



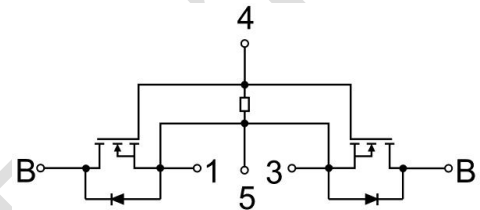
MM600SG08A9H

MOSFET Module

Features:

- Improved Gate, Avalanche and Dynamic dv/dt Ruggedness
- Excellent Gate Charge and Low On-Resistance $R_{DS(on)}$
- 100% Avalanche Tested
- Lead-Free Halogen-Free

Circuit Diagram



Applications:

- Hard Switched and High Frequency Circuits
- Main And Auxiliary AC Drives

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

Symbol	Description		Values	Units
V_{DSS}	Drain-Source Blocking Voltage		85	V
V_{GSS}	Gate-Source Voltage		± 20	V
I_D	Continuous Drain Current, $V_{GS}=10V$	$T_C=25^\circ\text{C}$	600	A
		$T_C=80^\circ\text{C}$	500	A
I_{DM}	Pulsed Drain Current	Pulse Width Limited by Max. Junction Temperature	2400	A
I_S	Continuous Source Current(Body Diode)		600	A
I_{SM}	Pulsed Source Current	Pulse Width Limited by Max. Junction Temperature	2400	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ $T_{Jmax}=175^\circ\text{C}$	590	W



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

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
V _{GS(th)}	Gate Threshold Voltage	I _D =500uA, V _{DS} =V _{GS}	2.0	3.2	4.0	V
R _{DS(on)}	Static Drain-Source On-Resistance	I _D =300A, V _{GS} =10V		0.75	1.0	mΩ
I _{DSS}	Drain-Source Leakage Current	V _{DS} =V _{DSS} , V _{GS} =0V			100	uA
I _{GSS}	Gate- Source Leakage Current	V _{GS} =V _{GSS} , V _{DS} =0V		20		uA
R _{G-S}	Module Internal Gate-Source Resistor			1		MΩ
V _{SD}	Forward Voltage	I _S =40A, V _{GS} =0V, T _J =25℃		0.8	1.2	V
C _{iss}	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=100kHz		29.6		nF
C _{Oss}	Output Capacitance			4.02		nF
C _{rss}	Reverse Transfer Capacitance			0.24		nF
R _{θJC}	MOSFET Thermal Resistance: Junction-to-Case				0.21	℃/W
R _{θCS}	Case-to-Sink Thermally (Conductive Grease Applied)				0.12	℃/W

Module

Symbol	Description		Min.	Typ.	Max.	Units
V _{iso}	Isolation Voltage (All Terminals Shorted)	AC 50Hz, RMS, 1min, I _{ISOL} ≤1mA	2500			V
Internal Isolation			Al ₂ O ₃			
T _{Jmax}	Maximum Junction Temperature				150	°C
T _{JOP}	Operating Junction Temperature Range		-40		+150	°C
T _{stg}	Storage Temperature Range		-40		+125	°C
CTI	Comparative Tracking Index		200			
T	Power Terminal Screw:M5		3.0		5.0	N·m
T	Mounting Screw:M6		4.0		6.0	N·m
G	Weight			93		g



Ordering Information Table

Device code	MM	600	SG	08	A9	H
	①	②	③	④	⑤	⑥

- ① - MOSFET Module
- ② - Rated Current (600=600A)
- ③ - Circuit Configuration (Single)
- ④ - Rated Voltage (08=80V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)

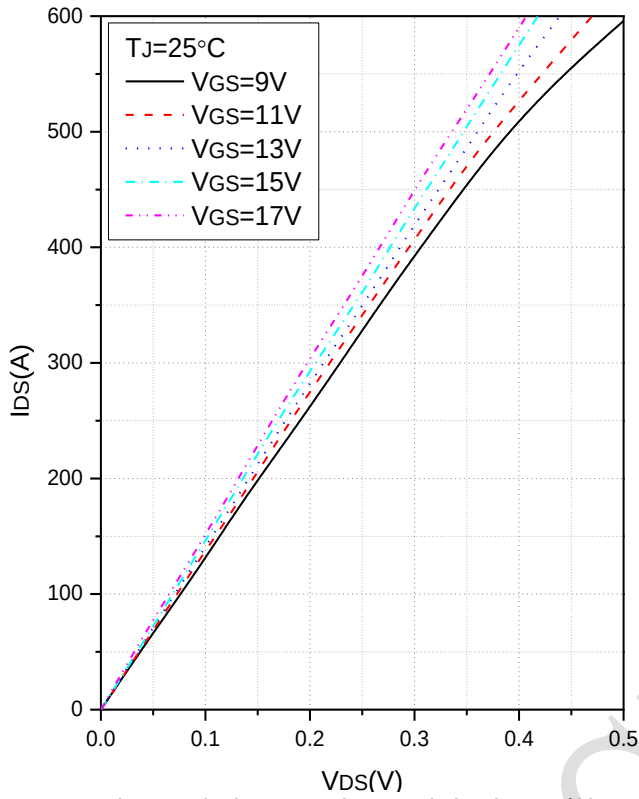


Fig.1 Typical Output Characteristics ($T_J = 25^\circ\text{C}$)

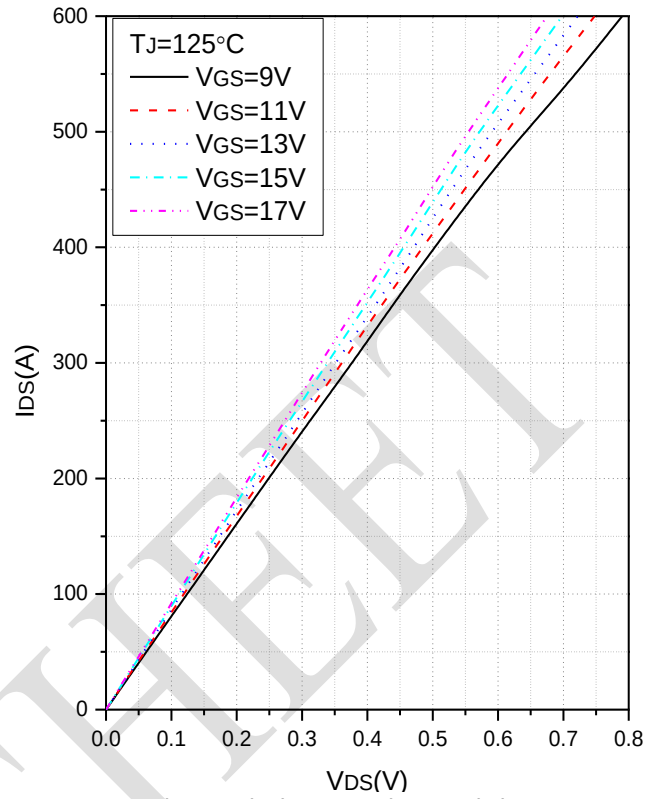


Fig.2 Typical Output Characteristics

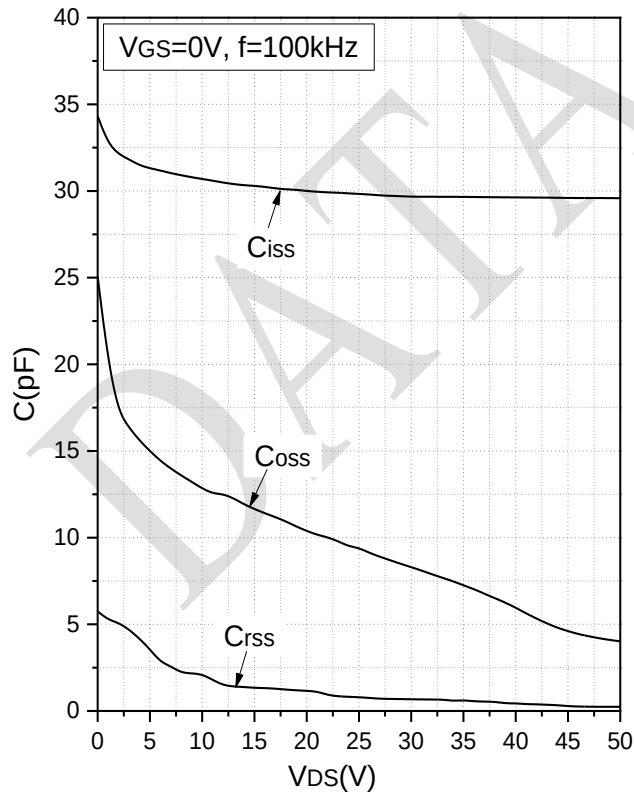


Fig.3 Capacitance Characteristics

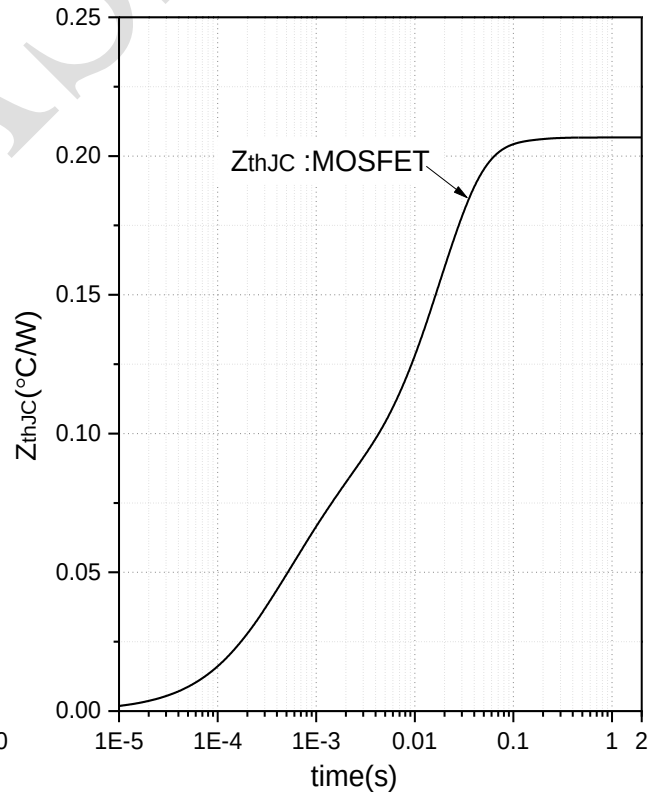


Fig.4 Transient Thermal Impedance



Date	Revision	Notes
08/19/2020	01	Initial Release
10/28/2020	A	Final Version
12/23/2021	B	Added 'Ordering Information Table'
08/29/2022	C	Added 'Capacitance Characteristics'

Announcement

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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".