



SANYO Semiconductors

DATA SHEET

MCH6445

N-Channel Silicon MOSFET — General-Purpose Switching Device Applications

Features

- 4V drive.
- Low ON-resistance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		60	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		4	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	16	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (1500mm ² ×0.8mm)	1.5	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0V	60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =2A		3		S

Marking : ZU

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MCH6445

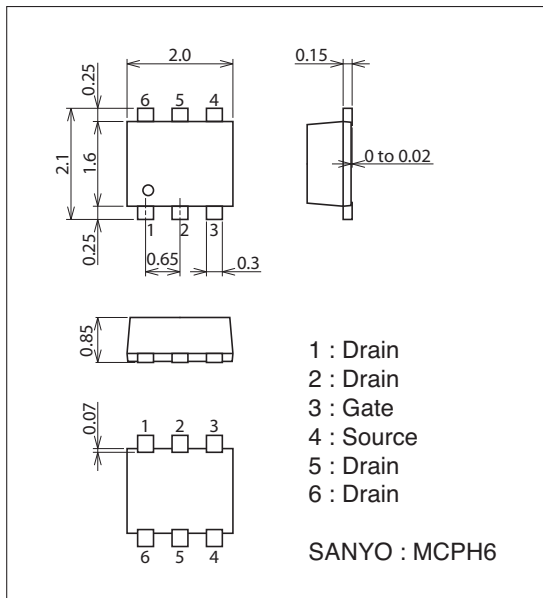
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=2A, V_{GS}=10V$		60	78	$m\Omega$
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=4.5V$		74	104	$m\Omega$
	$R_{DS(on)3}$	$I_D=1A, V_{GS}=4V$		81	114	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		505		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		57		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		37		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		7.3		ns
Rise Time	t_r	See specified Test Circuit.		9.8		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		40		ns
Fall Time	t_f	See specified Test Circuit.		24		ns
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=4A$		10		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=30V, V_{GS}=10V, I_D=4A$		1.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=30V, V_{GS}=10V, I_D=4A$		2.1		nC
Diode Forward Voltage	V_{SD}	$I_S=4A, V_{GS}=0V$		0.82	1.2	V

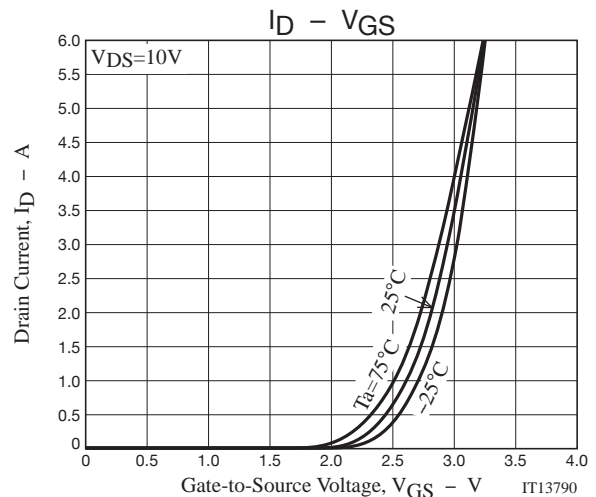
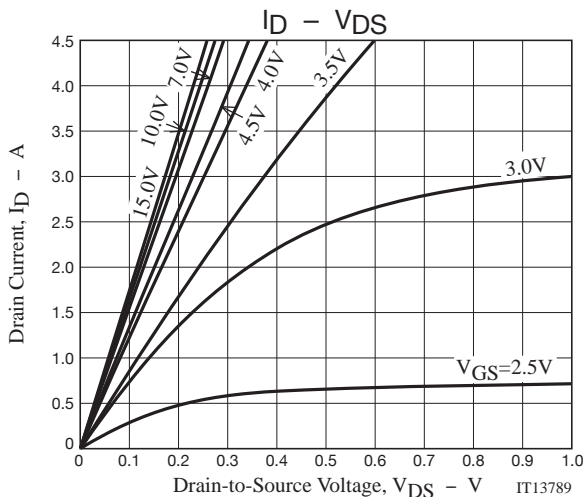
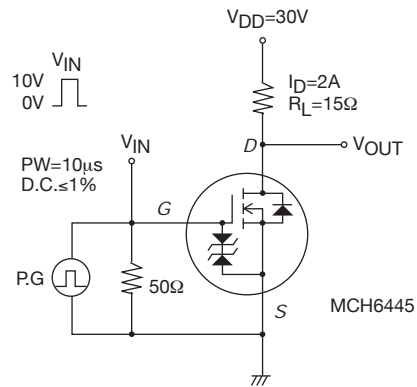
Package Dimensions

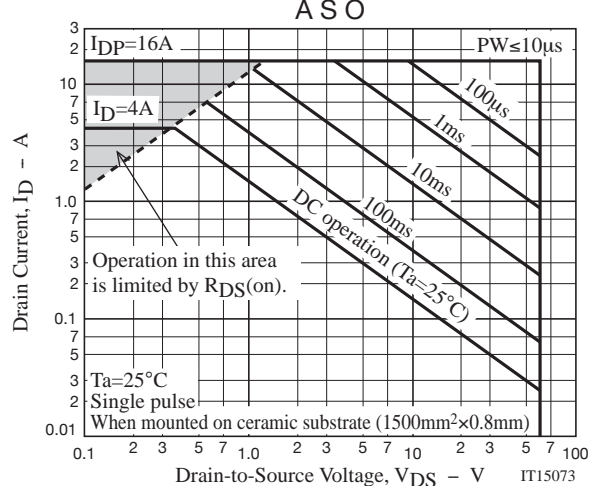
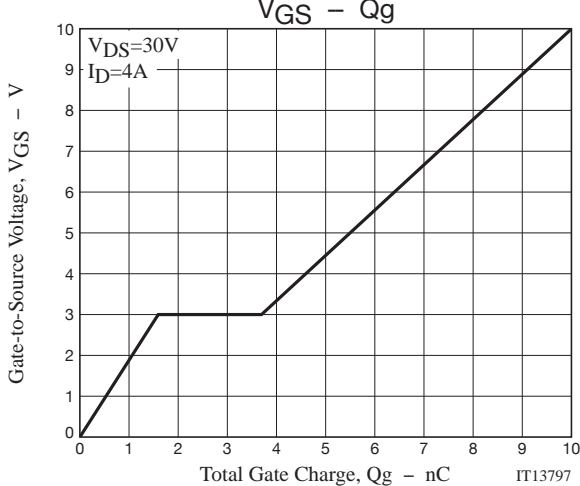
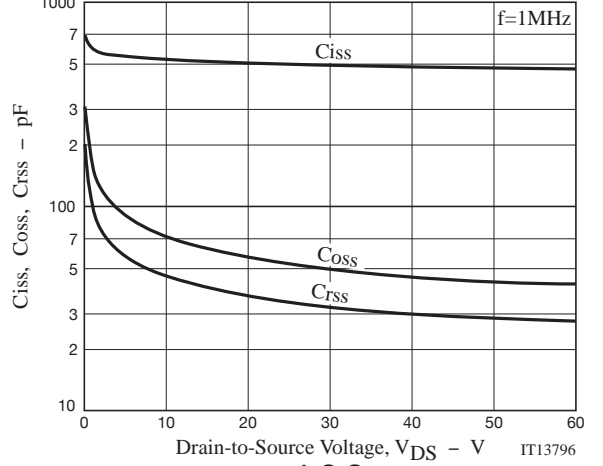
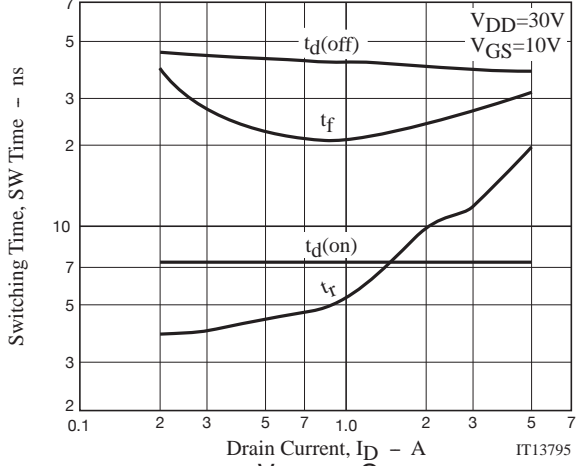
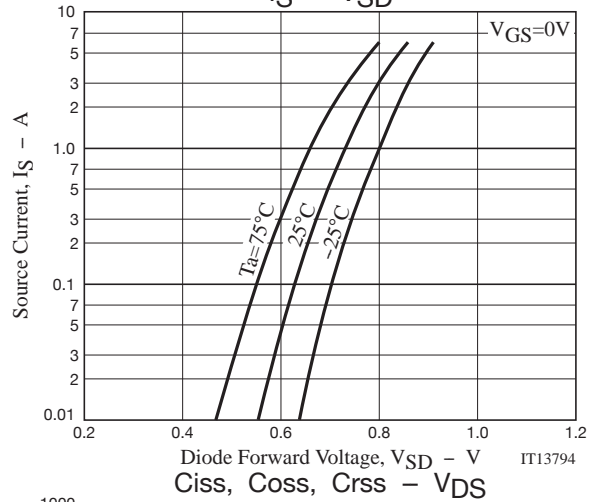
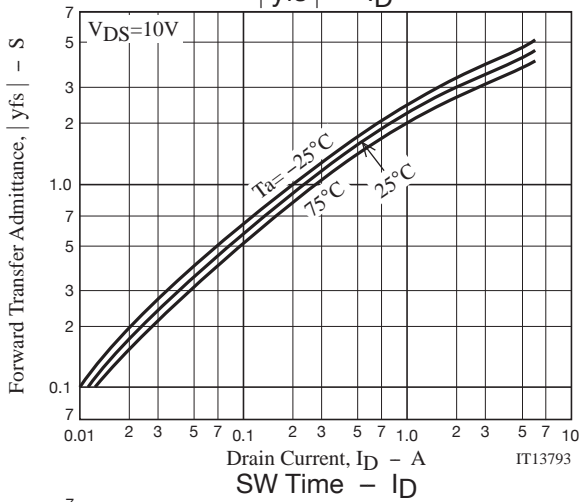
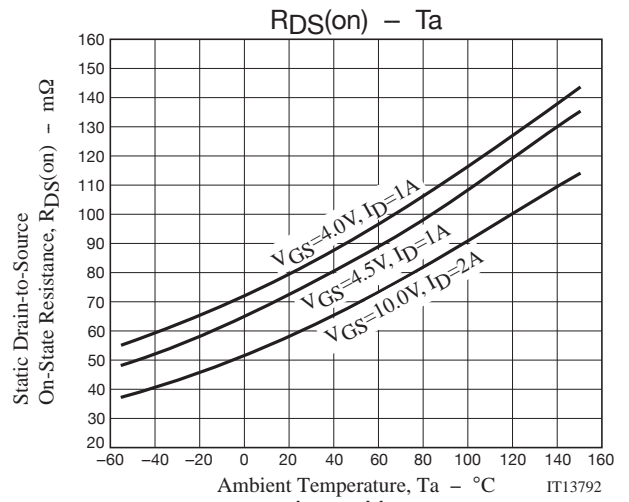
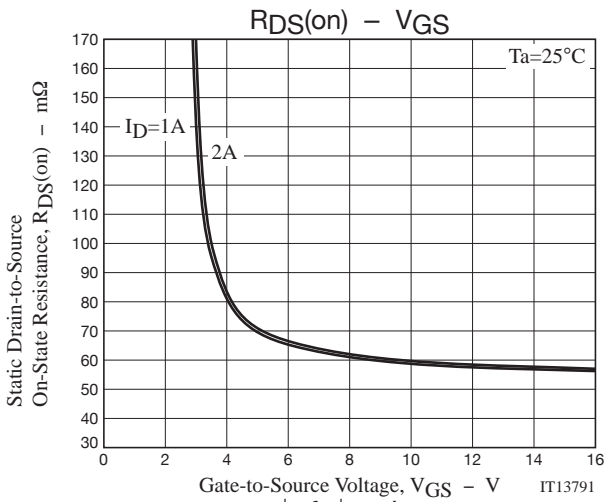
unit : mm (typ)

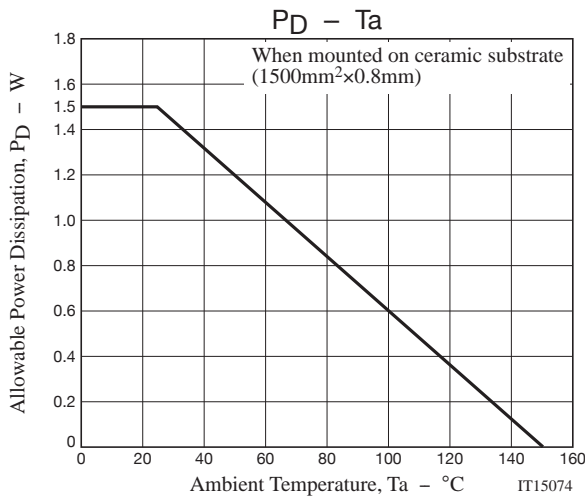
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Switching Time Test Circuit







Note on usage : Since the MCH6445 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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