



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

MCH3476 — General-Purpose Switching Device Applications

Features

- 1.8V drive
- Halogen free compliance

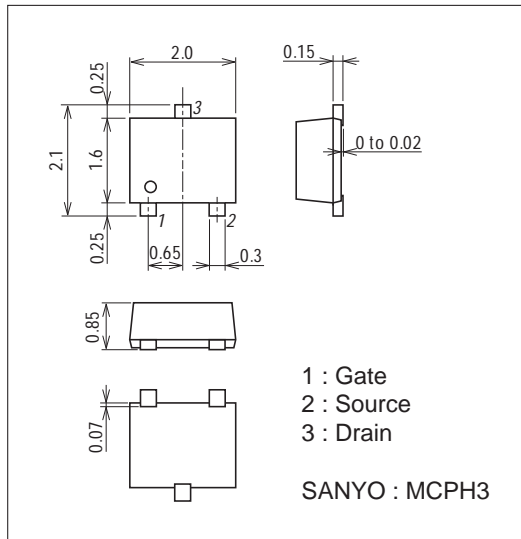
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		20	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		2	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycles≤1%	8	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm)	0.8	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Package Dimensions

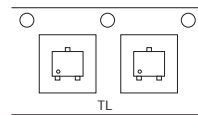
unit : mm (typ)
7019A-003



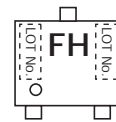
Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

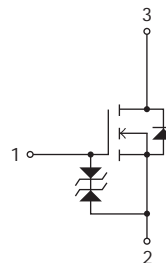
Packing Type : TL



Marking



Electrical Connection

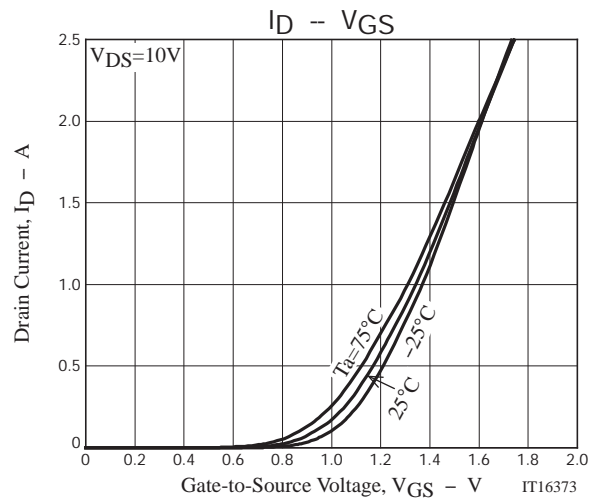
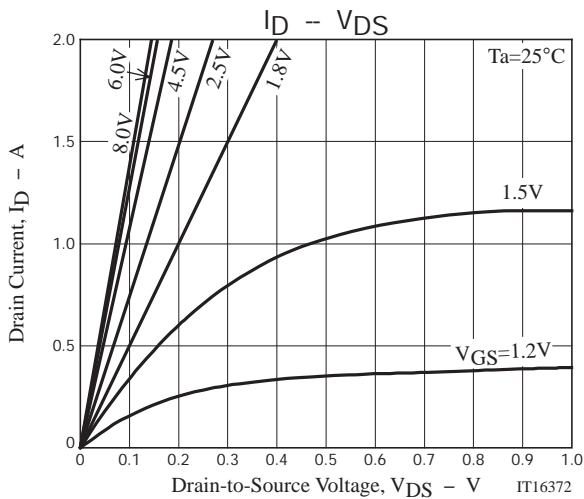
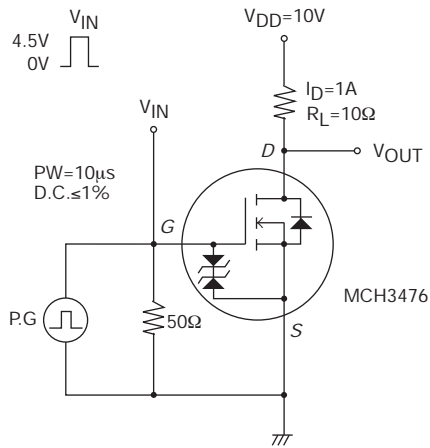


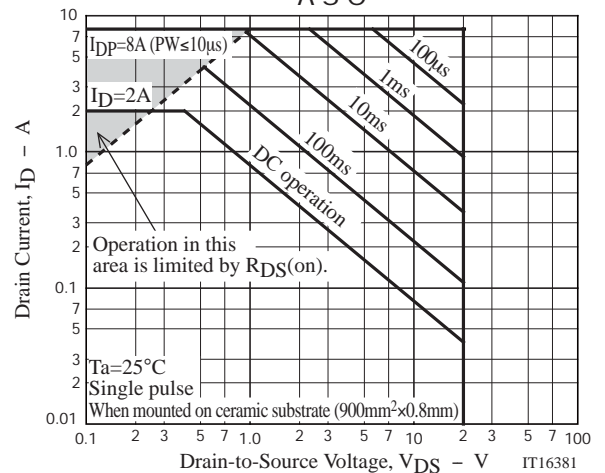
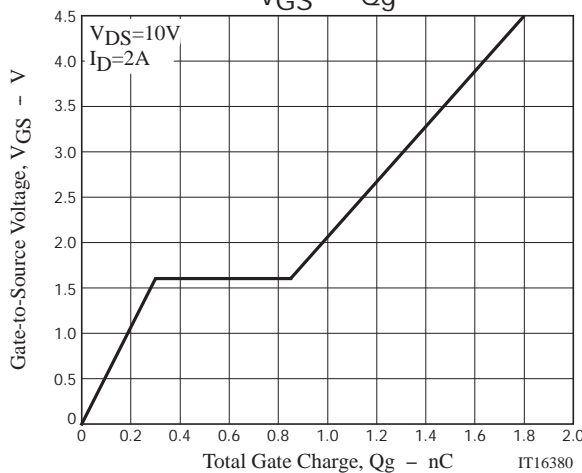
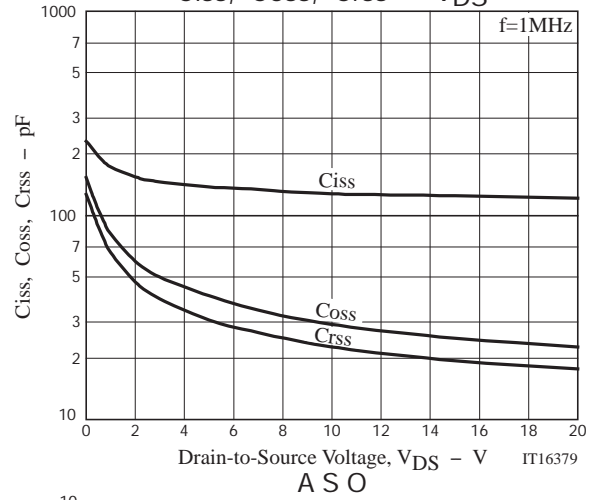
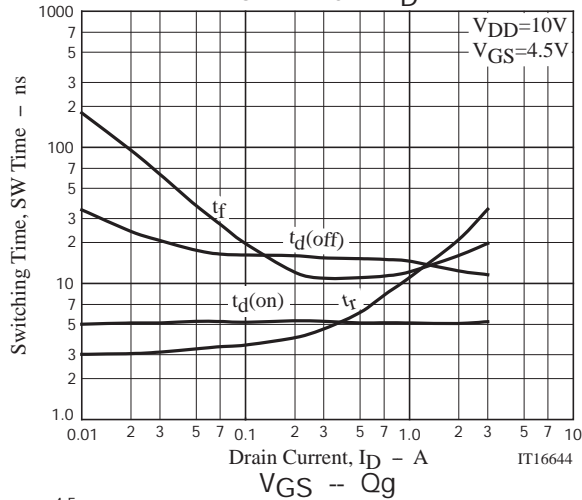
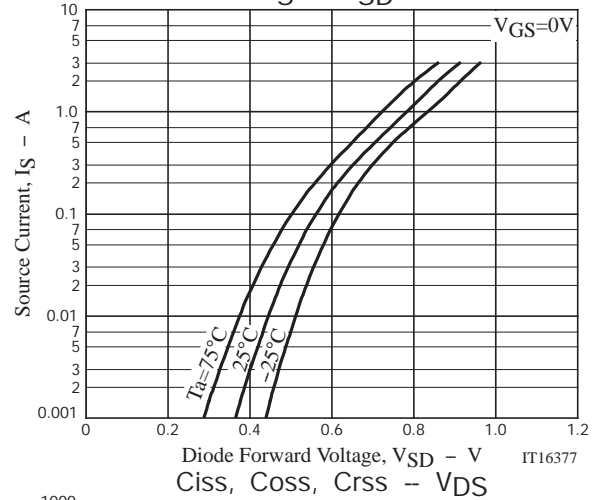
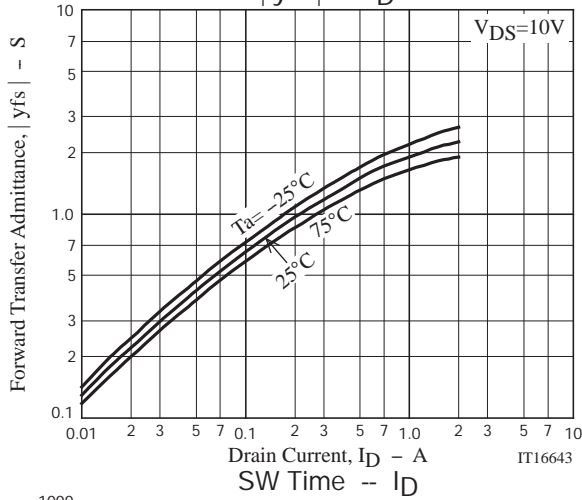
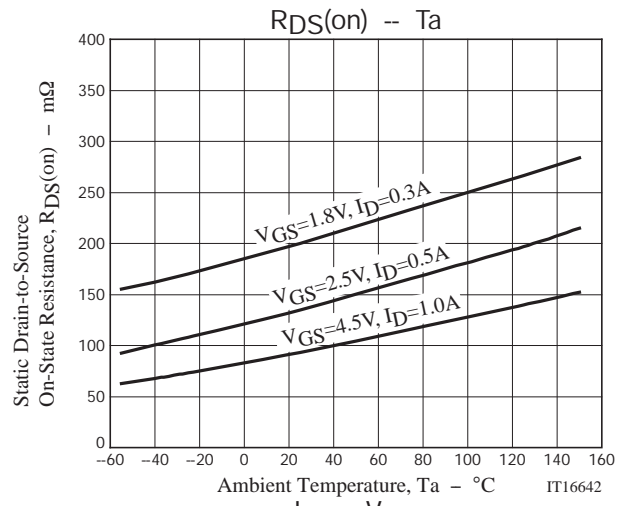
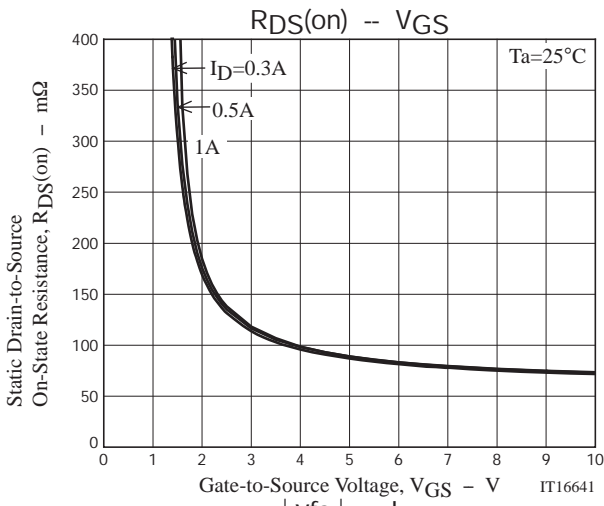
MCH3476

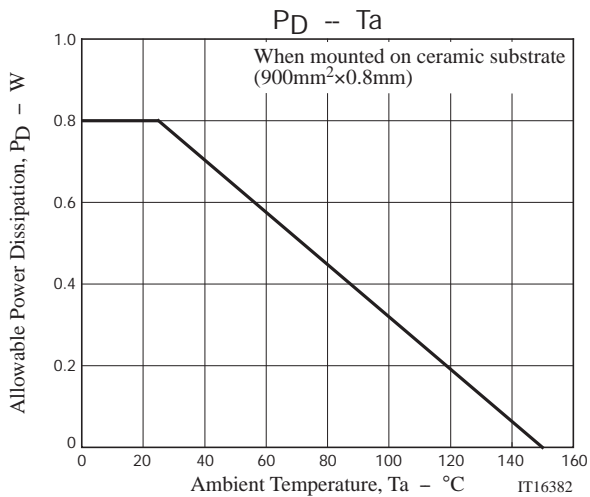
Electrical Characteristics at $T_a=25^\circ\text{C}$

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}	$V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=1\text{A}$		1.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1\text{A}, V_{GS}=4.5\text{V}$		93	125	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=0.5\text{A}, V_{GS}=2.5\text{V}$		135	190	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=0.3\text{A}, V_{GS}=1.8\text{V}$		200	310	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}, f=1\text{MHz}$		128		pF
Output Capacitance	C_{oss}	$V_{DS}=10\text{V}, f=1\text{MHz}$		28		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10\text{V}, f=1\text{MHz}$		21		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		5.1		ns
Rise Time	t_r	See specified Test Circuit.		11		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		14.5		ns
Fall Time	t_f	See specified Test Circuit.		12		ns
Total Gate Charge	Q_g	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=2\text{A}$		1.8		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=2\text{A}$		0.3		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=2\text{A}$		0.55		nC
Diode Forward Voltage	V_{SD}	$I_S=2\text{A}, V_{GS}=0\text{V}$		0.85	1.2	V

Switching Time Test Circuit







Note on usage : Since the MCH3476 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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