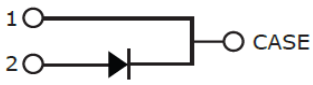
IDH02G120C5

Silicon Carbide Schottky Diode

General Description

This product family offers state of the art performance.It is designed for high frequency applications where high efficiency and high reliability are required.

TO-220-2L



Features

- Low conduction loss due to low V_F
- Extremely low switching loss by tiny Q_C
- Highly rugged due to better surge current
- Industrial standard quality and reliability

Applications

- UPS
- Power Inverter
- High performance SMPS
- Power factor correction

Part Number	Package	Marking
IDH02G120C5	TO-220-2L	I0212CY

AEC-Q101 Qualified

Maximum Ratings (T_C = 25 ˚C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V	
V_{RSM}	Surge Peak Reverse Voltage	1200	V	
V_R	DC Blocking Voltage	1200	V	
I_F	Continuous Forward Current	18 9 5	A	T_C=25˚C T_C=135˚C T_C=153˚C
I_{FRM}	Repetitive Peak Forward Surge Current	31 23	A	T_C=25˚C, t_P = 10 ms, Half Sine Wave T_C=110˚C, t_P=10 ms, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	45 35	A	T_C=25˚C, t_p = 10 ms, Half Sine Wave T_C =110˚C, t_p = 10 ms, Half Sine Wave
$\int i^2dt$	i^2dt value	10 6	A^2s	T_C = 25°C,t_p=10ms,Half Sine Pulse T_C = 110°C,t_p=10ms,Half Sine Pulse
P_{tot}	Power Dissipation	97 42	W	T_C=25˚C T_C=110˚C
T_J , T_{stg}	Operating Junction and Storage Temperature	-55 to +175	˚C	

Electrical Characteristics

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage	V_F	-	1.4	1.7	V	I_F=5A T_j=25°C
		-	2.0			T_j=175°C
Reverse Current	I_R	-	-	100	μA	V_R=1200V T_j=25°C
		-	-	200		T_j=175°C
Total Capacitive Charge	Q_C	-	24	-	nC	V_R=800V，T_j=25℃ $Q_C = \int_0^{V_R} C(V)dV$
Total Capacitance	C	-	336	-	pF	T_j=25℃, f=1MHz V_R=0V
		-	23	-		V_R=400V
		-	18	-		V_R=800V

Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.55	°C/W

Characteristics Curve

Fig 1: Forward Characteristics

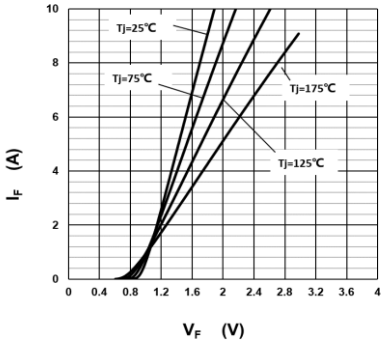


Fig 2: Reverse Characteristics

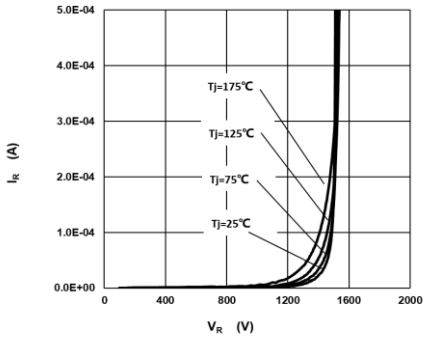


Fig 3: Current Derating

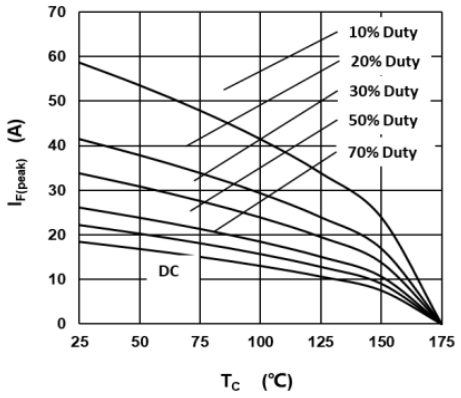


Fig 4: Power Derating

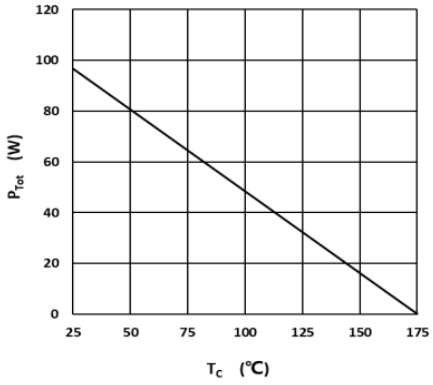


Fig 5: Capacitance vs. Reverse Voltage

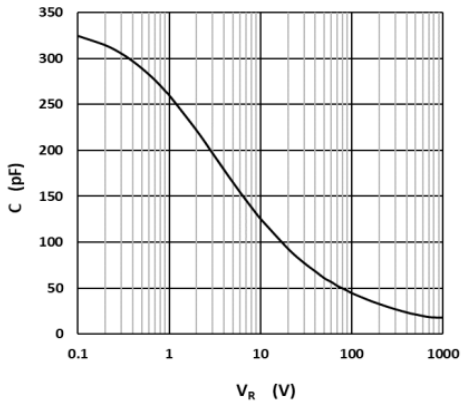


Fig 6: Reverse Charge vs. Reverse Voltage

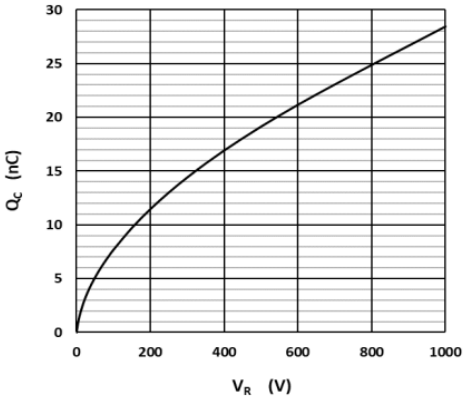


Fig 7: Typical Capacitance Stored Energy

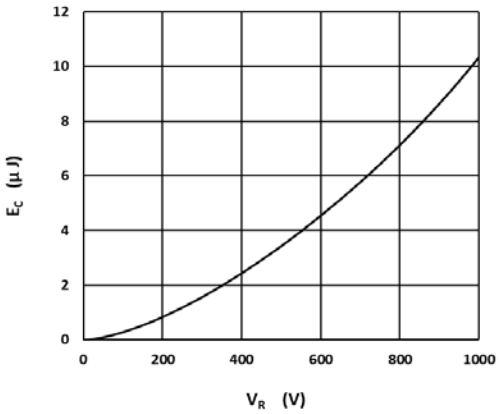
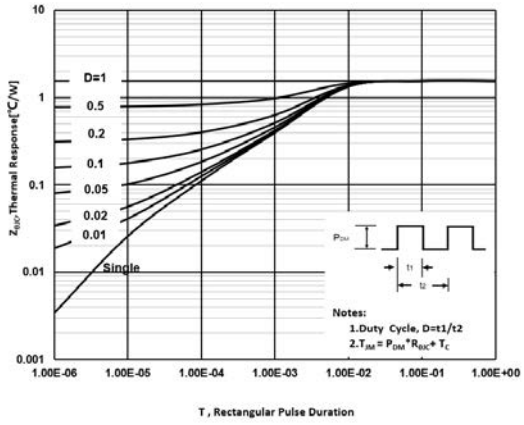
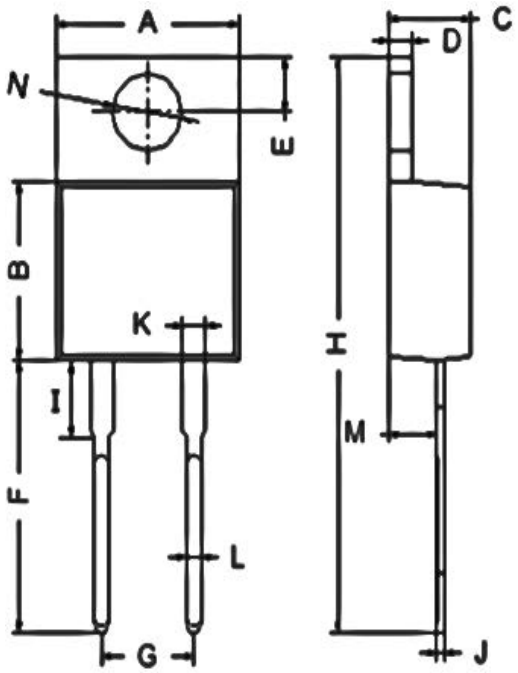


Fig 8: Transient Thermal Impandance



Package Information
TO-220-2L



POS	Millimeters	
	Min.	Max.
A	9.80	10.50
B	8.60	9.20
C	4.37	4.77
D	1.07	1.47
E	2.40	3.00
F	13.14	14.20
G	4.90	5.24
H	28.00	29.20
I	3.50	4.00
J	0.28	0.50
K	1.20	1.50
L	0.70	0.90
M	2.40	2.90
N	3.70	4.00

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