



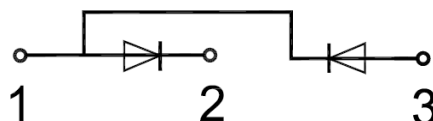
DD300HF120T1WH

Diode Module

Features:

- Low V_F
- Low I_{RR}
- Soft Reverse Recovery
- High Surge Current Capability
- Low Inductance Package
- Lead Free, Compliant with RoHS Requirement

Circuit Diagram



Applications:

- Switch Mode Power Supplies
- Hard Switched PFC Boost Diode
- UPS Free Wheeling Diode
- Motor Drive FW
- SMPS FW

Absolute Maximum Ratings ($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Description		Values	Units
V_{RRM}	Repetitive Peak Reverse Voltage		1200	V
I_F	DC Forward Current	$T_C=100^{\circ}\text{C}$	300	A
I_{FRM}	Repetitive Peak Forward Current	$t_p=1\text{ms}$	600	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}\text{C}$, $T_J=175^{\circ}\text{C}$	1130	W



Electrical Characteristics of Diode (T_J=25°C unless otherwise specified)

Symbol	Description	Test conditions		Min.	Typ.	Max.	Units	
V _R	Cathode to Anode Breakdown Voltage	I _R =100μA	T _J =25°C	1200			V	
V _{FM}	Forward Voltage	I _F =300A	T _J =25°C		2.80	3.00	V	
			T _J =125°C		2.80		V	
I _{RM}	Maximum Reverse Leakage Current	V _R =1200V	T _J =25°C			1	mA	
			T _J =125°C			5	mA	
t _{rr}	Reverse Recovery Time	V _R =600V I _F =300A -diF/dt=3500A/μs (T _J =125°C),	T _J =25°C		160		ns	
			T _J =125°C		300			
I _{rr}	Peak Reverse Recovery Current		T _J =25°C		135.9		A	
			T _J =125°C		182.7			
Q _{rr}	Reverse Recovery Charge		T _J =25°C		11.3		μC	
			T _J =125°C		22.9			
E _{rec}	Reverse Recovery Energy		T _J =25°C		3.5		mJ	
			T _J =125°C		8.4			
R _{θJC}	Diode Thermal Resistance: Junction-to-Case					0.11	°C/W	

Module

Symbol	Description		Min.	Typ.	Max.	Units
V _{iso}	Isolation Voltage (All Terminals Shorted)	RMS, f=50Hz, 30s	4500			V
T _{VJ}	Maximum Junction Temperature				150	°C
T _{JOP}	Maximum Operating Temperature		-40		+150	°C
T _{stg}	Storage Temperature		-40		+125	°C
CTI	Comparative Tracking Index		200			
R _{θCS}	Case-to-Sink Thermally (Conductive Grease Applied)				0.07	°C/W
T	Power Terminals Screw:M6		4.0		6.0	N·m
	Mounting Screw:M6		4.0		6.0	N·m
G	Weight of Module			155		g



Ordering Information Table

Device code	DD	300	HF	120	T1W	H
	①	②	③	④	⑤	⑥

- ① - Fast Recovery Diode Module
- ② - Rated Current (300=300A)
- ③ - Circuit Configuration (Half Bridge)
- ④ - Rated Voltage (120=1200V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)

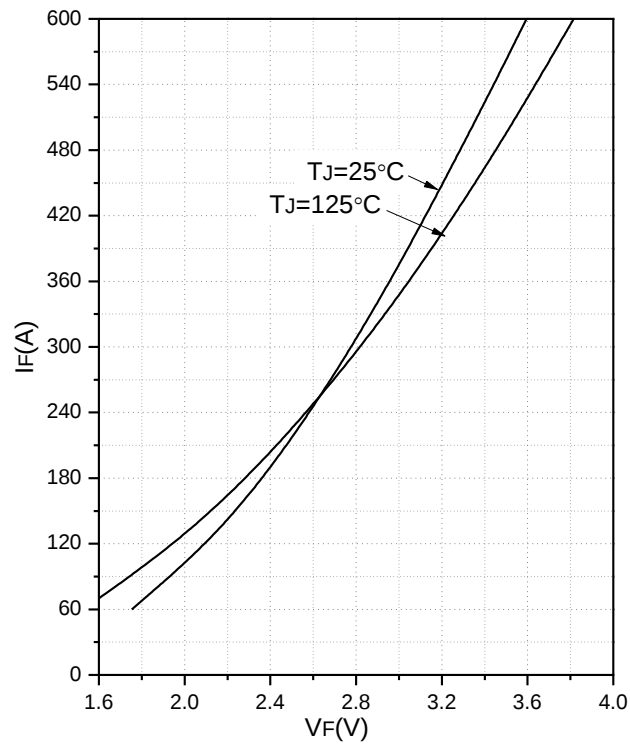


Fig.1 Forward Characteristics of Diode

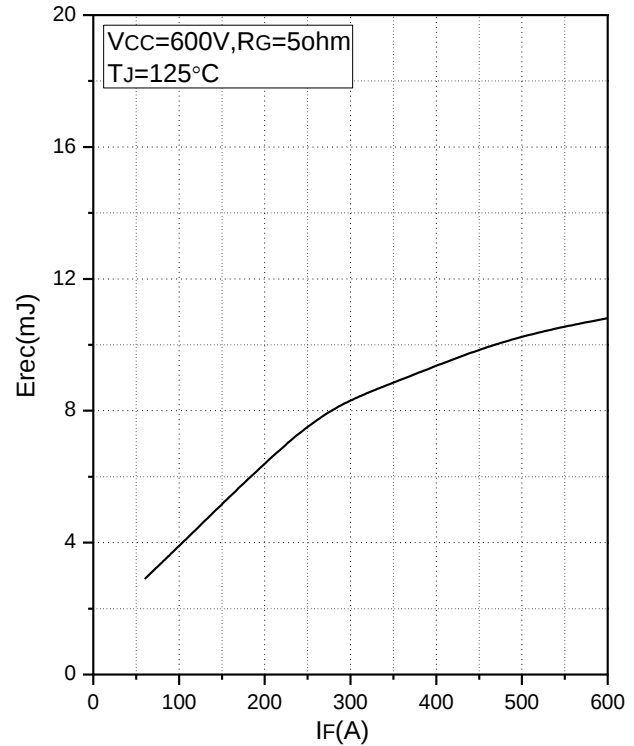


Fig.2 Typical Switching Loss vs. Forward Current

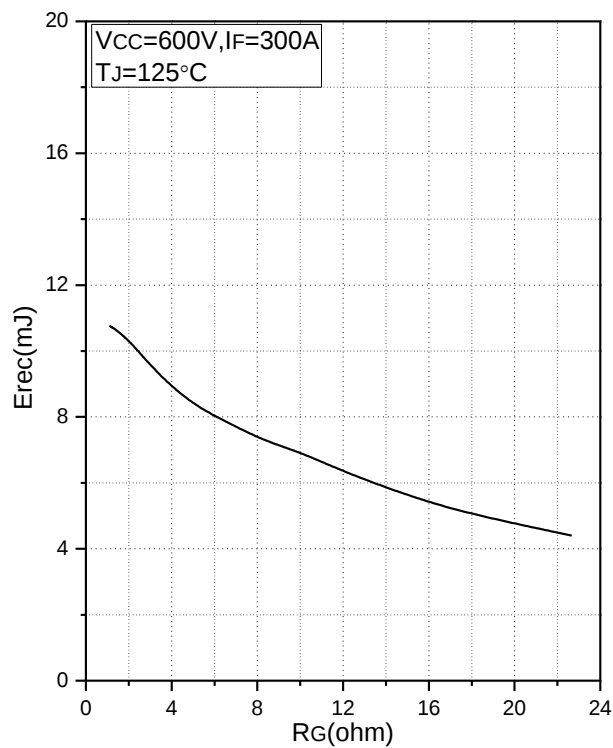


Fig.3 Typical Switching Loss vs. Gate Resistance

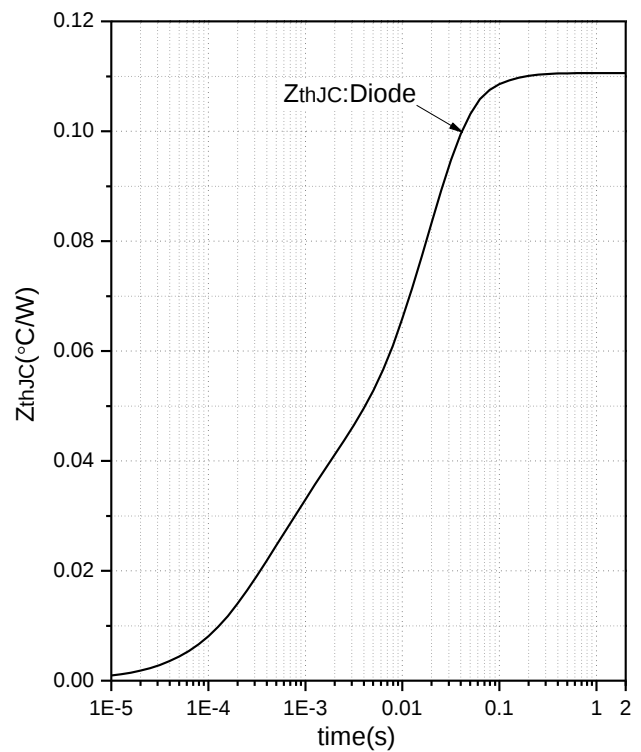
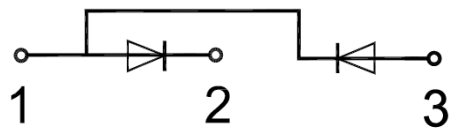


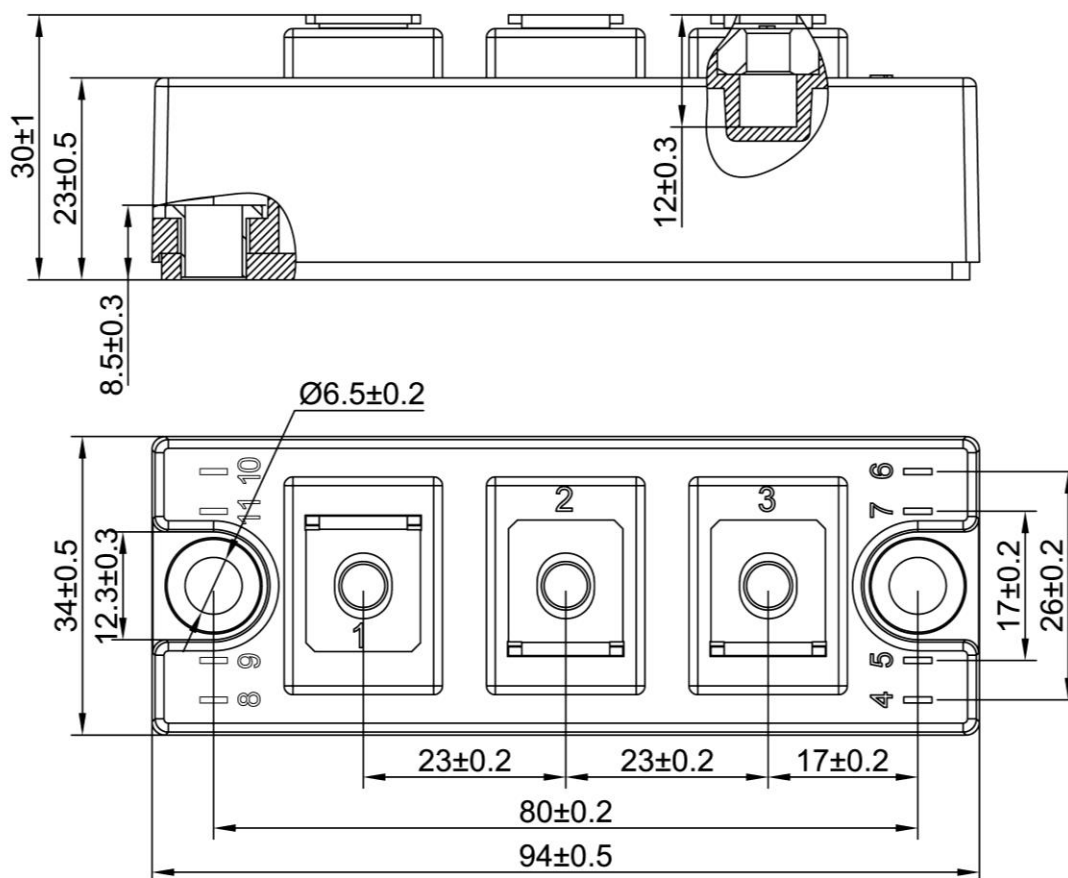
Fig.4 Transient Thermal Impedance



Internal Circuit Diagram:



Package Outline (Unit: mm):





Date	Revision	Notes
10/11/2024	A	Final Version

Announcement

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