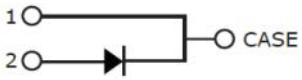
V_{RRm} = **1700 V**
$I_F(T_C=110℃)$ = **75A**
$V_F(T_j=25℃)$ = **1.7V**



TO-247-2



Features

- Low reverse current
- Good surge current capability
- Low capacitive charge
- No reverse recovery current
- Halogen free, RoHs compliant

Part Number	Marking	Package
CI50S170D3L2	CI50S170D3L2	TO-247-2

Benefits

- System efficiency improvement over Si diodes
- Higher switching frequency
- Increased power density
- Essentially no switching losses

Applications

- Switch mode power supplies (SMPS)
- Uninterruptible power supplies
- On Board Charger
- UPS

Package Pin Definitions

- Pin1- Cathode
- Pin2- Anode

Maximum Ratings (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Test conditions	Value	Unit
V_{RRM}	Repetitive peak reverse voltage		1700	V
V_{RSM}	Non-repetitive peak reverse voltage		1700	V
I_F	Continuous forward current	T_C=25°C T_C=110°C T_C=150°C	120 75 50	A
I_{FRM}	Repetitive forward surge current	T_C=25°C , t_p=10ms, Half Sine Pulse T_C=110°C , t_p=10ms, Half Sine Pulse	300 275	A
I_{FSM}	Non-Repetitive forward surge current	T_C=25°C , t_p=10ms, Half Sine Pulse T_C=110°C , t_p=10ms, Half Sine Pulse	600 550	A
$\int i^2dt$	i^2t value	T_C=25°C , t_p=10ms, Half Sine Pulse T_C=110°C , t_p=10ms, Half Sine Pulse	1800 1512.5	A^2S
P_{tot}	Power dissipation	T_C=25°C T_C=110°C	484 210	W
T_j	Operating junction temperature		-55~175	°C
T_{stg}	Storage temperature		-55~150	°C

Thermal Characteristics

Symbol	Parameter	Value			Unit
		Min.	Typ.	Max.	
$R_{th(jc)}$	Thermal resistance from junction to case		0.31		°C/W

Electrical Characteristics (T_j=25°C unless otherwise specified)

Static Characteristics

Symbol	Parameter	Test conditions	Value			Unit
			Min.	Typ.	Max.	
V_{DC}	DC blocking voltage	T_j=25°C	1700			V
V_F	Diode forward voltage	I_F=75A T_j=25°C I_F=75A T_j=175°C		1.7 3.0	2.2	V
I_R	Reverse current	V_R=1700V T_j=25°C V_R=1700V T_j=175°C		5 50	100 200	μA

AC Characteristics (T_j=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Value			Unit
			Min.	Typ.	Max.	
Q_C	Total capactive charge	V_R=1700V T_j=25°C $Q_C = \int_0^{VR} C(V)dV$		663		nC
C	Total capacitance	V_R=0V f=1MHz V_R=800V f=1MHz V_R=1700V f=1MHz		8400 278 261		pF

Typical Performance

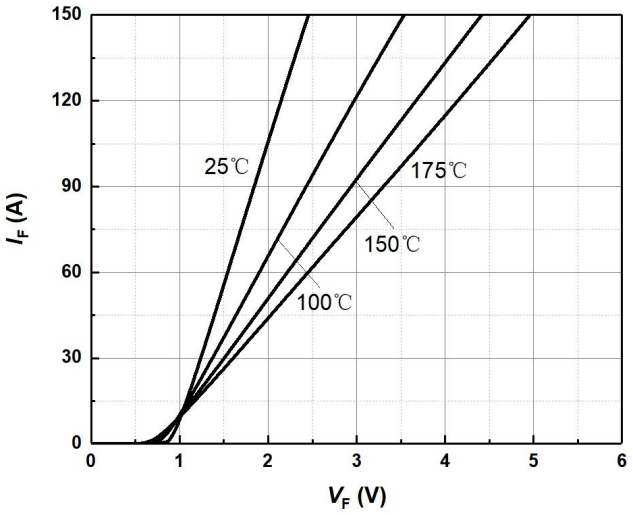


Figure 1. Typical forward characteristics

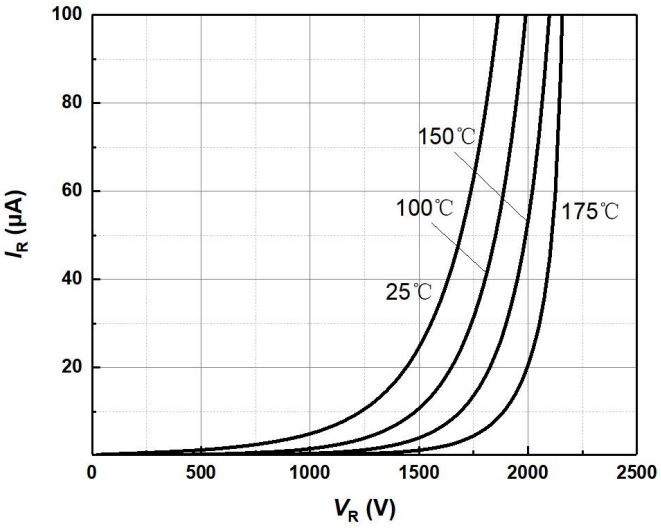


Figure 2. Typical reverse current as function of reverse voltage

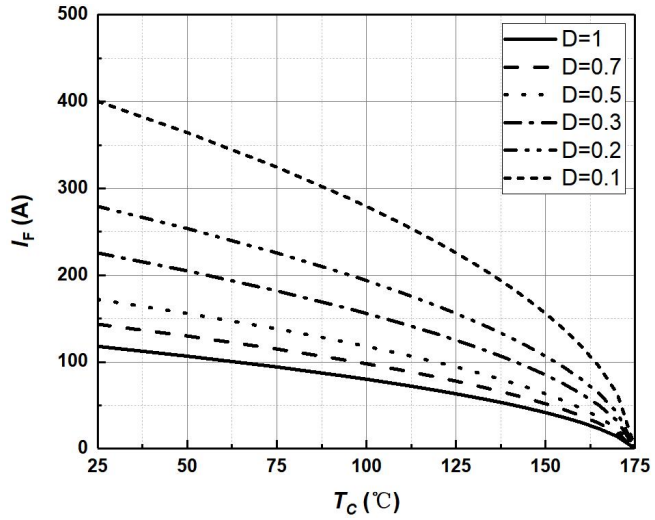


Figure 3. Diode forward current as function of temperature

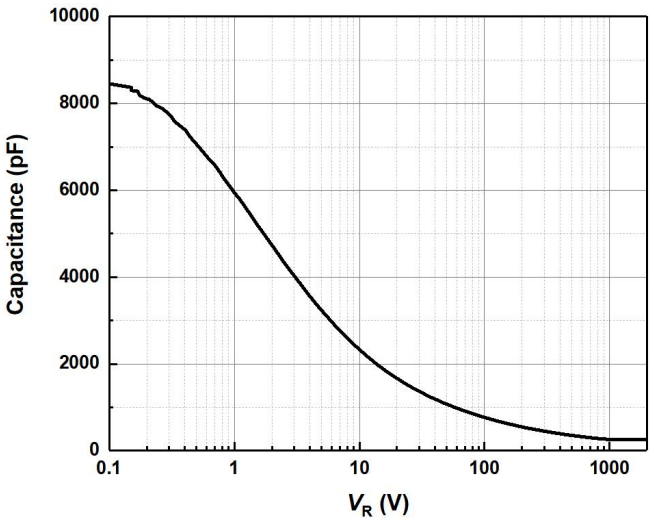


Figure 4. Typical capacitance as function of reverse voltage, C=f(V_R); T_j=25°C

Typical Performance

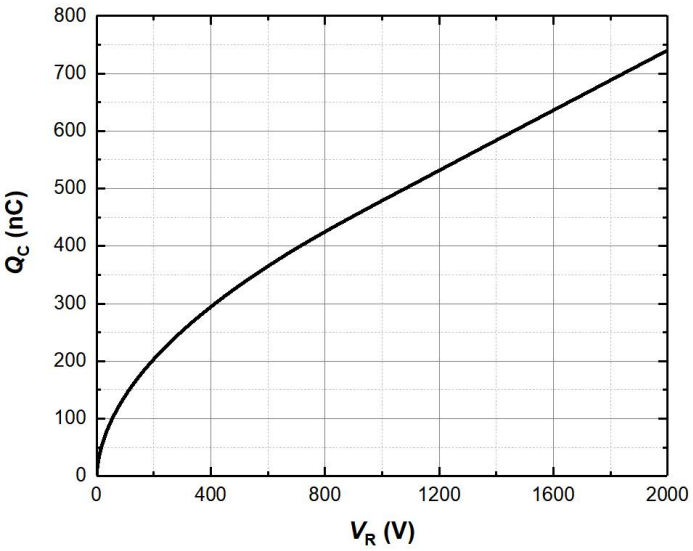


Figure 5. Typical reverse charge as function of reverse voltage

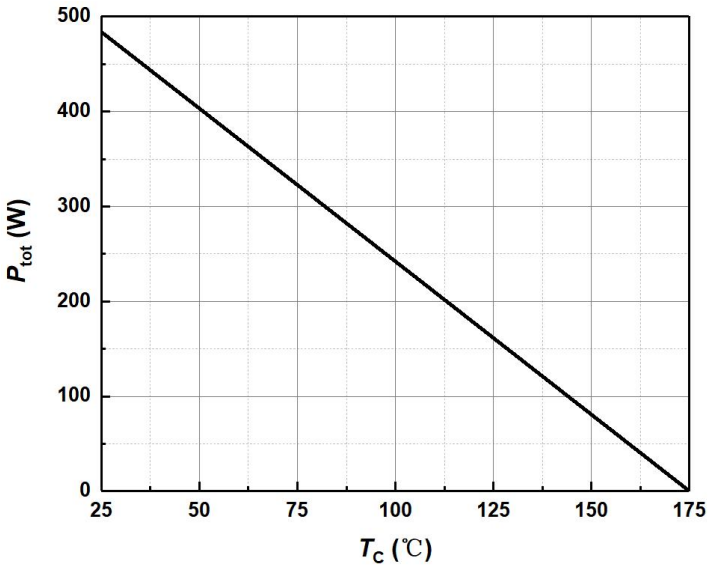


Figure 6. Power dissipation as function of case temperature

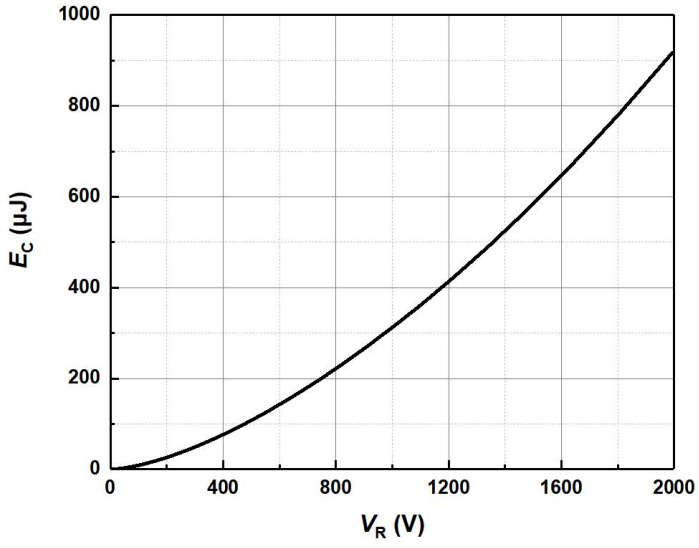


Figure 7.Capacitance stored energy

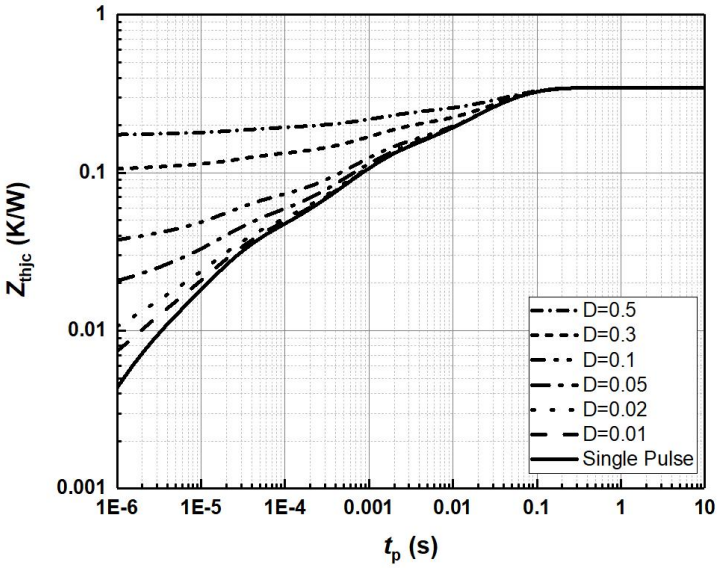
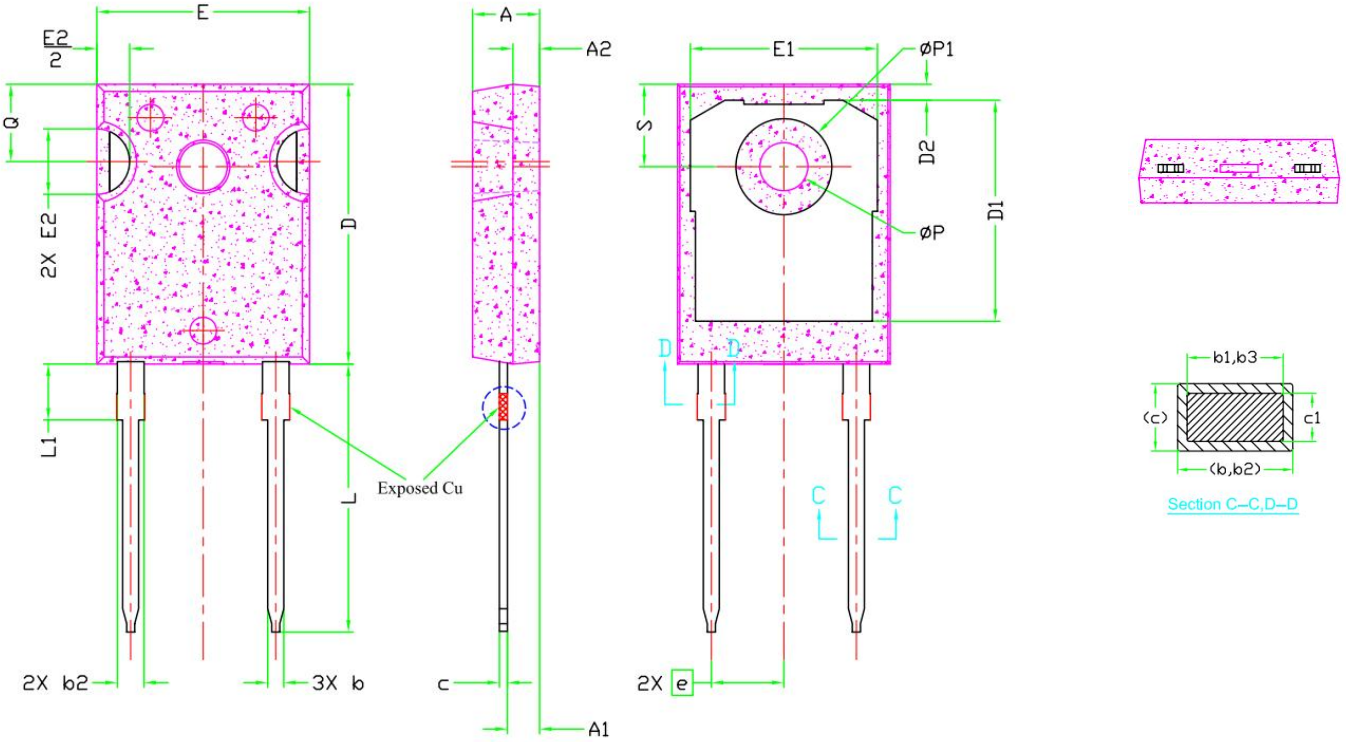


Figure 8. Max. transient thermal impedance

Package Dimensions



SYMBOL	DIMENSIONS			NOTES
	MIN.	NOM.	MAX.	
A	4.83	5.02	5.21	
A1	2.29	2.41	2.55	
A2	1.50	2.00	2.49	
b	1.12	1.20	1.33	
b1	1.12	1.20	1.28	
b2	1.91	2.00	2.39	6
b3	1.91	2.00	2.34	
c	0.55	0.60	0.69	6
c1	0.55	0.60	0.65	
D	20.80	20.95	21.10	4
D1	16.25	16.55	17.65	5
D2	0.51	1.19	1.35	
E	15.75	15.94	16.13	4
E1	13.46	14.02	14.16	5
E2	4.32	4.91	5.49	3
e	5.44BSC			
L	19.81	20.07	20.32	
L1	4.10	4.19	4.40	6
ØP	3.56	3.61	3.65	7
ØP1	7.19REF.			
Q	5.39	5.79	6.20	
S	6.04	6.17	6.30	