



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6448 — N-Channel Silicon MOSFET Low-Voltage Driver Switching Device Applications

Features

- ON-resistance $R_{DS(on)}=17\text{m}\Omega$ (typ.)
- 1.2V drive
- Halogen free compliance
- Protection diode in

Specifications

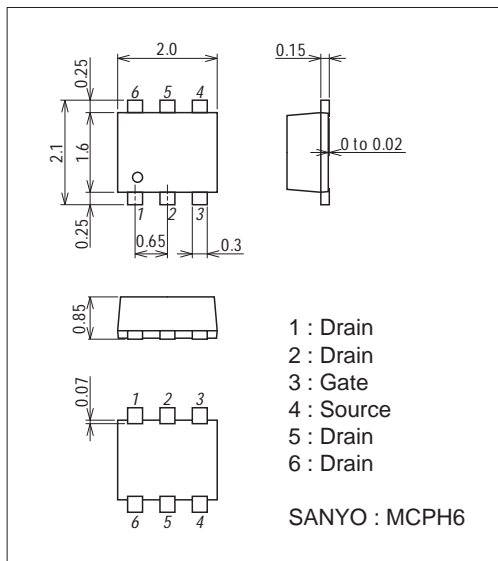
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		20	V
Gate-to-Source Voltage	V_{GSS}		± 9	V
Drain Current (DC)	I_D		8	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycles $\leq 1\%$	32	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (1200mm ² ×0.8mm)	1.5	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Package Dimensions

unit : mm (typ)

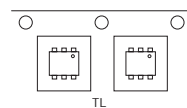
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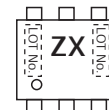
Product & Package Information

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

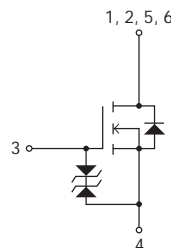
Packing Type : TL



Marking



Electrical Connection

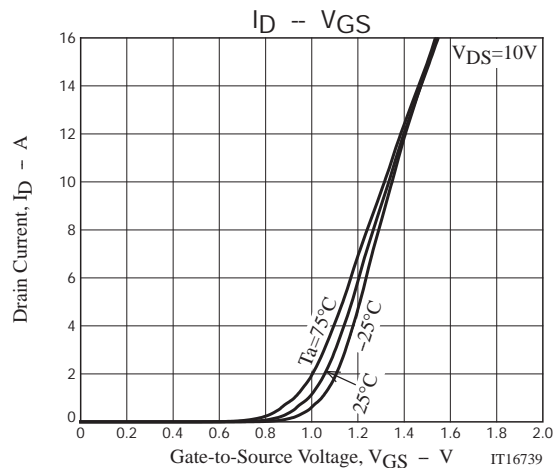
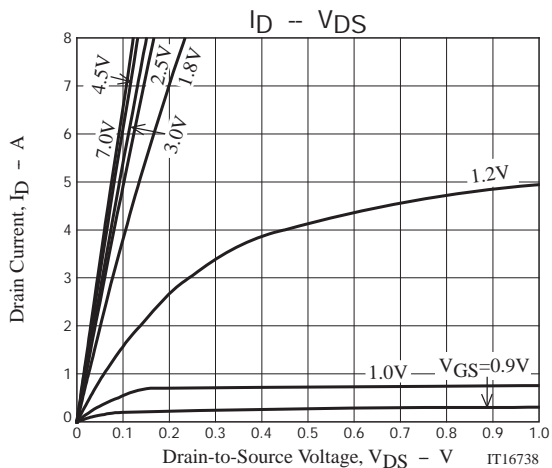
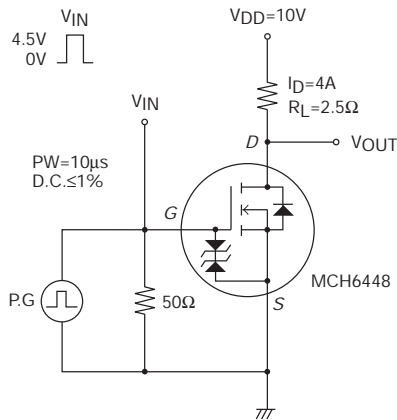


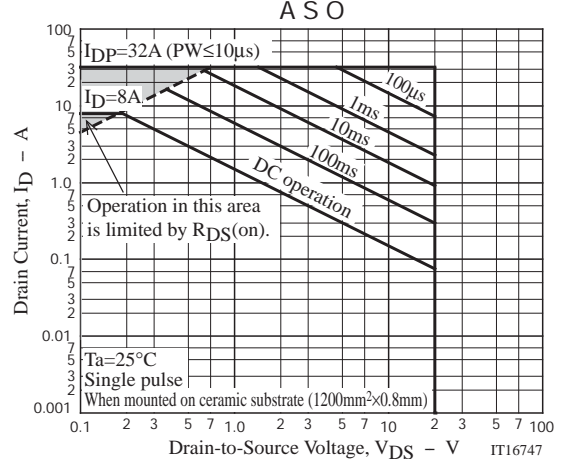
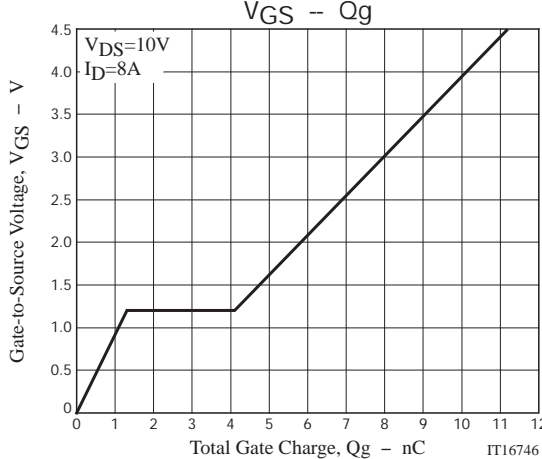
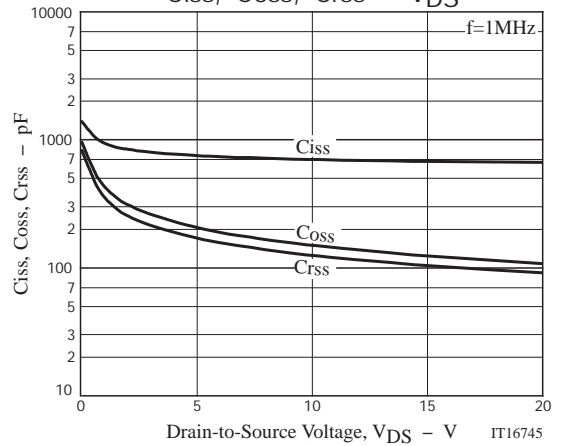
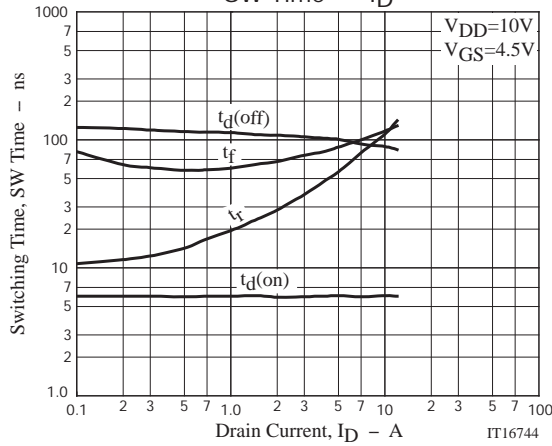
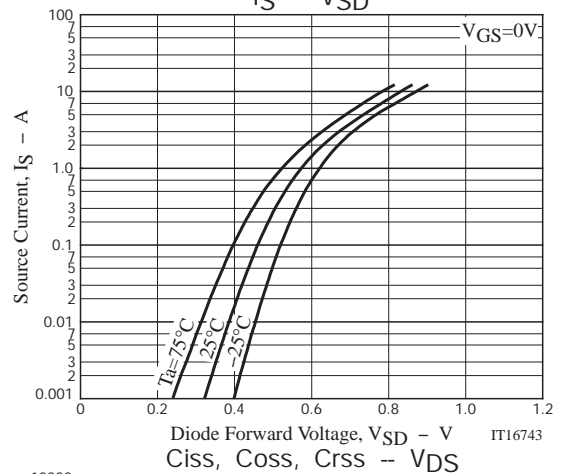
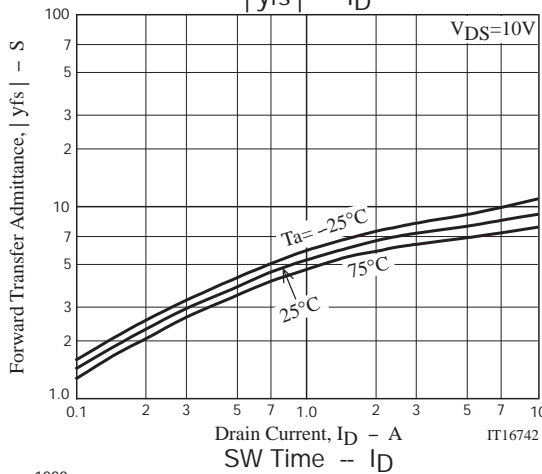
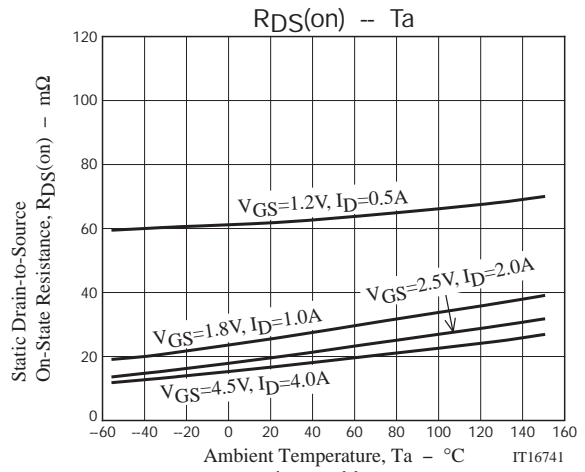
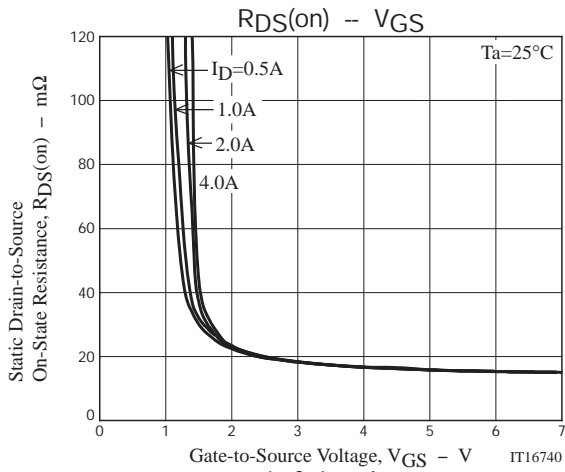
MCH6448

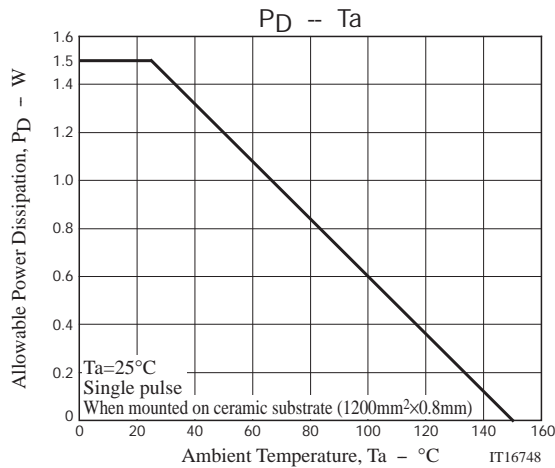
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}, V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 7.2\text{V}, V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	0.3		1.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=4\text{A}$		7.7		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=4\text{A}, V_{GS}=4.5\text{V}$		17	22	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=2\text{A}, V_{GS}=2.5\text{V}$		20	28	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=1\text{A}, V_{GS}=1.8\text{V}$		26	39	$\text{m}\Omega$
	$R_{DS(on)4}$	$I_D=0.5\text{A}, V_{GS}=1.2\text{V}$		62	124	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}, f=1\text{MHz}$		705		pF
Output Capacitance	C_{oss}			150		pF
Reverse Transfer Capacitance	C_{rss}			125		pF
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit		6	
Rise Time	t_r			47		ns
Turn-OFF Delay Time	$t_{d(off)}$			103		ns
Fall Time	t_f			81		ns
Total Gate Charge	Q_g	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=8\text{A}$			11.2	
Gate-to-Source Charge	Q_{gs}			1.3		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			2.8		nC
Diode Forward Voltage	V_{SD}	$I_S=8\text{A}, V_{GS}=0\text{V}$		0.8	1.2	V

Switching Time Test Circuit







Note on usage : Since the MCH6448 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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