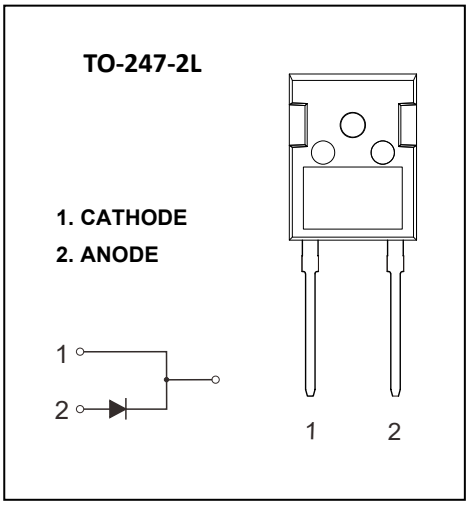
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-247-2L Plastic-Encapsulate Diode

CSDW20H120 Silicon Carbide Schottky Diode



MAIN CHARACTERISTICS

I_O	20A(T_C≤122℃)
V_{RRM}	1200V
T_j	175℃
$V_{F(typ)}$	1.48V (@T_j=25℃) 2.35V (@T_j=175℃)

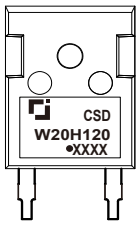
FEATURES

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Temperature-independent performance
- High-speed switching
- Low switching loss
- Low Leakage Current

Application

- Industrial Power Supplies
- Power factor correction
- Motor drive traction
- EV charging station
- Solar Inverters

MARKING



CSDW20H120 = Device code
Solid dot = Green molding compound device
if none, the normal device
XXXX = Code

MAXIMUM RATINGS (T_j=25℃ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{RRM}	Peak repetitive reverse voltage		1200	V
V_{RWM}	Working peak reverse voltage			
V_R	DC blocking voltage			
$I_{F(AV)}$	Average Forward Current	T_C≤25℃	37	A
		T_C≤100℃	25	A
		T_C≤122℃	20	A
I_{FSM}	Non-Repetitive peak forward surge current (10ms half sine wave)		184	A
$\int i^2dt$	i^2t value (t_P=10ms)		169	A^2s
P_D	Power dissipation		136	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case		1.1	℃/W
T_j	Junction temperature		-55~175	℃
T_{stg}	Storage temperature		-55~175	℃

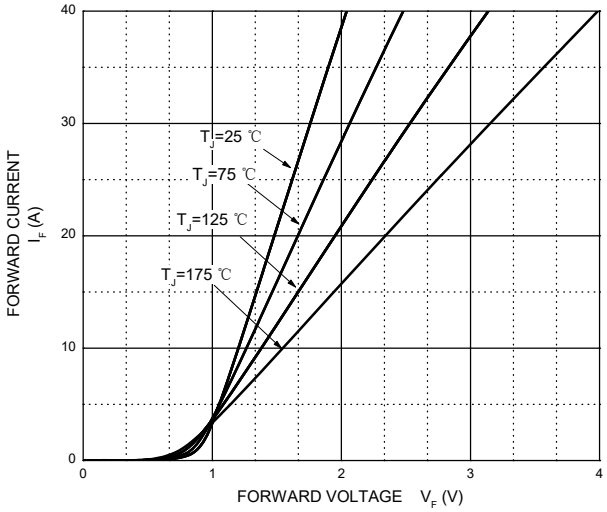
Typical Characteristics

ELECTRICAL CHARACTERISTICS(T_j=25℃ unless otherwise specified)

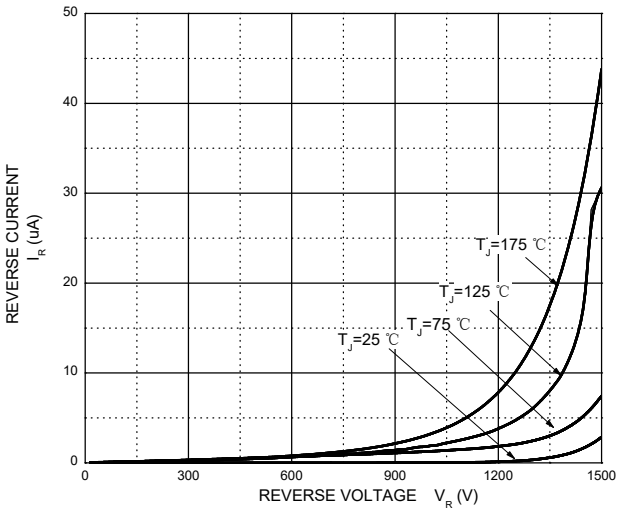
Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Reverse voltage	$V_{(BR)}$	I_R=100μA		1200			V
Reverse current	I_R	V_R=1200V	T_j=25℃		5	50	μA
			T_j=175℃		20	200	μA
Forward voltage	V_F	I_F=20A	T_j=25℃		1.48	1.8	V
			T_j=175℃		2.35	3.0	V
Total capacitance	C	V_R=0V,f=1MHz			1240		pF
		V_R=400V,f=1MHz			84		pF
		V_R=800V, f=1MHz			66		pF
Total capacitive charge	Q_C	V_R=800V $Q_C=\int_0^{VR} C(V)dV$			92		nC
Capacitance Stored Energy	E_C	V_R=800V $E_C=\int_0^{VR} C(V)\cdot VdV$			27		μJ

Typical Characteristics

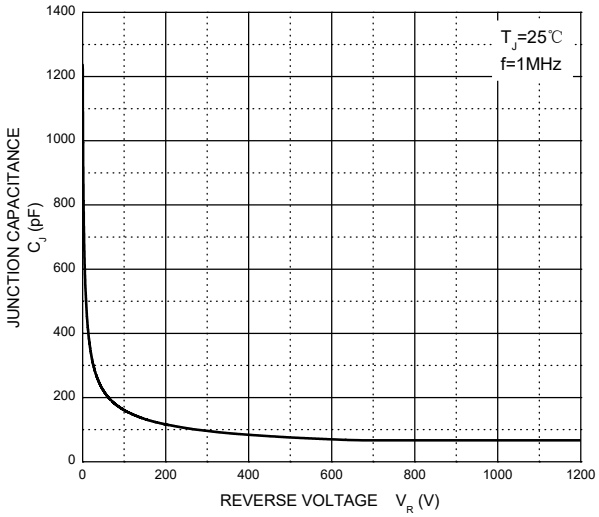
Forward Characteristics



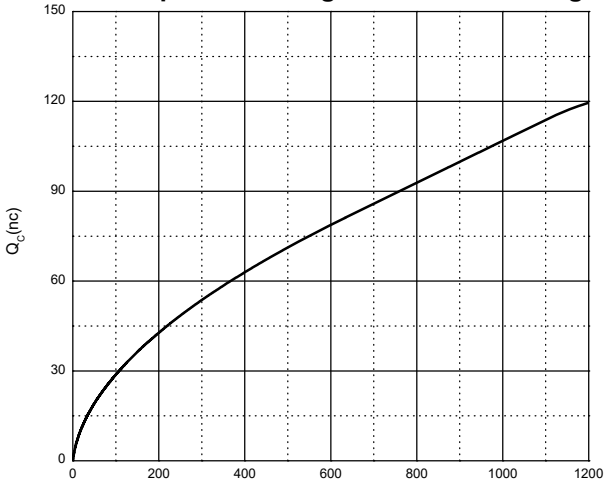
Reverse Characteristics



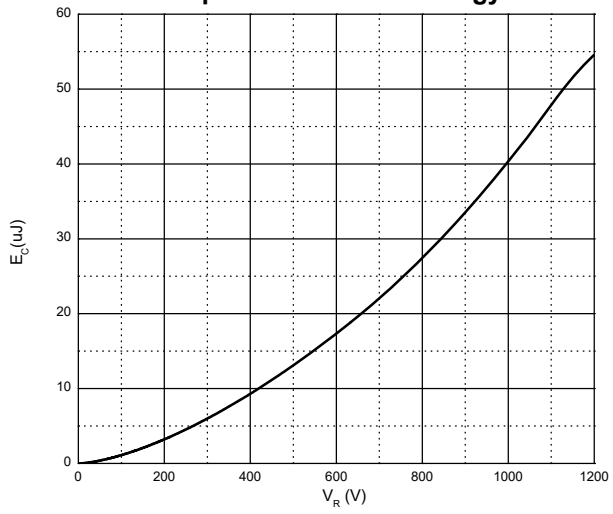
Capacitance Characteristics Per Diode



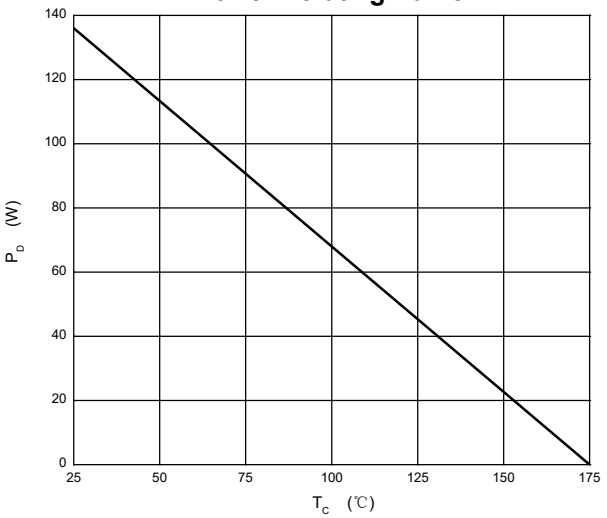
Total Capacitive Charge vs. Reverse Voltage



Capacitance Stored Energy

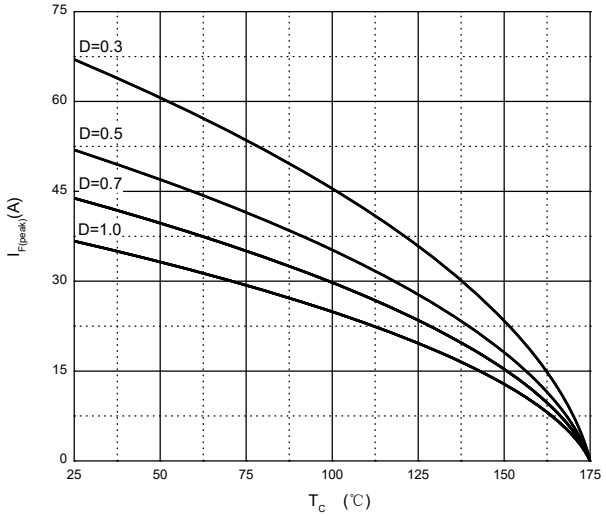


Power Derating Curve

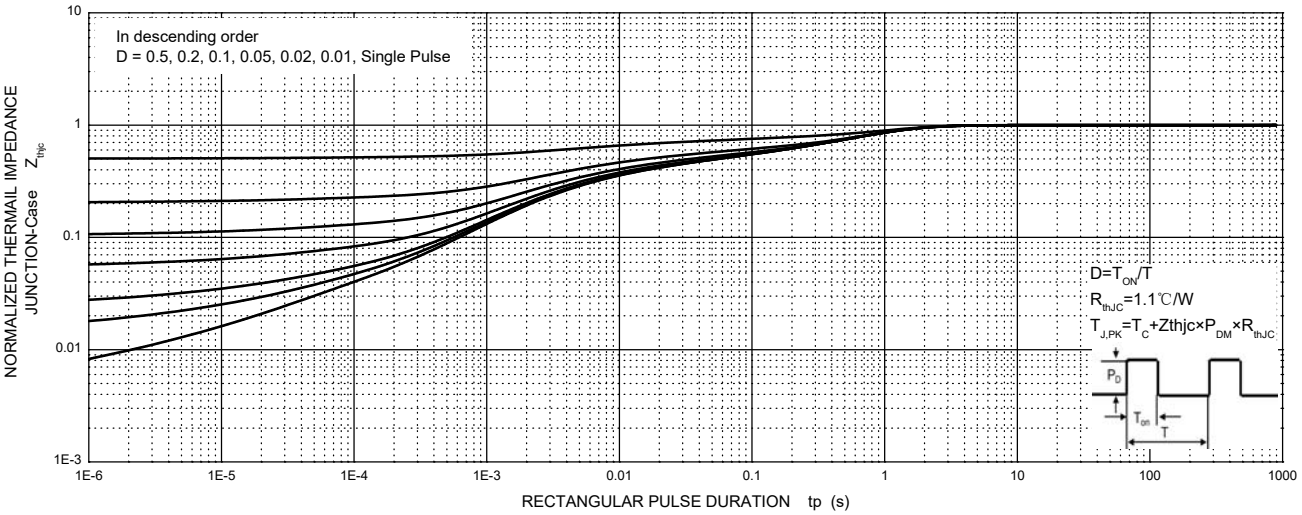


Typical Characteristics

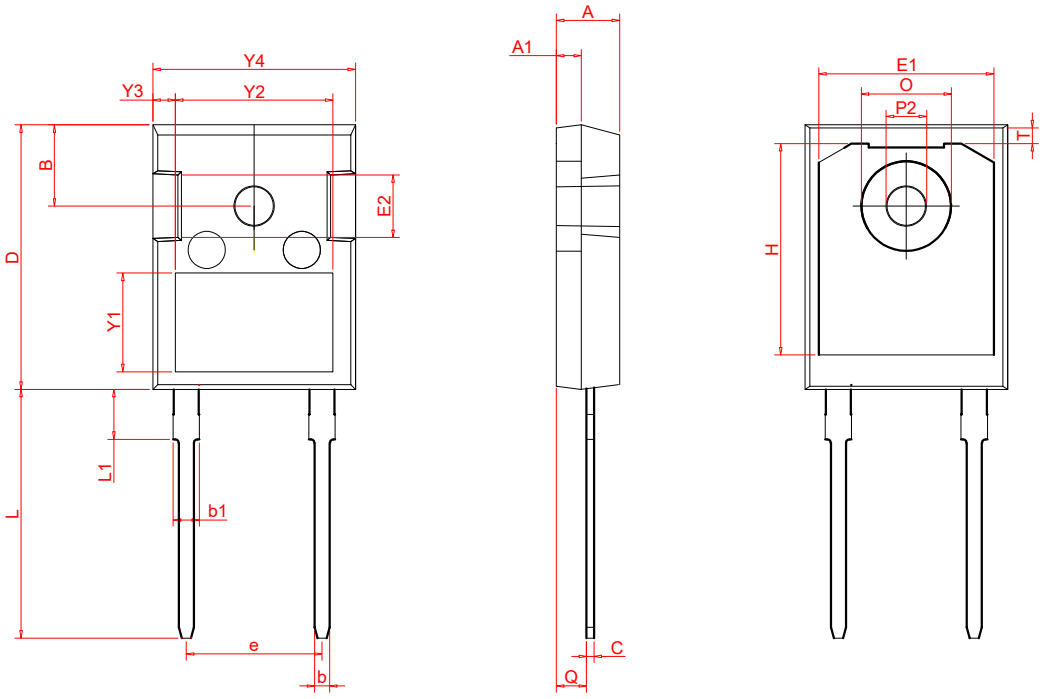
Current Derating



CSDW20H120 Transient Thermal Impedance, Junction-Case



TO-247-2L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.70	5.30	0.185	0.209
A1	1.70	2.30	0.067	0.091
C	0.45	0.75	0.018	0.030
Q	2.20	2.60	0.087	0.102
O	7.10	7.40	0.280	0.291
P2	3.45	3.75	0.136	0.148
L	19.00	21.00	0.748	0.827
L1	4.20	4.50	0.165	0.177
b	1.00	1.40	0.039	0.055
b1	1.80	2.25	0.071	0.089
e	10.65	10.95	0.419	0.431
D	20.95	21.35	0.825	0.841
Y1	7.60	8.10	0.299	0.319
Y2	11.00	13.00	0.433	0.512
Y3	1.75	2.25	0.069	0.089
Y4	16.00	16.40	0.630	0.646
E2	4.60	4.90	0.181	0.193
T	1.35REF		0.053REF	
H	16.25REF		0.640REF	
E1	14.00REF		0.551REF	
B	6.55REF		0.258REF	