

MCH6662



ON Semiconductor®

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Power MOSFET 20V, 160mΩ, 2A, Dual N-Channel

Features

- ON-Resistance $N_{ch} : R_{DS(on)1} = 120m\Omega$ (typ)
- 1.8V Drive
- ESD Diode - Protected Gate
- Pb-Free, Halogen Free and RoHS Compliance

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Value	Unit
Drain-to-Source Voltage	V_{DSS}		20	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		2.0	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	8.0	A
Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² × 0.8mm) 1unit	0.8	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°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.

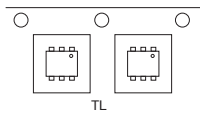
Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Ambient When mounted on ceramic substrate (900mm ² × 0.8mm) 1unit	$R_{\theta JA}$	156.25	°C/W

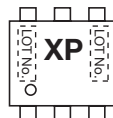
Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

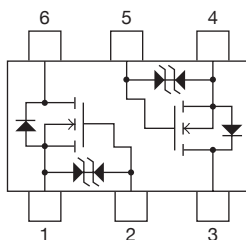
Packing Type : TL



Marking



Electrical Connection



ORDERING INFORMATION

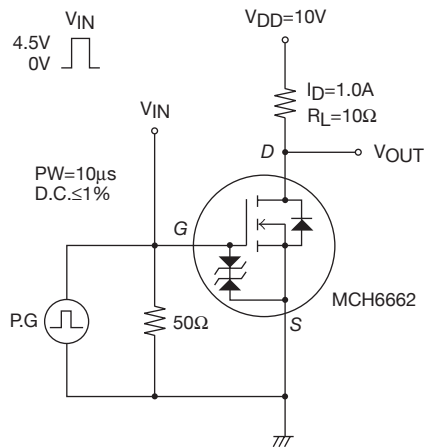
See detailed ordering and shipping information on page 6 of this data sheet.

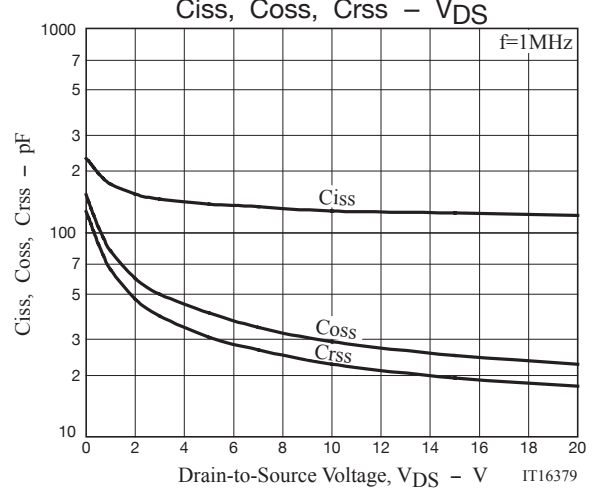
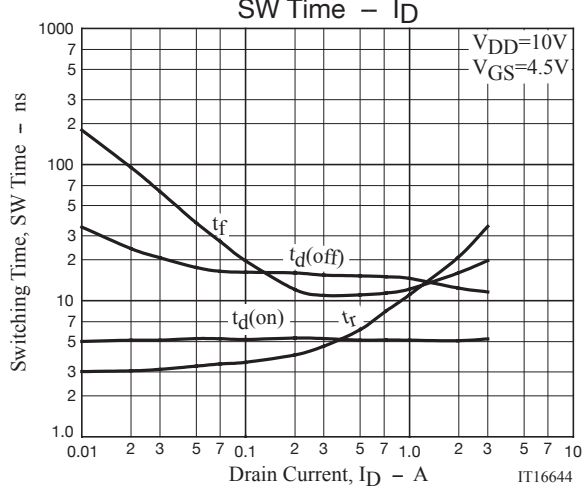
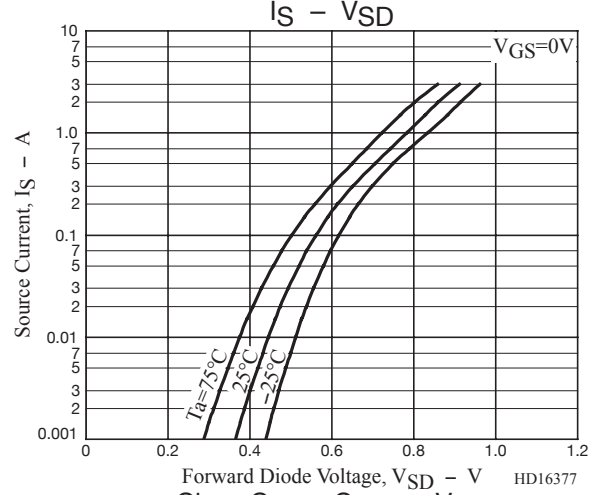
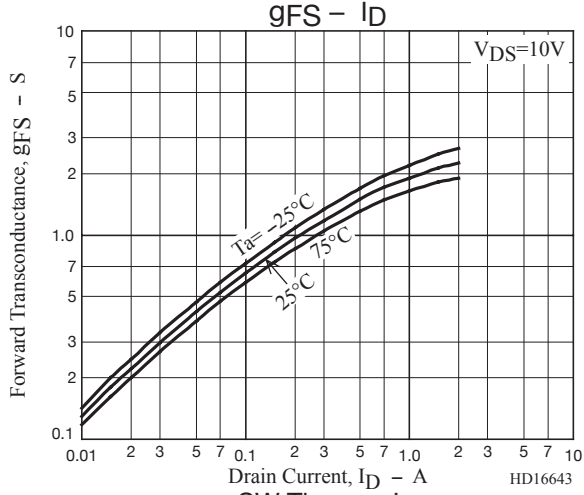
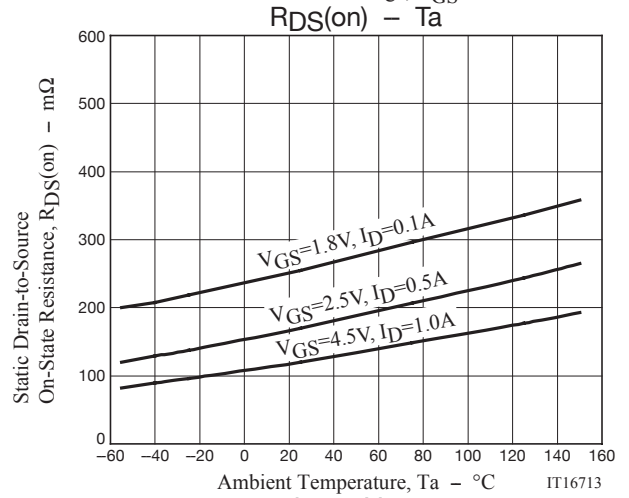
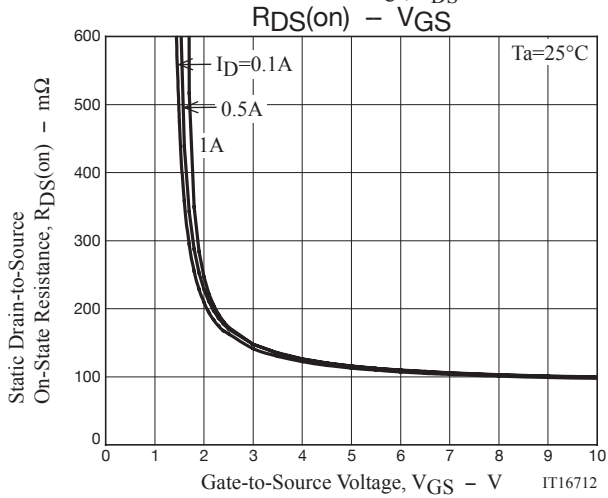
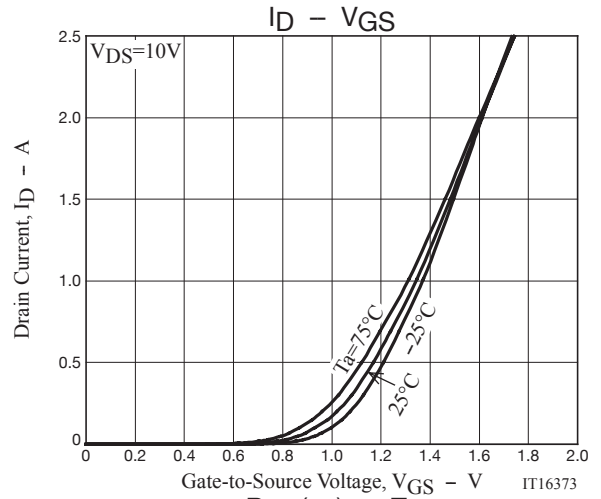
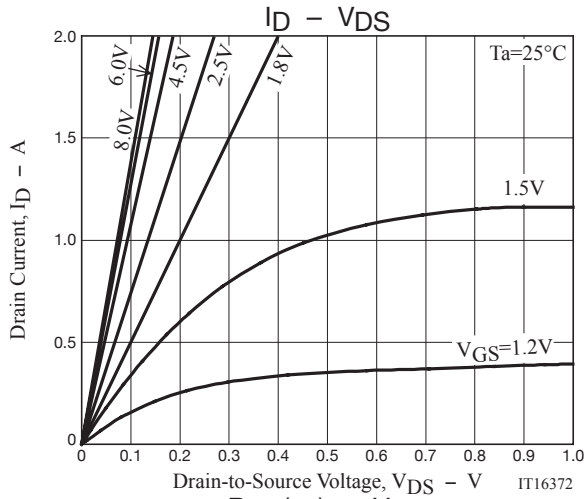
Electrical Characteristics at Ta=25°C

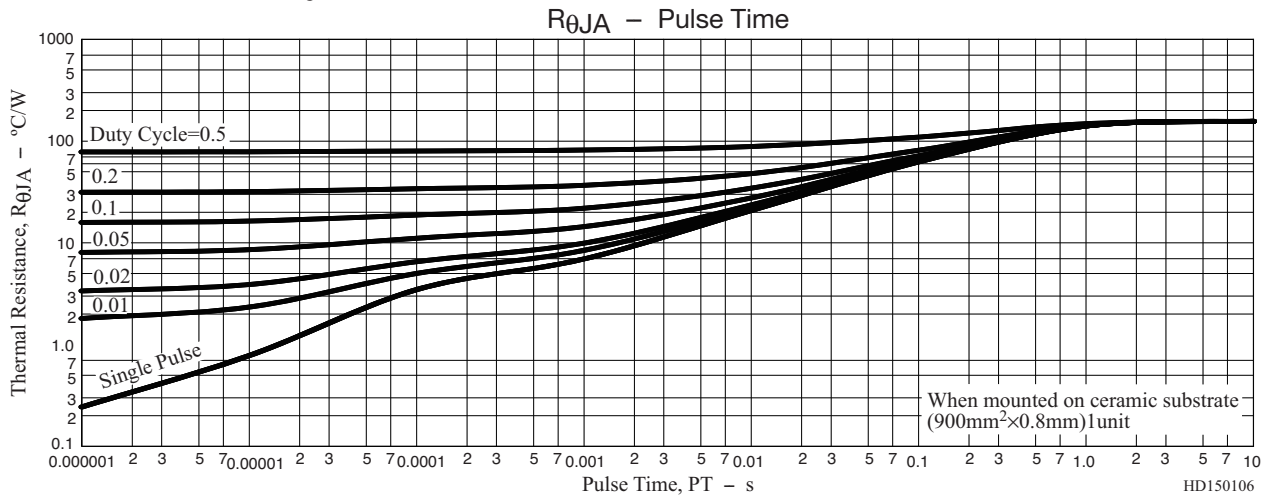
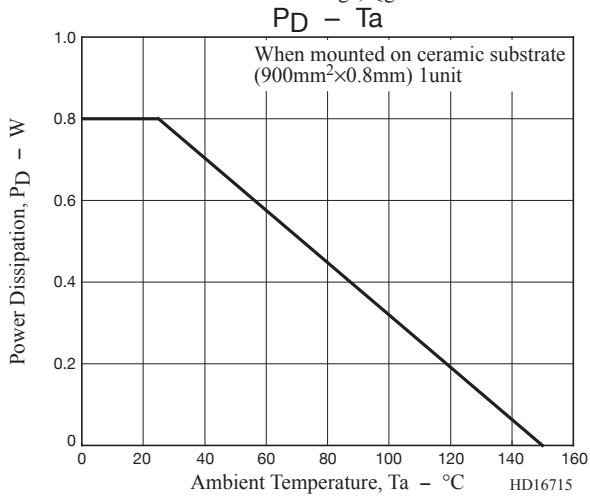
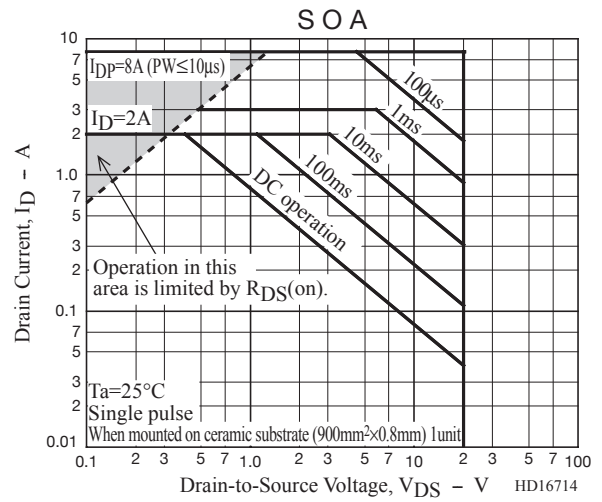
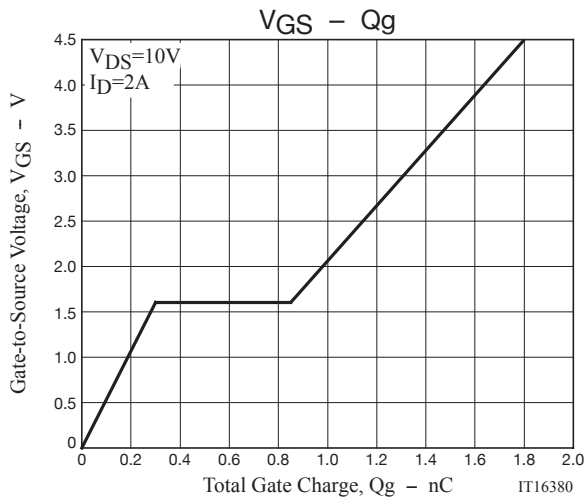
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=10V, I_D=1mA$	0.4		1.3	V
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=1A$		1.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1.0A, V_{GS}=4.5V$		120	160	$m\Omega$
	$R_{DS(on)2}$	$I_D=0.5A, V_{GS}=2.5V$		170	240	$m\Omega$
	$R_{DS(on)3}$	$I_D=0.1A, V_{GS}=1.8V$		255	380	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		128		pF
Output Capacitance	C_{oss}			28		pF
Reverse Transfer Capacitance	C_{rss}			21		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		5.1		ns
Rise Time	t_r			11		ns
Turn-OFF Delay Time	$t_{d(off)}$			14.5		ns
Fall Time	t_f			12		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=2A$		1.8		nC
Gate-to-Source Charge	Q_{gs}			0.3		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.55		nC
Forward Diode Voltage	V_{SD}	$I_S=2A, V_{GS}=0V$		0.85	1.2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Switching Time Test Circuit







Package Dimensions

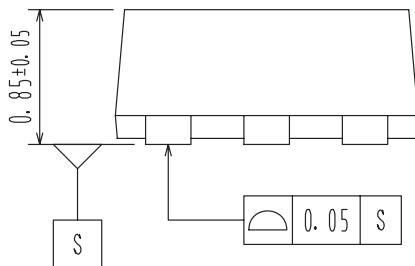
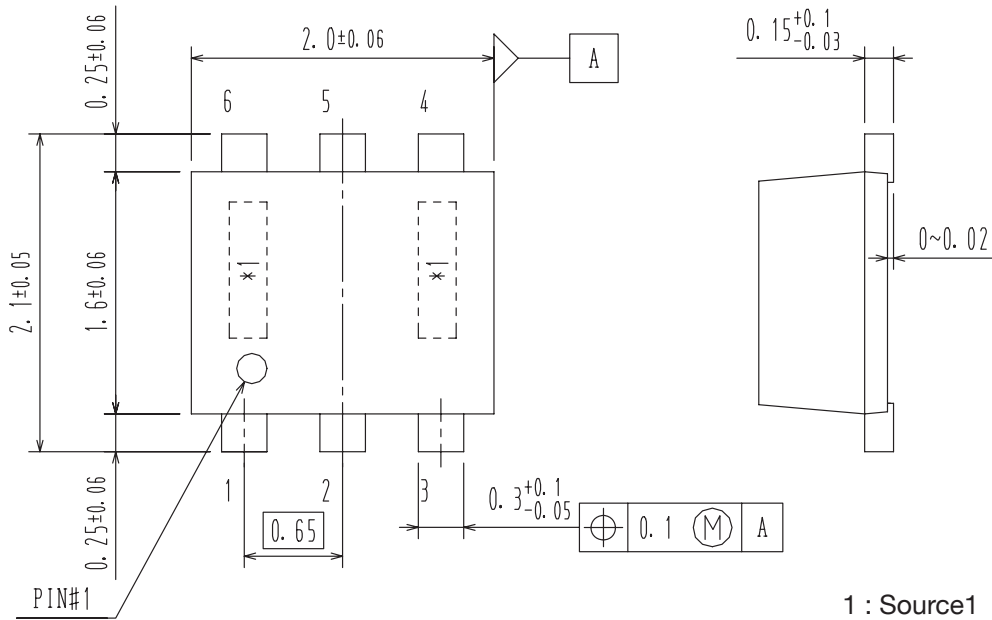
unit : mm

MCH6662-TL-H, MCH6662-TL-W

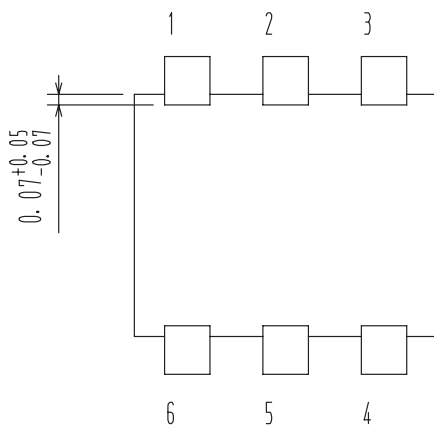
SC-88FL / MCPH6

CASE 419AS

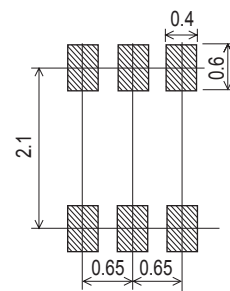
ISSUE O



Recommended Soldering Footprint



*1: Lot indication



ORDERING INFORMATION

Device	Package	Shipping	memo
MCH6662-TL-H	MCPH6	3,000pcs./reel	Pb-Free and Halogen Free
MCH6662-TL-W			

Note on usage : Since the MCH6662 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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