



MM340HF15T2NHD

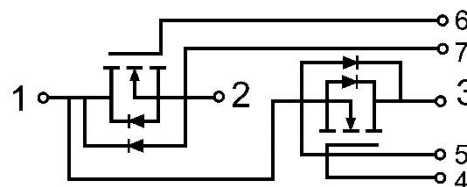
MOSFET Module

Preliminary Data

Features:

- Improved Gate, Avalanche and Dynamic dv/dt Ruggedness
- Fully Characterized Capacitance and Avalanche SOA
- Enhanced body diode dV/dt and dI/dt Capability
- Lead-Free

Circuit Diagram



Applications:

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

MOSFET

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

Symbol	Description		Value	Units
V_{DS}	Drain-Source Blocking Voltage		150	V
V_{GS}	Gate-Source Voltage		± 20	V
I_D	Continuous Drain Current, $V_{GS}=10\text{V}$	$T_C=100^{\circ}\text{C}$	340	A
		$T_C=25^{\circ}\text{C}$	680	A
I_{DM}	Peak Drain Current Repetitive	$T_J=25^{\circ}\text{C}$	1360	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}\text{C}$ $T_{Jmax}=175^{\circ}\text{C}$	1070	W



Electrical Characteristics of MOSFET ($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Static characteristics

Symbol	Description	Conditions	Min.	Typ.	Max.	Units
$V_{GS(th)}$	Gate Threshold Voltage	$I_D=3\text{mA}$, $V_{DS}=V_{GS}$	3.0	4.0	5.0	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$I_D=340\text{A}$, $V_{DS}=10\text{V}$	$T_J=25^{\circ}\text{C}$	3.30		$\text{m}\Omega$
			$T_J=125^{\circ}\text{C}$	6.30		$\text{m}\Omega$
			$T_J=150^{\circ}\text{C}$	7.00		$\text{m}\Omega$
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=V_{DSS}$, $V_{GS}=0\text{V}$, $T_J=25^{\circ}\text{C}$			1	mA
I_{GSS}	Gate- Source Leakage Current	$V_{GS}=\pm 20\text{V}$, $V_{DS}=0\text{V}$, $T_J=25^{\circ}\text{C}$			± 200	nA
$R_{G(int)}$	Internal Gate Resistor			4.7		Ω
$R_{\theta JC}$	MOSFET Thermal Resistance: Junction-to-Case (Per Mos)				0.14	$^{\circ}\text{C}/\text{W}$

Diode

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

V_{RRM}	Repetitive Peak Reverse Voltage	$T_J=25^{\circ}\text{C}$	150	V
I_F	Diode Continuous Forward Current	$T_C=80^{\circ}\text{C}$	340	A
I_{FM}	Peak FWD Current Repetitive	$t_p=1\text{ms}$	680	A

Diode Characteristics ($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Description	Conditions		Min.	Typ.	Max.	Units
V _F	Diode Forward Voltage	I _F =340A	T _J =25℃		0.95		V
			T _J =125℃		0.85		V
			T _J =150℃		0.80		V
t _{rr}	Reverse Recovery Time	I _F =340A di/dt=400A/μs T _J =25℃			50		ns
Q _{rr}	Reverse Recovery Charge				1.0		uC
RθJC	Diode Thermal Resistance: Junction-to-Case（Per Diode）					0.28	℃/W



Module

Symbol	Description		Min.	Typ.	Max.	Units
V _{iso}	Isolation Voltage (All Terminals Shorted)	f=50Hz, 1minute	2500			V
T _J	Maximum Junction Temperature				175	°C
T _{JOP}	Maximum Operating Junction Temperature Range		-40		+150	°C
T _{stg}	Storage Temperature		-40		+125	°C
R _{θCS}	Case-to-Sink Thermally (Conductive Grease Applied)				0.03	°C/W
M	Power Terminals Screw:M6		3.0		5.0	N·m
M	Mounting Screw:M6		4.0		6.0	N·m
G	Weight			300		g

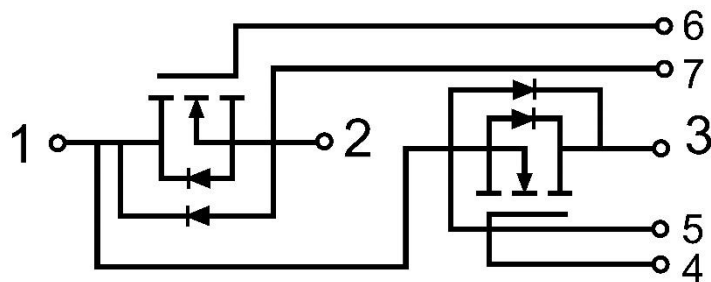
Ordering Information Table

Device code	MM	340	HF	15	T2N	H	D
	①	②	③	④	⑤	⑥	⑦

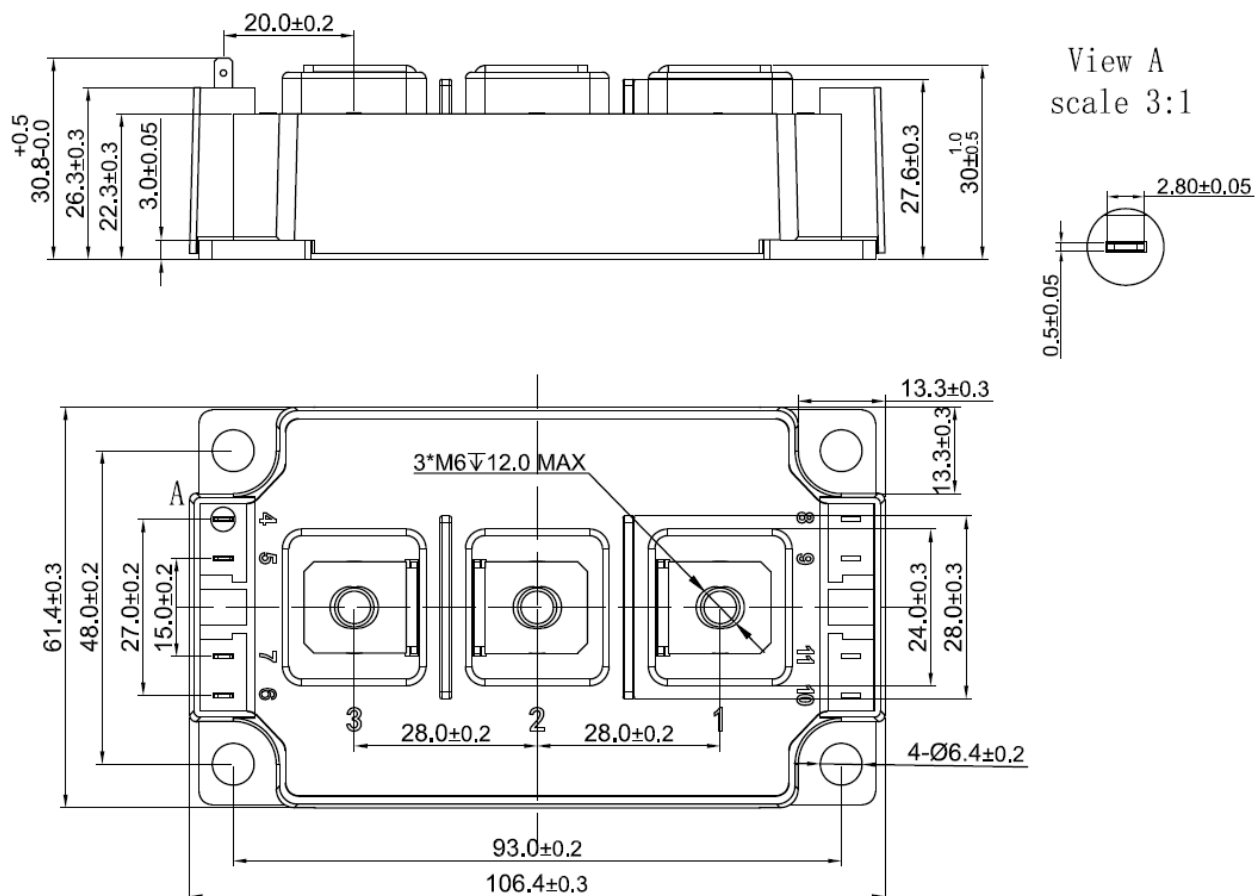
- ① - MOSFET Module
- ② - Rated Current (340=340A)
- ③ - Circuit Configuration (Half Bridge)
- ④ - Rated Voltage (15=150V)
- ⑤ - Package Type
- ⑥ - Test Level (Pass the Important Reliability Test-Industrial Grade)
- ⑦ - Internal Code



Internal Circuit



Package Outline (Unit: mm):





Revision	Notes
01	Initial Release

Announcements

Information in this document is believed to be accurate and reliable. However, NJSME does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

Right to Make Changes

NJSME reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

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”.