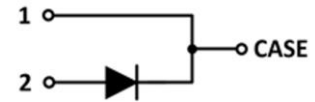
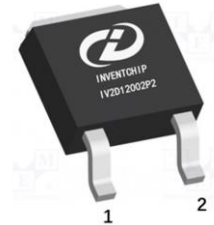


IV2D12002P2 – 1200V 2A SiC Schottky Diode

Features

- Max Junction Temperature 175°C
- High Surge Current Capacity
- Extremely Fast Reverse Recovery Time
- Reduced Losses in Associated MOSFET
- High-Frequency Operation
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient on V_F

Package



Applications

- Solar Power Boost
- Inverter Free Wheeling Diodes
- Vienna 3-Phase PFC
- EV Charger Piles
- Switch Mode Power Supplies

Part Number	Package
IV2D12002P2	TO252-2

Absolute Maximum Ratings (Tc=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{RRM}	Reverse voltage (repetitive peak)	1200	V
V_{DC}	DC blocking voltage	1200	V
I_F	Forward current (continuous) @Tc=25°C	8.1	A
	Forward current (continuous) @Tc=135°C	4.1	A
	Forward current (continuous) @Tc=163°C	2	A
I_{FSM}	Surge non-repetitive forward current sine halfwave @Tc=25°C tp=10ms	31	A
I_{FRM}	Surge repetitive forward current (Freq=0.1Hz, 100cycles) sine halfwave @Tamb=25°C tp=10ms	24	A
P_{tot}	Total power dissipation @ Tc=25°C	57.6	W
	Total power dissipation @ Tc=150°C	9.6	
$\int i^2 dt$	i^2t value @Tc=25°C tp=10ms	4.8	A ² s
Tstg	Storage temperature range	-55 to 175	°C
Tj	Operating junction temperature range	-55 to 175	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V _F	Forward Voltage	1.45	1.65	V	I _F = 2 A T _J =25°C	Fig. 1
		2.15	2.5		I _F = 2 A T _J =175°C	
I _R	Reverse Current	1	10	μA	V _R = 1200 V T _J =25°C	Fig. 2
		5	50		V _R = 1200 V T _J =175°C	
C	Total Capacitance	107		pF	V _R = 1 V, T _J = 25°C, f = 1 MHz	Fig. 3
		9.3			V _R = 400 V, T _J = 25°C, f = 1 MHz	
		6.8			V _R = 800 V, T _J = 25°C, f = 1 MHz	
Q _c	Total Capacitive Charge	9.9		nC	V _R = 800 V, T _J = 25°C, $Q_c = \int_0^{V_R} C(V) dV$	Fig. 4
E _c	Capacitance Stored Energy	2.81		μJ	V _R = 800 V, T _J = 25°C, $E_c = \int_0^{V_R} C(V) \cdot V dV$	Fig. 5

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
R _{th(j-c)}	Thermal Resistance from Junction to Case	2.6	°C/W	Fig.7

Typical Performance

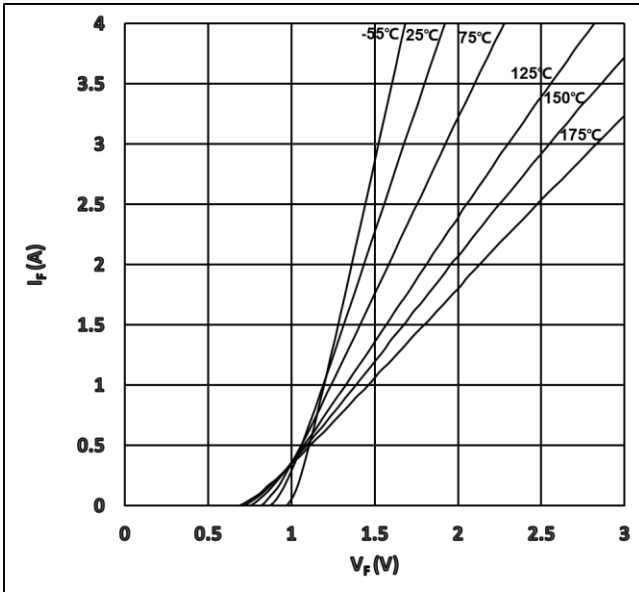


Figure 1. Typical Forward Characteristics

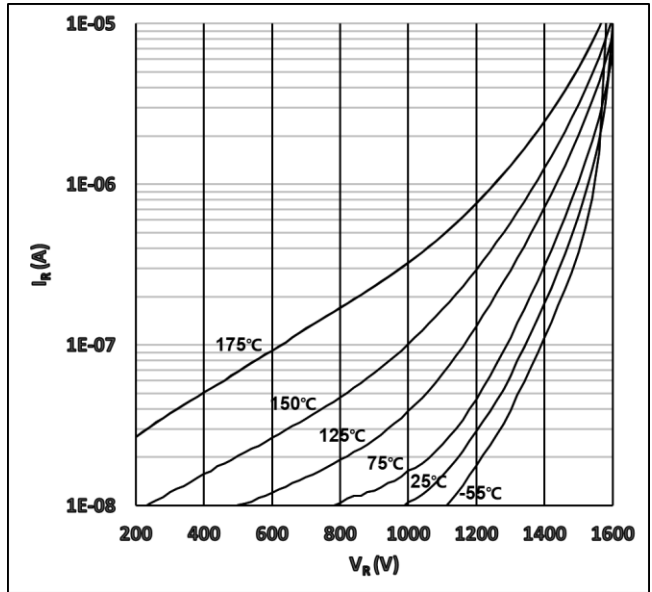


Figure 2. Typical Reverse Characteristics

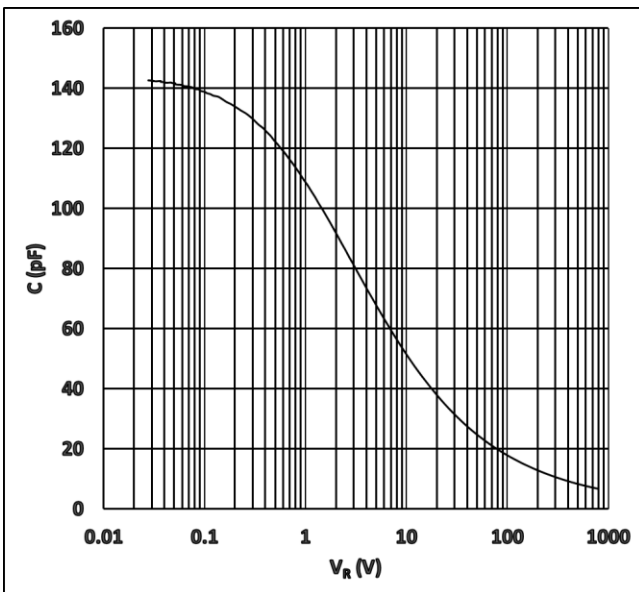


Figure 3. Capacitance vs. Reverse Voltage

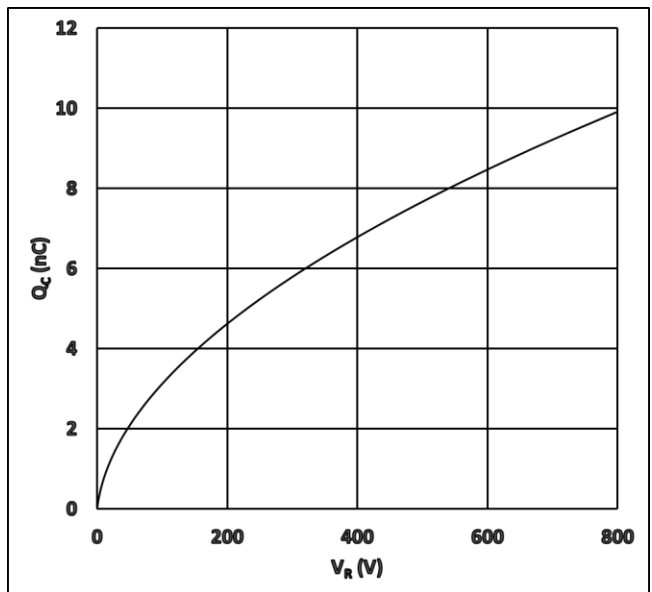


Figure 4. Recovery Charge vs. Reverse Voltage

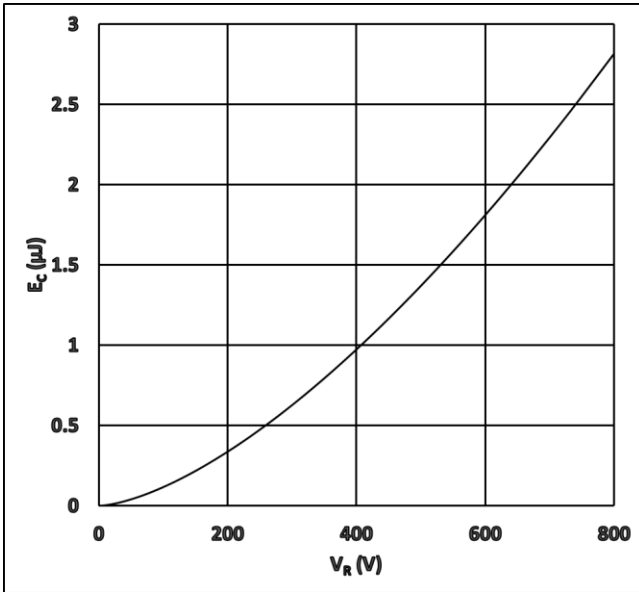


Figure 5. Capacitance Stored Energy

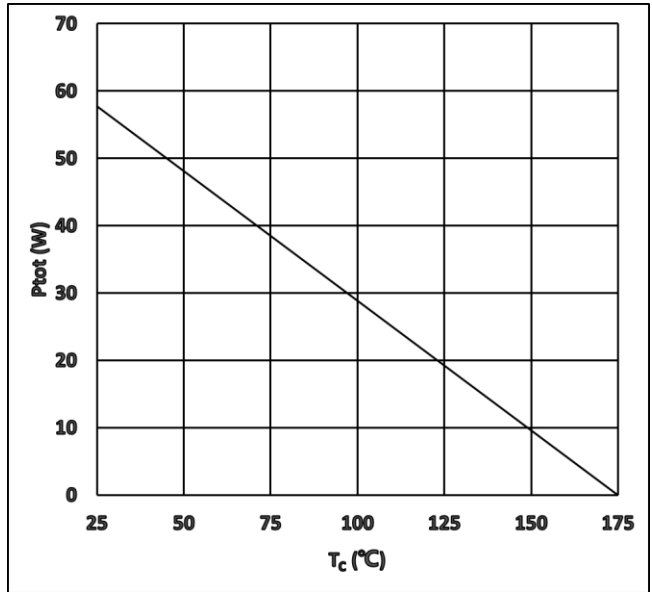


Figure 6. Power Derating

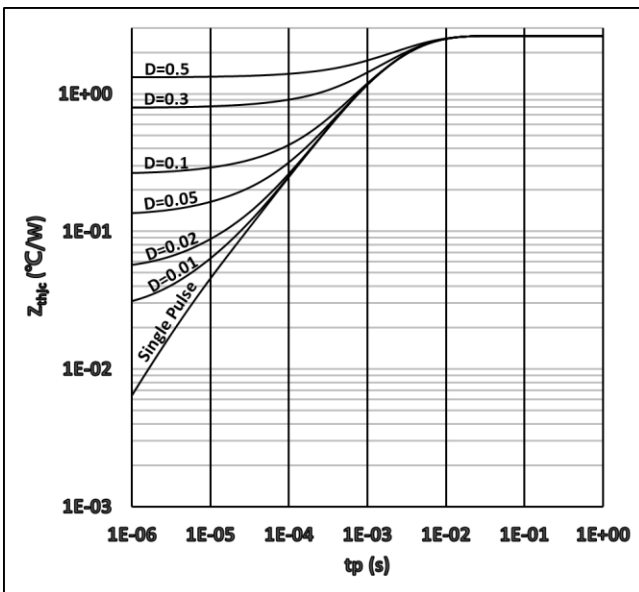


Figure 7. Transient Thermal Impedance

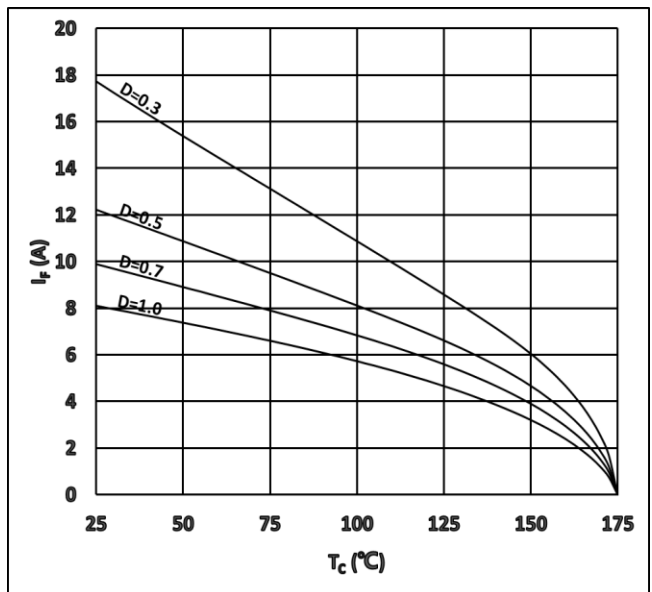
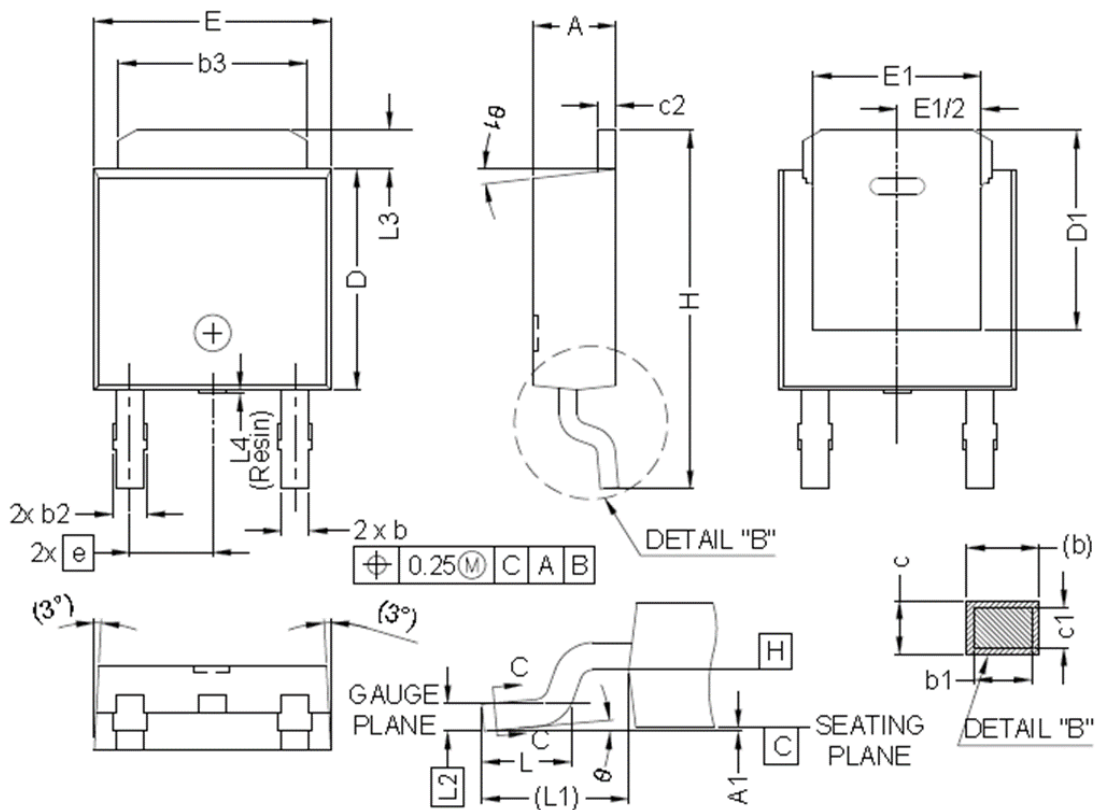


Figure 8. I_F as a Function of Temp.

Package Dimensions



SYMBOL	MIN.	MAX.	SYMBOL	MIN.	MAX.
A	2.18	2.39	E	6.35	6.73
A1	0.00	0.13	E1	4.32	4.80
b	0.65	0.89	e	2.29 BSC	
b1	0.64	0.84	H	9.94	10.34
b2	0.76	1.13	L	1.50	1.78
b3	4.95	5.46	L1	2.74 REF	
c	0.46	0.61	L2	0.51 BSC	
c1	0.41	0.56	L3	0.89	1.27
c2	0.46	0.60	L4	0.00	0.50
D	5.97	6.35	θ	0°	10°
D1	5.21	5.70	θ1	0°	15°

Note:

1. All Dimensions Are In mm. Angles Are In Degrees.
2. Heat Sink Side Flash Is MAX. 0.8mm.
3. Radius On Terminal Is Optional.

Notes

For further information please contact IVCT's Sales Office.

Copyright©2021 InventChip Technology Co., Ltd. All rights reserved.

Related Links

<http://www.inventchip.com.cn>

