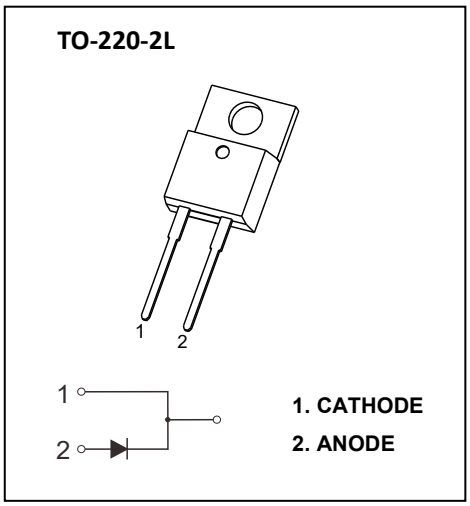
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-220-2L Plastic-Encapsulate Diode

CSD20H120 Silicon Carbide Schottky Diode



MAIN CHARACTERISTICS

I_O	20A (T_C≤117℃)
V_{RRM}	1200V
T_j	175℃
$V_{F(typ)}$	1.45V (@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

CSD20H120 = 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℃	35	A
		T_C≤100℃	23	A
		T_C≤117℃	20	A
I_{FSM}	Non-Repetitive peak forward surge current (10ms half sine wave)		188	A
$\int i^2dt$	i^2t value (t_P=10ms)		176	A^2s
P_D	Power dissipation		118	W
$R_{\Theta JC}$	Thermal Resistance From Junction to Case		1.27	℃/W
T_j	Junction temperature		-55~175	℃
T_{stg}	Storage temperature		-55~175	℃

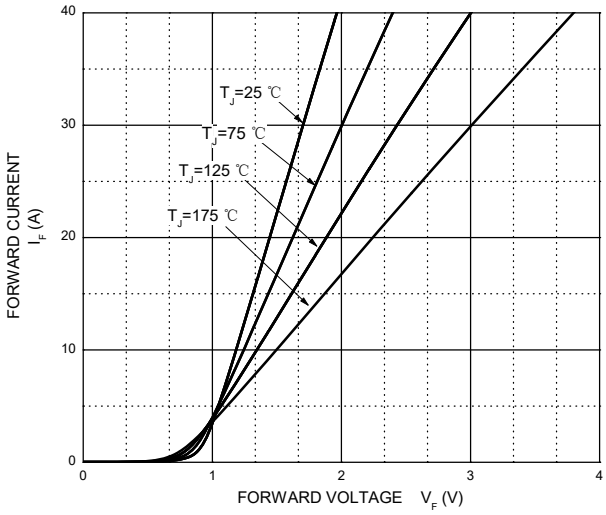
Typical Characteristics

ELECTRICAL CHARACTERISTICS(T_j=25℃ unless otherwise specified)

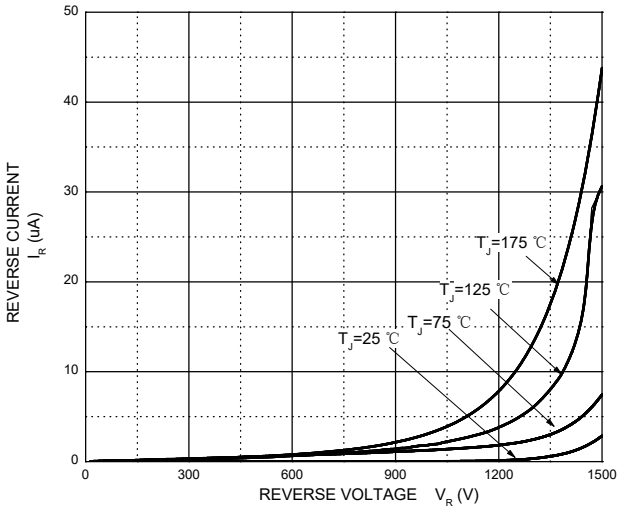
Parameter	Symbol	Testconditions		Min	Typ	Max	Unit
Reversevoltage	$V_{(BR)}$	I_R=100μA		1200			V
Reversecurrent	I_R	V_R=1200V	T_j=25℃		5	50	μA
			T_j=175℃		20	200	μA
Forwardvoltage	V_F	I_F=20A	T_j=25℃		1.45	1.8	V
			T_j=175℃		2.35	3.0	V
Total capacitance	C	V_R=0V,f=1MHz			1286		pF
		V_R=400V, f=1MHz			85		pF
		V_R=800V, f=1MHz			64		pF
Totalcapacitivecharge	Q_C	V_R=800V $Q_C=\int_0^{VR} C(V)dV$			101		nC
CapacitanceStored Energy	E_C	V_R=800V $E_C=\int_0^{VR} C(V)\cdot VdV$			31		μJ

Typical Characteristics

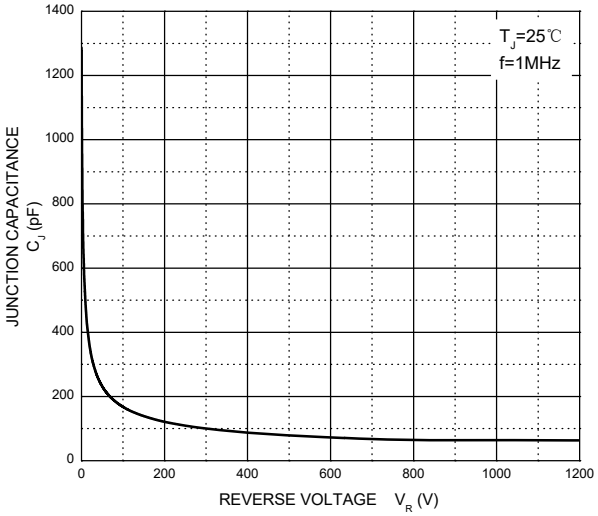
Forward Characteristics



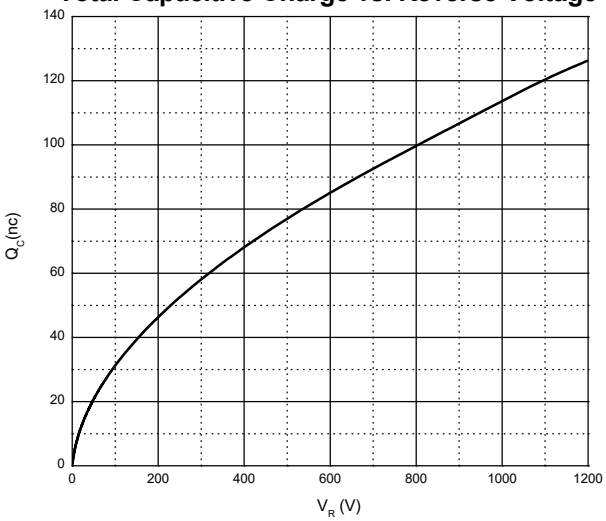
Reverse Characteristics



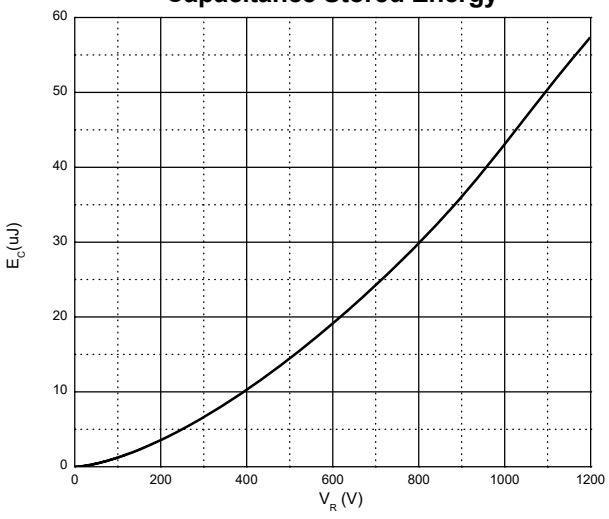
Capacitance Characteristics Per Diode



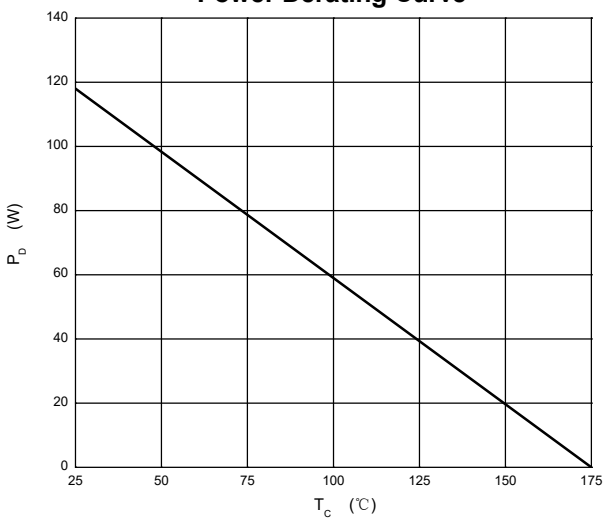
Total Capacitive Charge vs. Reverse Voltage



Capacitance Stored Energy

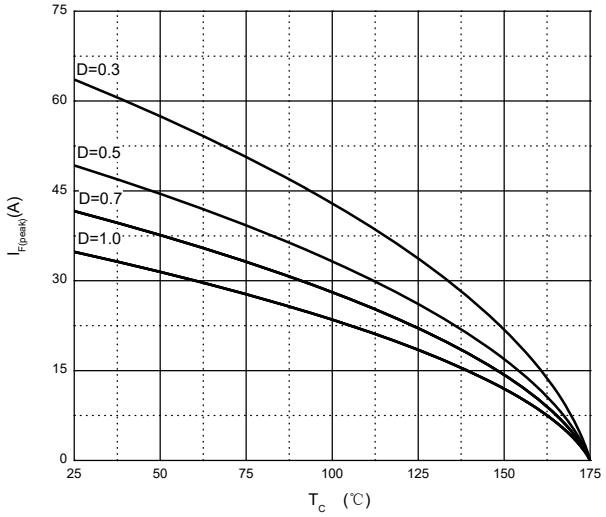


Power Derating Curve

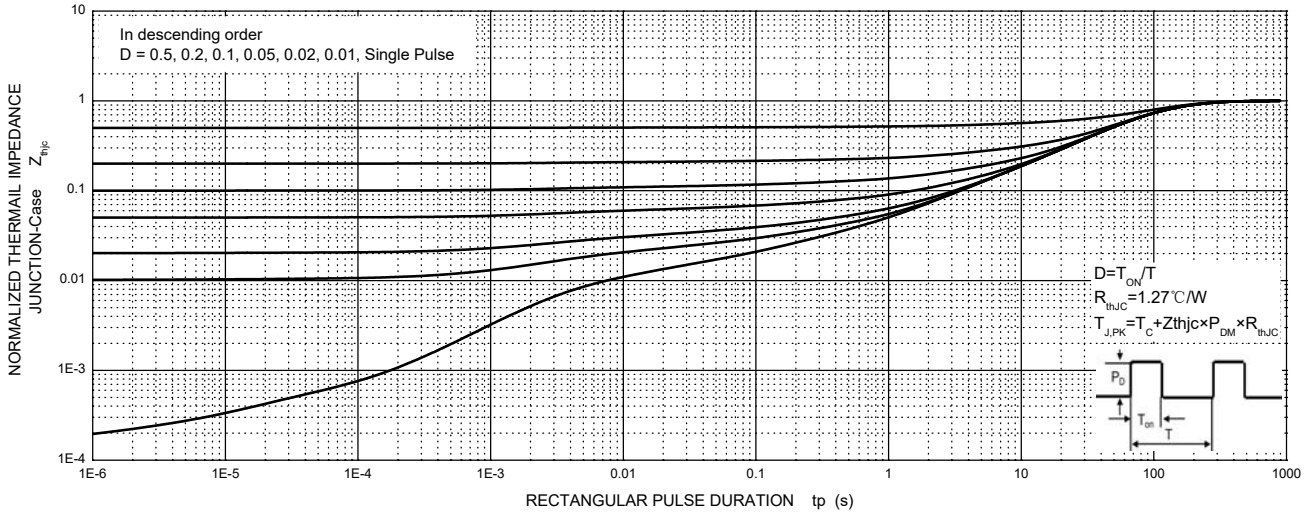


Typical Characteristics

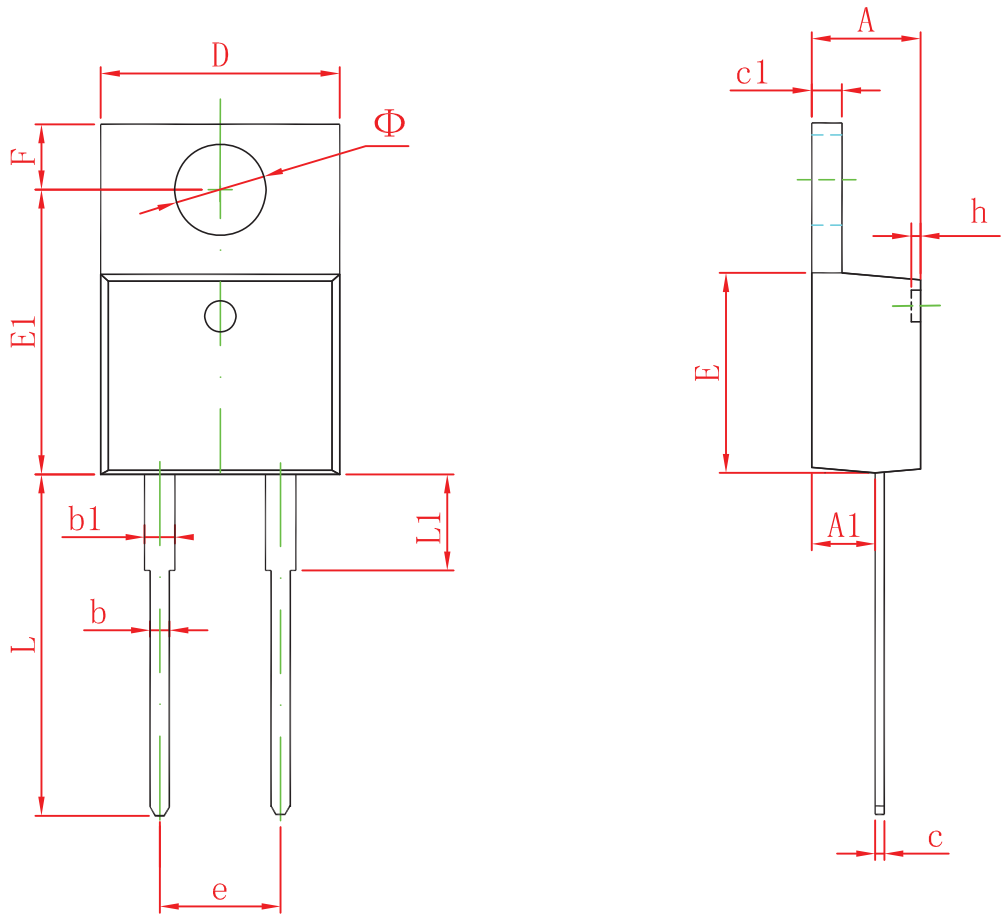
Current Derating



CSD20H120 Transient Thermal Impedance, Junction-Case



TO-220-2L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.450	4.750	0.175	0.187
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.300	0.500	0.012	0.020
c1	1.170	1.370	0.046	0.054
D	9.830	10.330	0.387	0.407
E	8.500	8.900	0.335	0.350
E1	12.050	12.650	0.474	0.498
e	5.080 TYP		0.200 TYP	
F	2.540	2.940	0.100	0.116
h	0.100 TYP		0.004 TYP	
L	13.300	13.800	0.523	0.543
L1	3.540	3.940	0.139	0.155
Φ	3.735	3.935	0.147	0.155