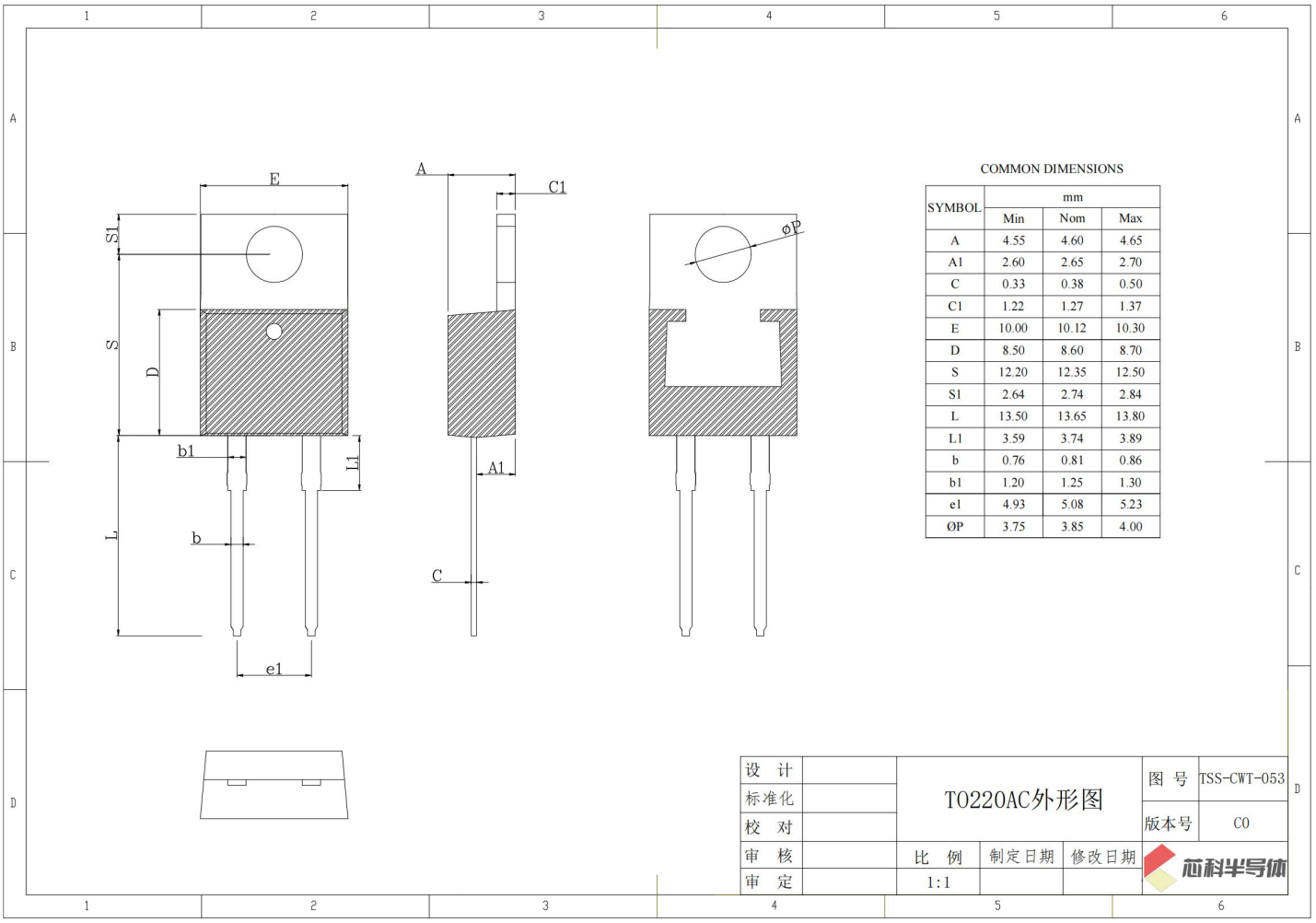


Figure.8 Capacitance vs. reverse voltage



COMMON DIMENSIONS

SYMBOL	mm		
	Min	Nom	Max
A	4.55	4.60	4.65
A1	2.60	2.65	2.70
C	0.33	0.38	0.50
C1	1.22	1.27	1.37
E	10.00	10.12	10.30
D	8.50	8.60	8.70
S	12.20	12.35	12.50
S1	2.64	2.74	2.84
L	13.50	13.65	13.80
L1	3.59	3.74	3.89
b	0.76	0.81	0.86
b1	1.20	1.25	1.30
e1	4.93	5.08	5.23
ØP	3.75	3.85	4.00

设 计		TO220AC外形图		图 号	TSS-CWT-053
标准化				版本号	C0
校 对					
审 核		比 例	制定日期	修改日期	芯科半导体
审 定		1:1			

芯科半导体

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