



芯科半导体

ELECTRONIC
PRODUCT
浙江芯科半导体有限公司

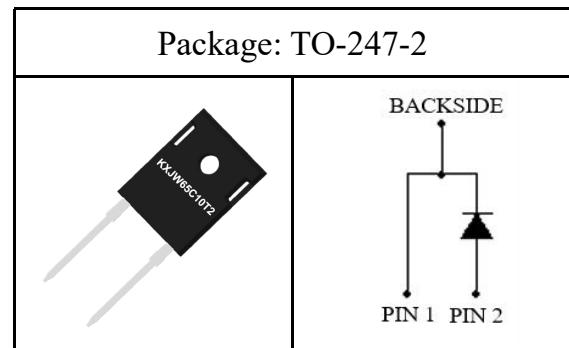
Features

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

Part NO.	KXJW65C10T2
V_{RRM}	= 650 V
$I_F(T_C=150^\circ C)$	= 10 A
Q_C	= 18 nC

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	$T_C = 25^\circ C$	650	V	
V_{RSM}	Surge peak reverse voltage (DC)	$T_C = 25^\circ C$	650	V	
I_F	Continuous forward current	$T_C = 25^\circ C$ $T_C = 140^\circ C$ $T_C = 150^\circ C$	27 10 8.5	A	Fig.2
I_{FRM}	Repetitive forward surge current	$T_C = 25^\circ C, t_p = 10 \text{ ms}$, Half Sine Wave	34	A	
I_{FSM}	Non-repetitive forward surge current	$T_C = 25^\circ C, t_p = 10 \text{ ms}$, Half Sine Wave	70.5	A	
$\int i^2 dt$	$i^2 t$ value	$T_C = 25^\circ C, t_p = 10 \text{ ms}$	25	$A^2 s$	
P_{tot}	Total power dissipation	$T_C = 25^\circ C$	81	W	Fig.1
T_j	Operating junction temperature		-55~175	$^\circ C$	
T_{stg}	Storage temperature		-55~175	$^\circ C$	

Static electrical characteristics

Symbol	Parameter	Test conditions	Value			Unit	Note
			Min.	Typ.	Max.		
V _{DC}	DC blocking voltage	I _R = 50 μA, T _j = 25°C	650	-	-	V	
V _F	Diode forward voltage	I _F = 10 A, T _j = 25°C I _F = 10 A, T _j = 150°C	1.31 1.63	1.38 1.69	1.43 1.92	V	Fig.3
I _R	Reverse current	V _R = 650 V, T _j = 25°C V _R = 650 V, T _j = 150°C	-	0.5 5	200 1000	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	-	383 40 37	-	pF	Fig.8
Q _C	Total capacitive charge	V _R = 650 V, I _F = 10 A di/dt= 200 A/μs, T _j = 25°C	-	18	-	nC	Fig.5
E _C	Capacitance stored energy	V _R = 400 V, T _j = 25°C	-	3.2	-	μJ	Fig.7

Thermal characteristics

Symbol	Parameter	Value		Unit	Note
		Typ	Max		
R _{θJC}	Thermal resistance from junction to case	1.2	1.9	°C/W	Fig.6

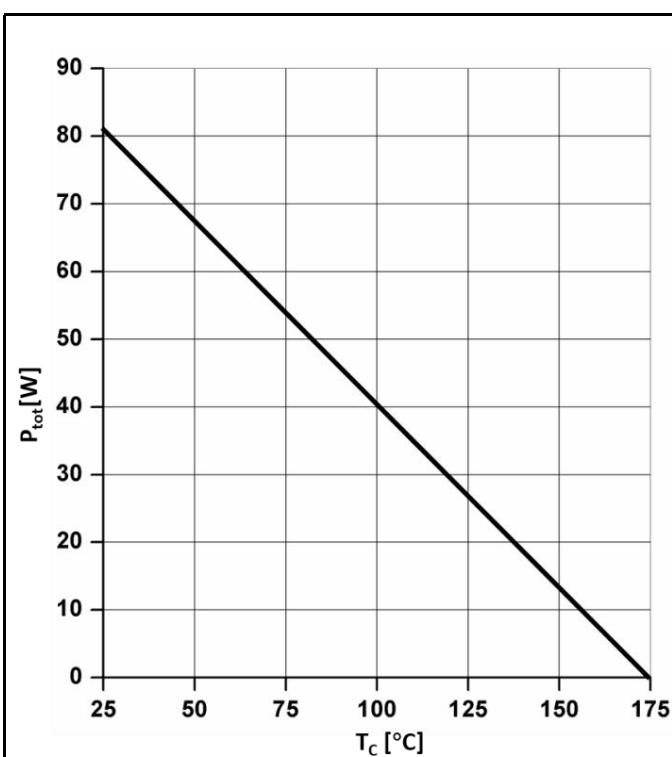


Figure.1 Power dissipation

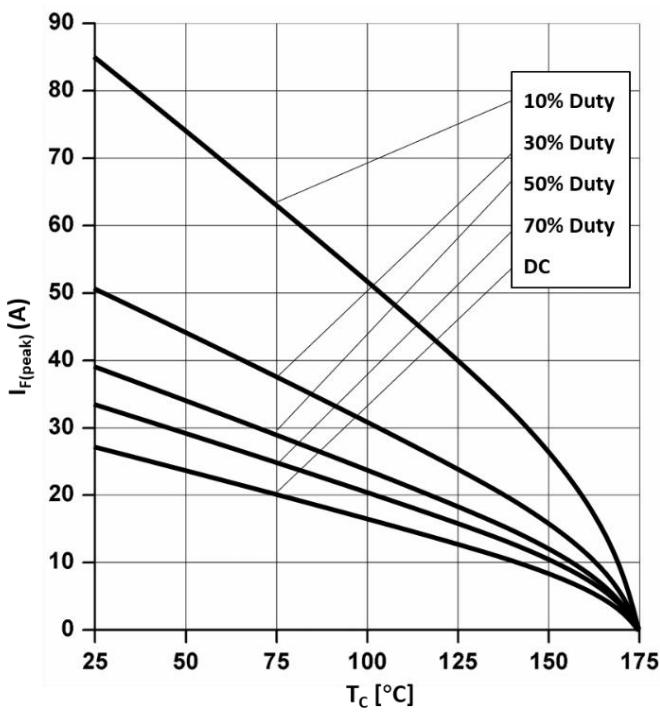


Figure.2 Diode forward current

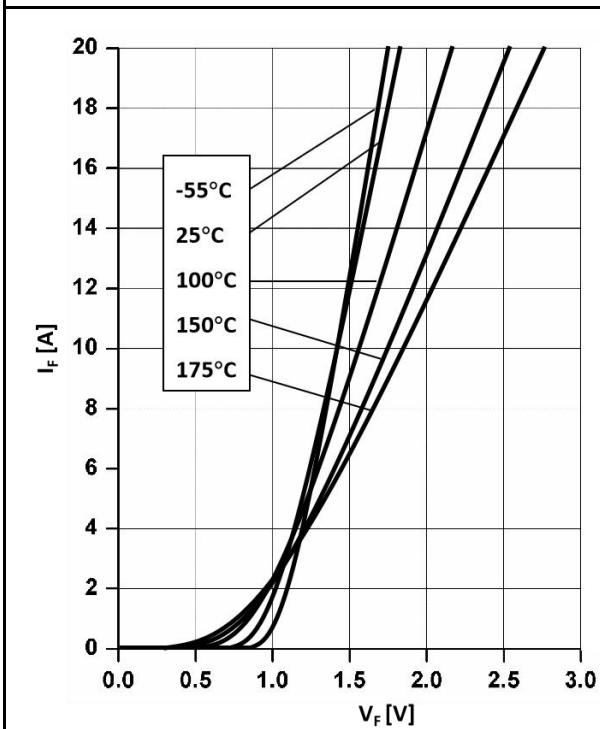


Figure.3 Typical forward characteristics

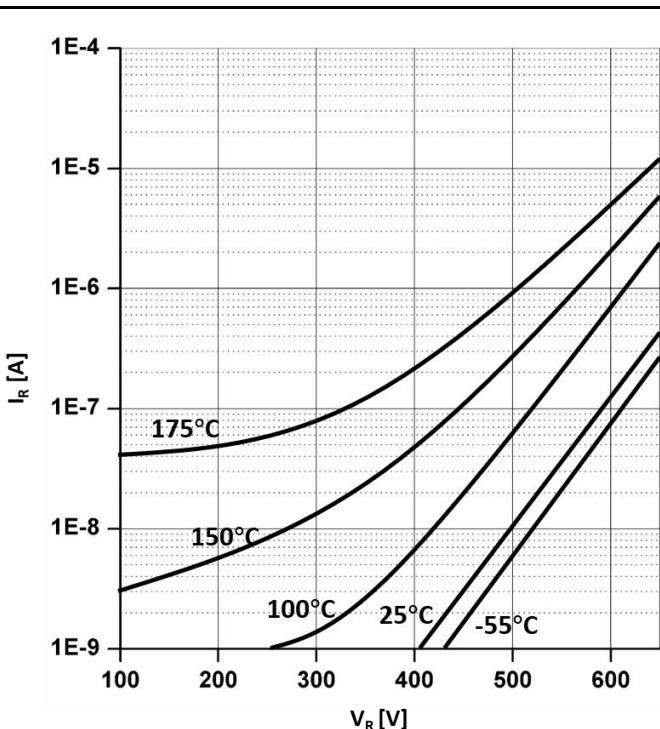


Figure.4 Reverse current vs. reverse voltage

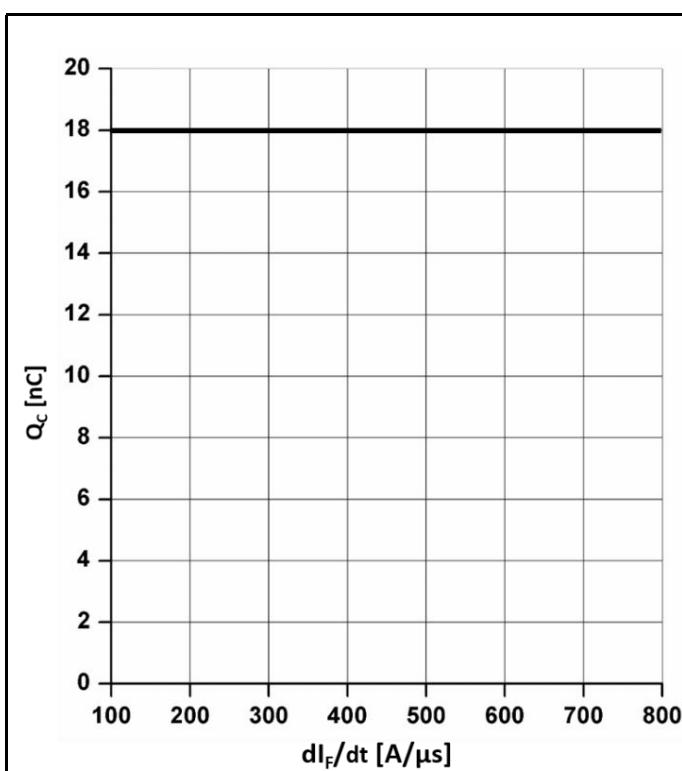


Figure.5 Capacitance charge vs. current slope

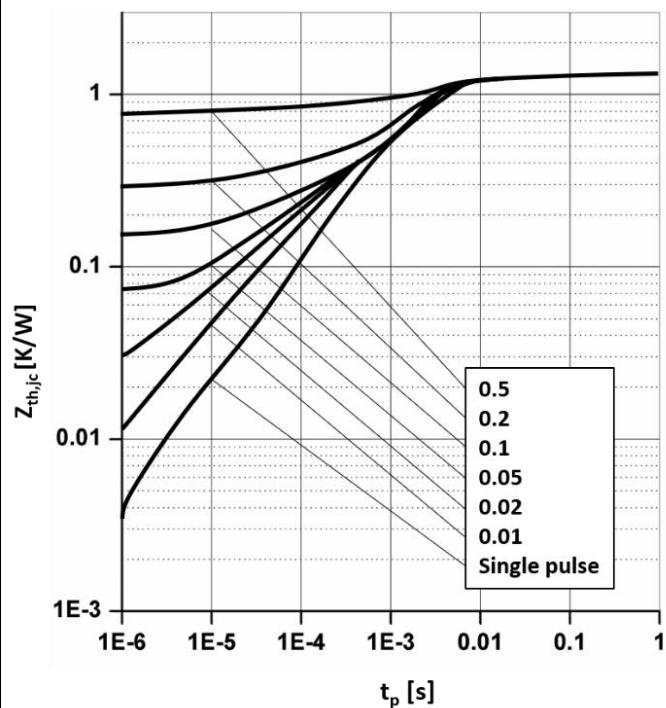


Figure.6 Transient thermal impedance

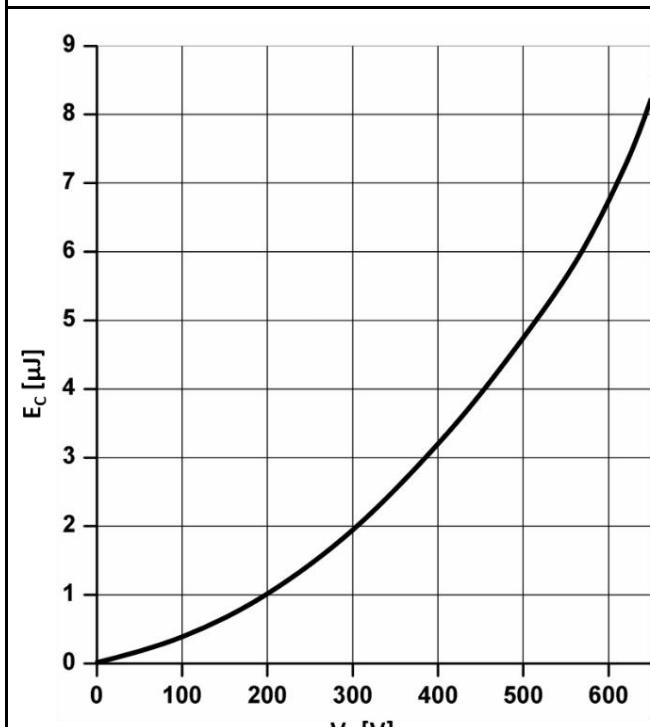


Figure.7 Capacitance stored energy

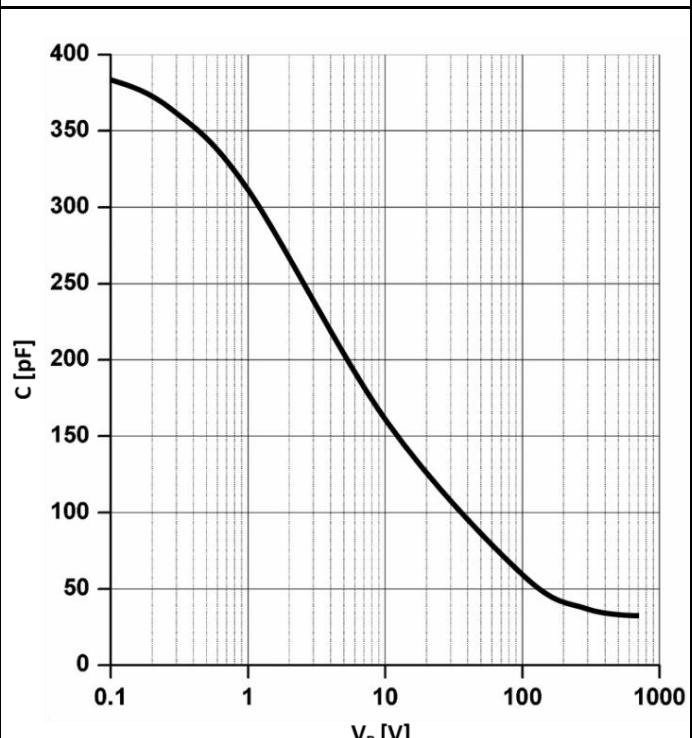
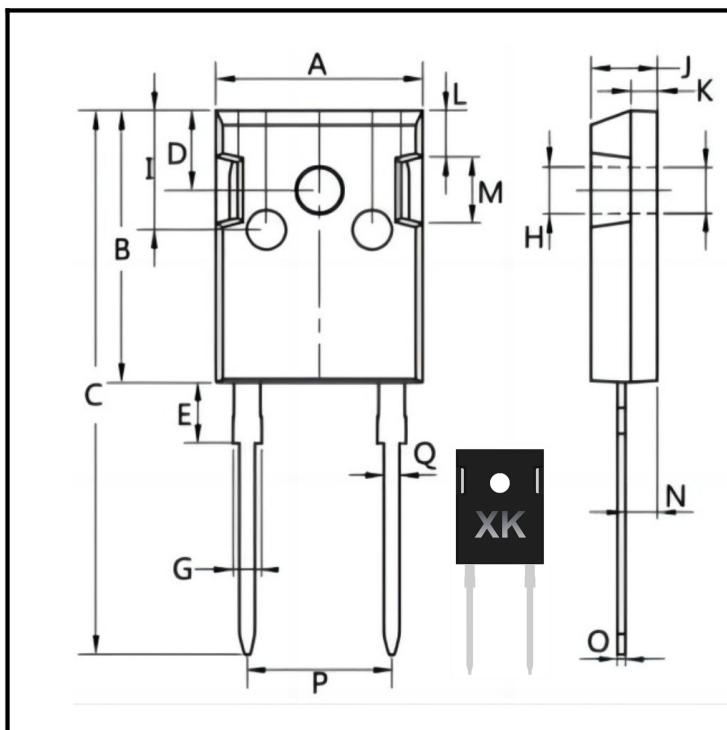


Figure.8 Capacitance vs. reverse voltage

Package outlines



The diagram illustrates the physical dimensions of the KXJW65C10T2 package. It shows a top-down view of the package body with various dimensions labeled: A, B, C, D, E, G, H, I, J, K, L, M, N, O, P, and Q. To the right, a vertical cross-section shows the height of the package body and the lead profile, with dimensions H, I, J, K, L, M, N, O, and P indicated.

Dim.	Min.	Max.
A	15.0	16.0
B	20.0	21.0
C	40.0	42.0
D	5.5	6.5
E	4.0	5.5
G	1.75	2.5
H	3.0	4.0
I	8.0	10.0
J	4.9	5.1
K	1.9	2.1
L	3.0	4.0
M	4.75	5.25
N	2.0	3.0
O	0.55	0.65
P	Typ 10.8	
Q	1.2	1.3

All Dimensions in millimeter