



DD600SD120T2ZH

Fast Diode Module

Preliminary Data

Features:

- Fast Recovery Diode
- Low Q_{rr}
- Copper Base Plate
- Al₂O₃ Substrate with Low Thermal Resistance
- Lead Free, Compliant with RoHS Requirement

Circuit Diagram



Applications:

- Freewheeling Diodes for IGBT
- Freewheeling Diode for Inductive Load
- Brake Choppers
- Inverters and DC Choppers
- AC Motor Control
- Boost Choppers

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

V_{RRM}	Repetitive Peak Reverse Voltage	$T_J=25^{\circ}\text{C}$	1400	V
I_F	Continuous DC Forward Current		600	A
I_{FRM}	Repetitive Peak Forward Current	$t_P=1\text{ms}$	1200	A
I^2t	I^2t -Value	$V_R=0\text{V}$, $t_P=10\text{ms}$, $T_J=125^{\circ}\text{C}$	318000	A^2s
P_D	Maximum Power Dissipation	$T_J=125^{\circ}\text{C}$	1920	W



Electrical Characteristics (T_C=25°C unless otherwise specified)

Symbol	Description	Conditions		Min.	Typ.	Max.	Units
V _{FM}	Forward Voltage	I _F =600A, -di _F /dt=2000A/μs(T _J =125°C), V _R =600V	T _J =25°C		2.80	3.10	V
			T _J =125°C		3.00		
t _{rr}	Reverse Recovery Time		T _J =25°C		220		ns
			T _J =125°C		320		
I _{rr}	Peak Reverse Recovery Current		T _J =25°C		140		A
			T _J =125°C		260		
Q _{rr}	Reverse Recovery Charge		T _J =25°C		10.7		μC
			T _J =125°C		33.6		
E _{rec}	Reverse Recovery Energy		T _J =25°C		13.2		mJ
			T _J =125°C		26.5		
R _{θJC}	Diode Thermal Resistance: Junction-To-Case (Diode)					0.065	°C/W

Module

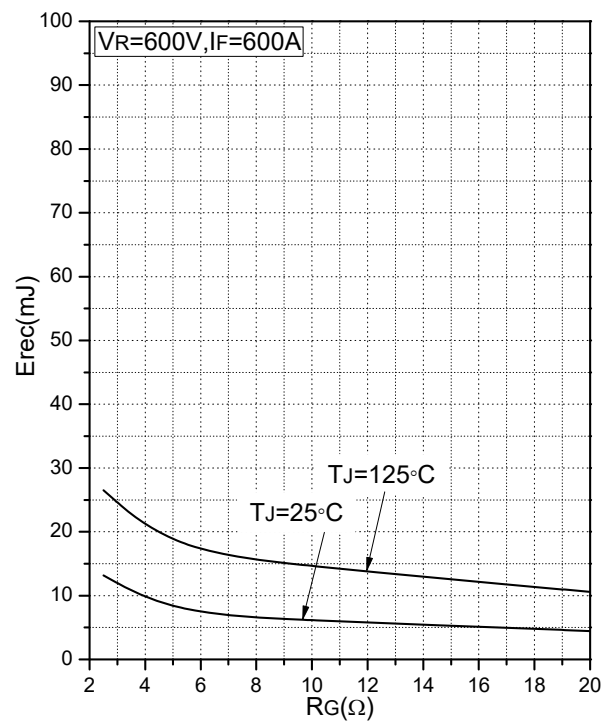
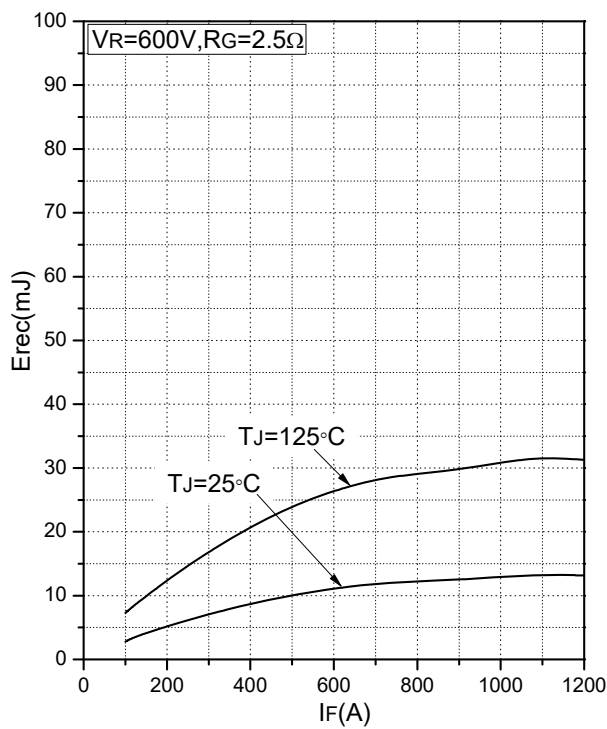
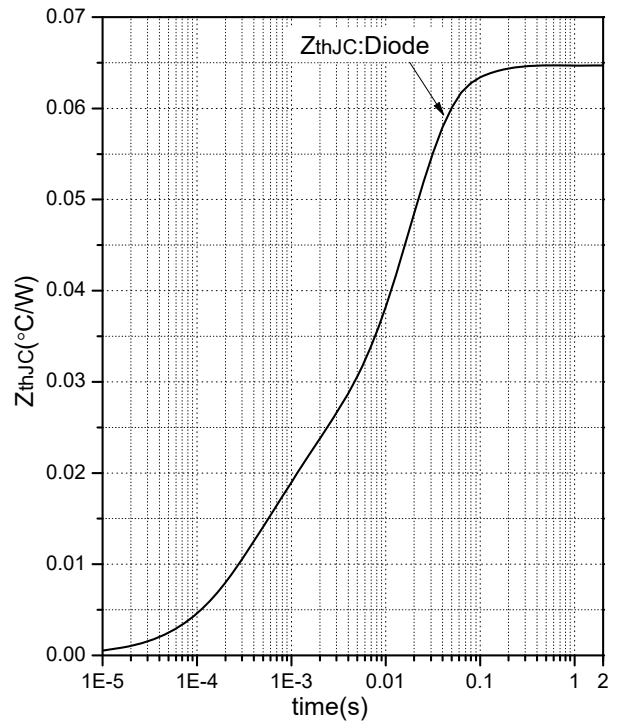
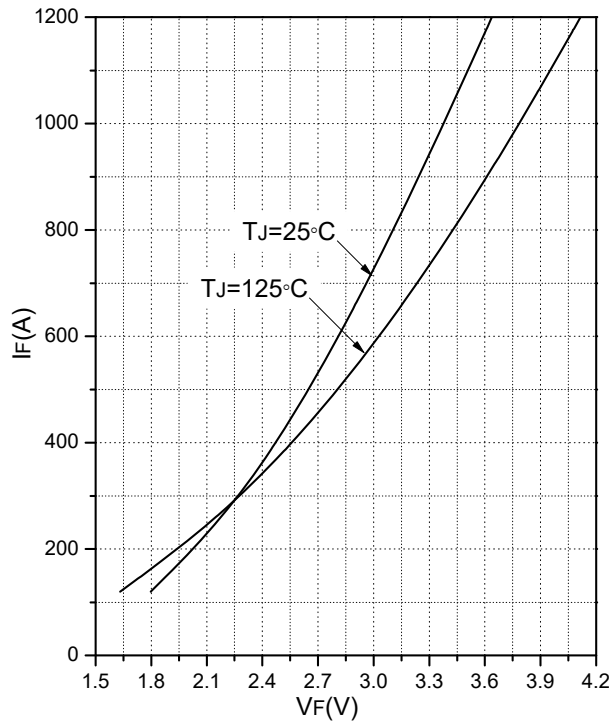
Symbol	Description	Min.	Typ.	Max.	Units
V _{iso}	Isolation Voltage (All Terminals Shorted)	RMS, f=50Hz, 30s		4500	V
T _J	Maximum Junction Temperature			150	°C
T _{JOP}	Maximum Operating Junction Temperature Range	-40		+150	°C
T _{stg}	Storage Temperature	-40		+125	°C
CTI	Comparative Tracking Index	200			
R _{θCS}	Case-To-Sink Thermally (Conductive Grease Applied)			0.03	°C/W
T	Signal Terminals Screw:M4	1.1		2.0	N·m
	Power Terminals Screw:M6	2.5		5.0	N·m
T	Mounting Screw:M6	3.0		6.0	N·m
G	Weight		320		g



Ordering Information Table

Device code	DD	600	SD	120	T2Z	H
	①	②	③	④	⑤	⑥

- ① - Fast Recovery Diode Module
- ② - Rated Current (600=600A)
- ③ - Circuit Configuration (SD=Single Switch)
- ④ - Rated Voltage (120=1200V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)

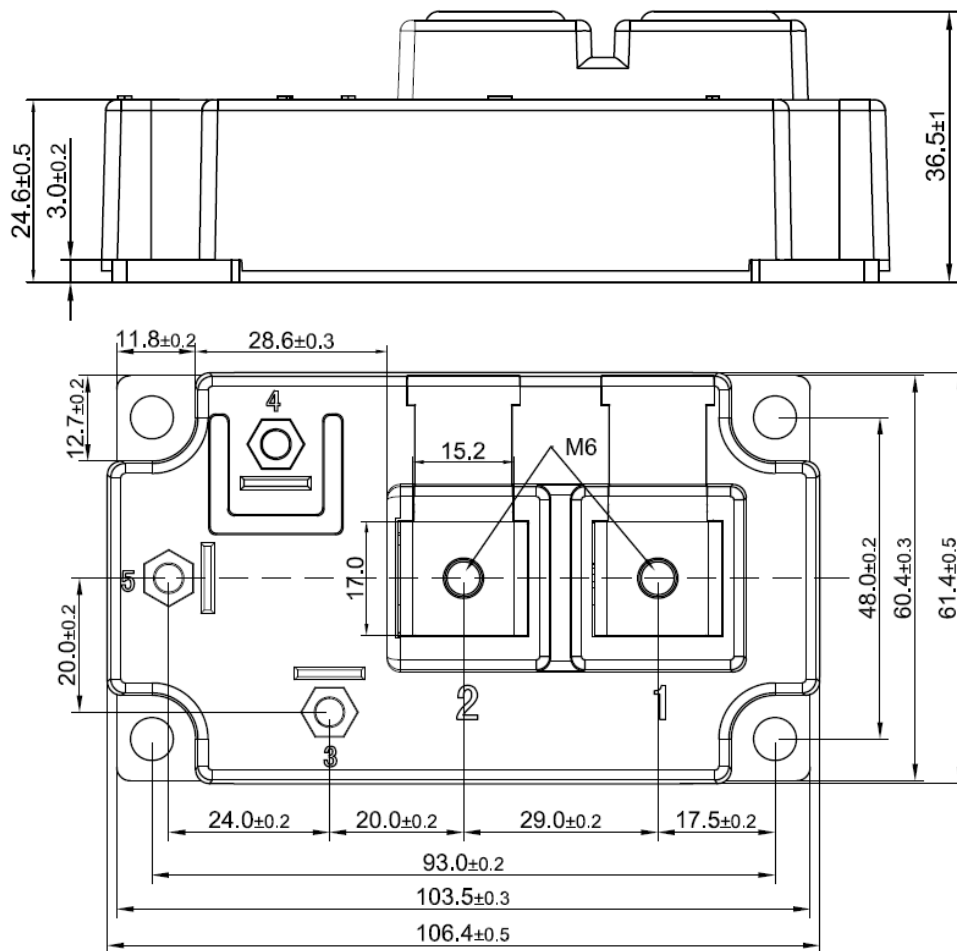




Internal Circuit:



Package Outline (Unit: mm):





Date	Revision	Notes
09/07/2019	01	Initial Release.
10/07/2023	02	Updated Repetitive Peak Reverse Voltage.

Announcements

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The datasheet with “REV.” + “Arabic numerals” is based on engineering data for initial reference purpose only.

The released datasheet would be issued with “REV.” + “alphabet characters”.