



ON Semiconductor®

# ON Semiconductor DATA SHEET

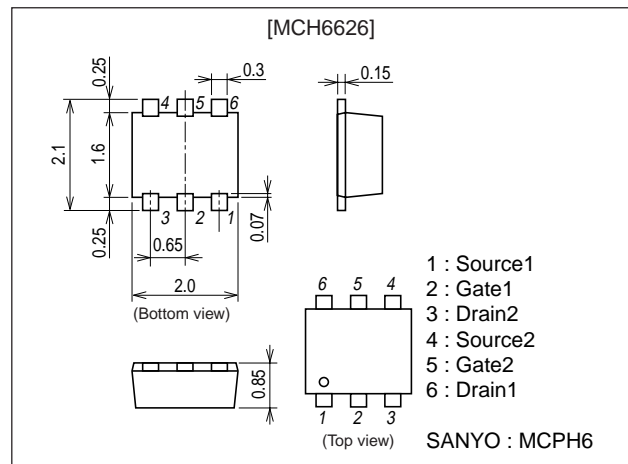
## MCH6626 — N-Channel and P-Channel Silicon MOSFETs General-Purpose Switching Device Applications

### Features

- The MCH6626 incorporates an N-channel MOSFET and a P-channel MOSFET that feature low ON-resistance and high-speed switching, thereby enabling high-density mounting.
- Excellent ON-resistance characteristic.
- 2.5V drive.

### Package Dimensions

unit : mm  
2173A



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		20	-20	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	±10	V
Drain Current (DC)	I <sub>D</sub>		1.6	-1.0	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	6.4	-4.0	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²×0.8mm)1unit	0.8		W
Channel Temperature	T <sub>ch</sub>		150		°C
Storage Temperature	T <sub>stg</sub>		-55 to +150		°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[N-channel]						
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	20			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	0.4		1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =0.8A	1.4	2.4		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =0.8A, V <sub>GS</sub> =4V		180	230	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =0.4A, V <sub>GS</sub> =2.5V		220	310	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =0.1A, V <sub>GS</sub> =1.8V		300	450	mΩ

Marking : WA

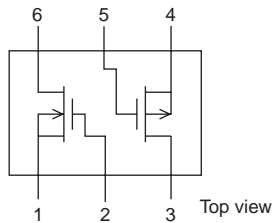
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# MCH6626

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		105		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		23		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		15		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		6		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		16		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		19		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		8		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =1.6A		1.4		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =1.6A		0.3		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =1.6A		0.3		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.6A, V <sub>GS</sub> =0		0.92	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-20			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-0.4		-1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-500mA	0.7	1.2		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-500mA, V <sub>GS</sub> =-4V		380	500	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-300mA, V <sub>GS</sub> =-2.5V		540	760	mΩ
Input Capacitance	Ciss	V <sub>DS</sub> =-10V, f=1MHz		115		pF
Output Capacitance	Coss	V <sub>DS</sub> =-10V, f=1MHz		23		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-10V, f=1MHz		15		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		8		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		6		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		15		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		7		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-1A		1.5		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-1A		0.4		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-1A		0.3		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0	-0.9		-1.5	V

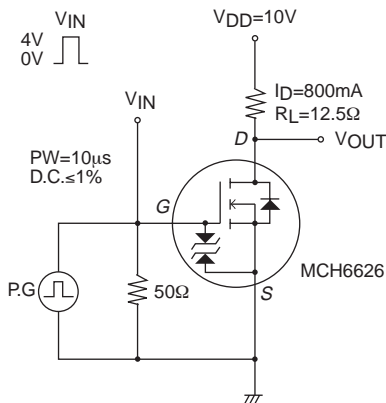
## Electrical Connection



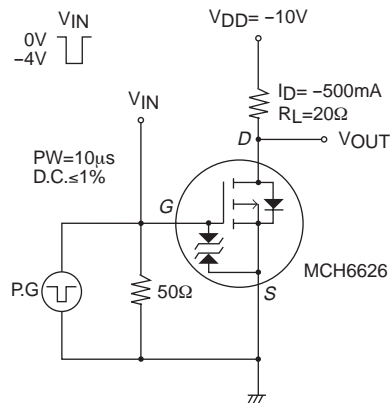
- 1 : Source1
- 2 : Gate1
- 3 : Drain2
- 4 : Source2
- 5 : Gate2
- 6 : Drain1

## Switching Time Test Circuit

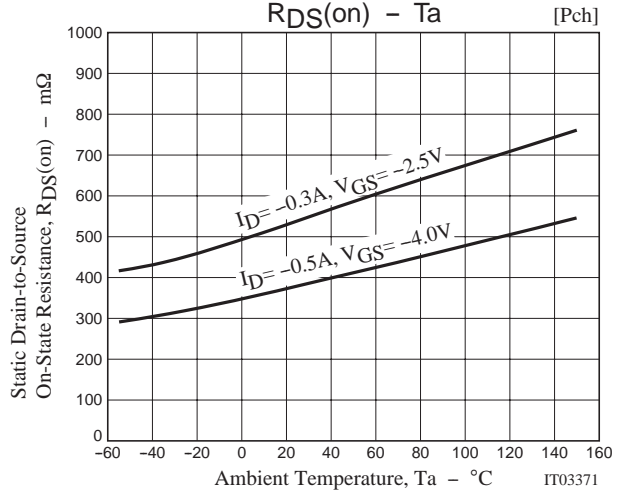
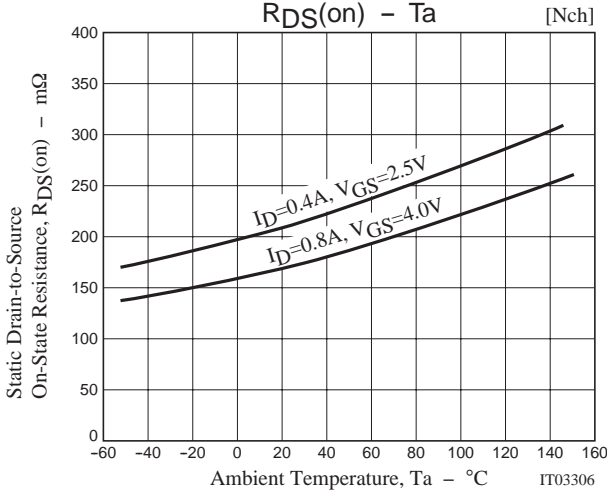
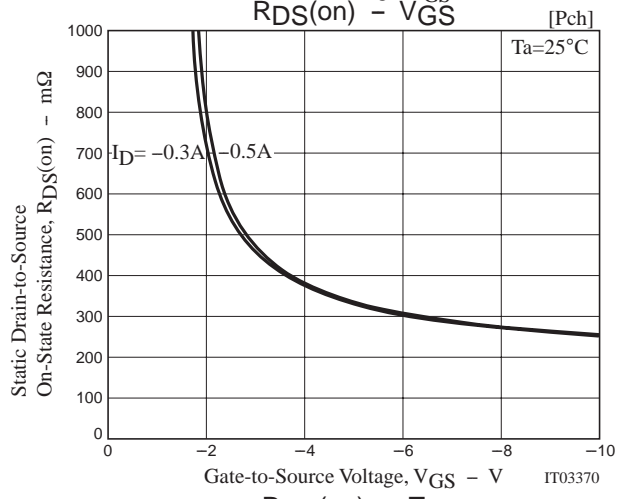
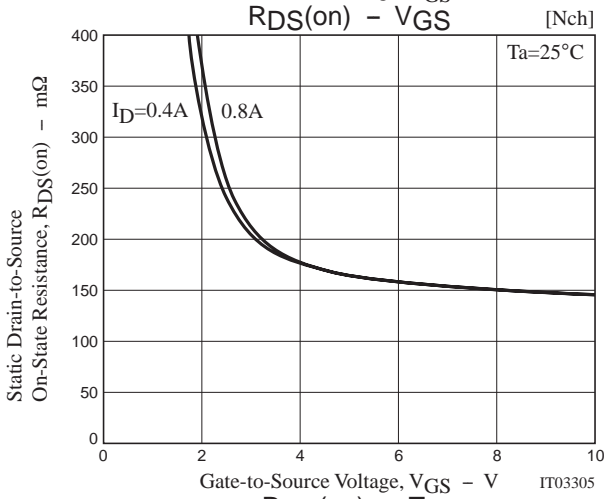
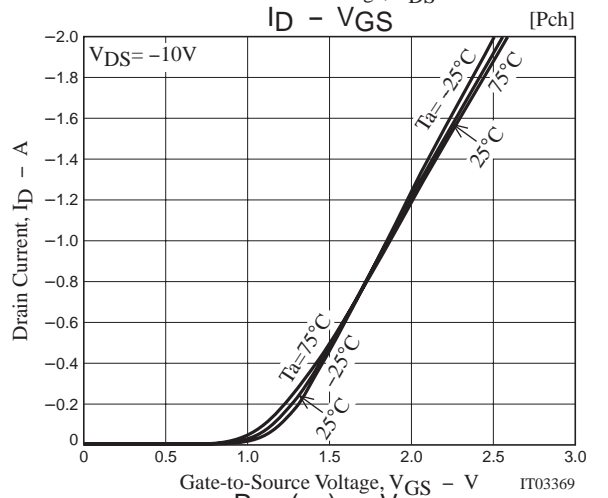
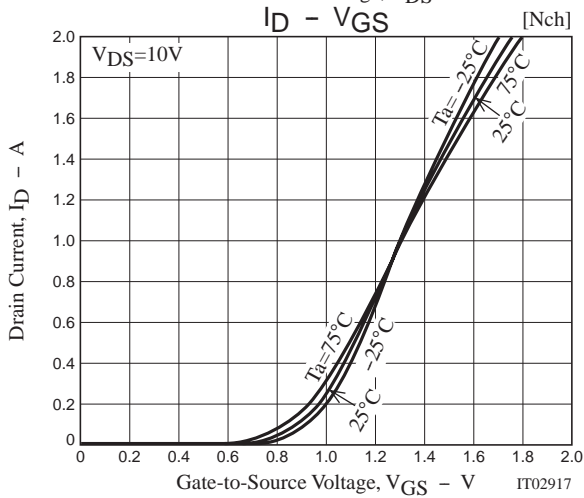
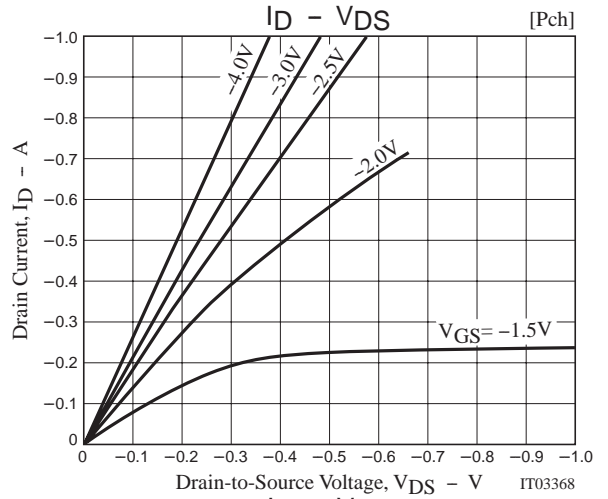
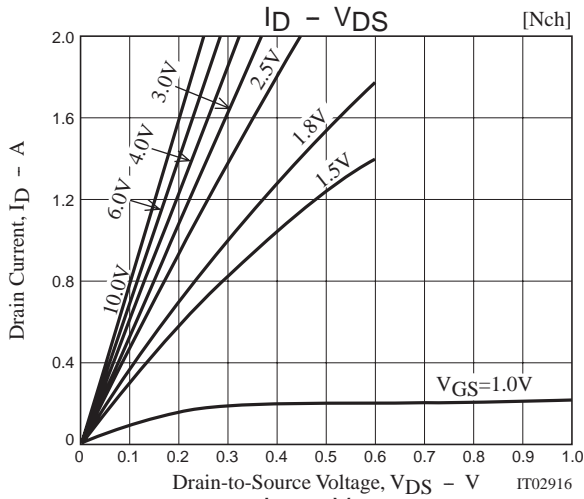
[N-channel]

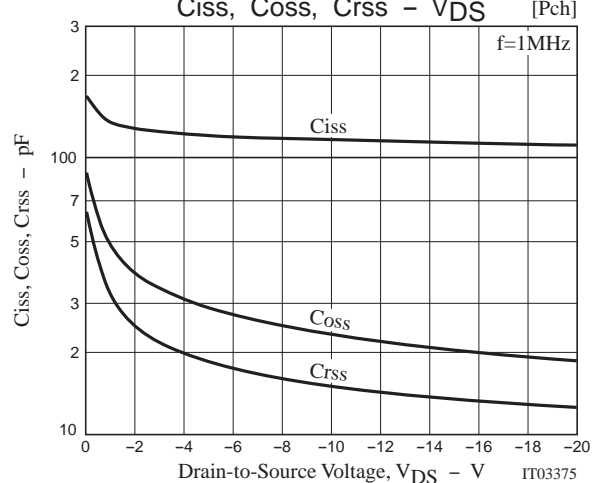
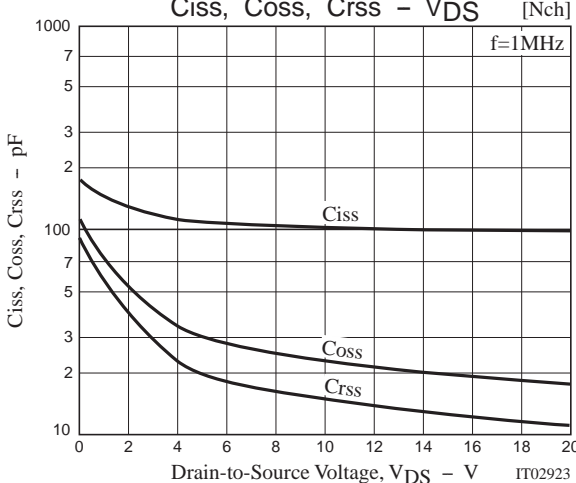
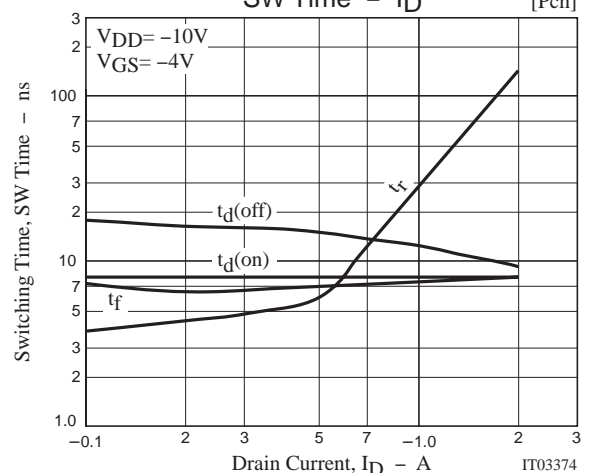
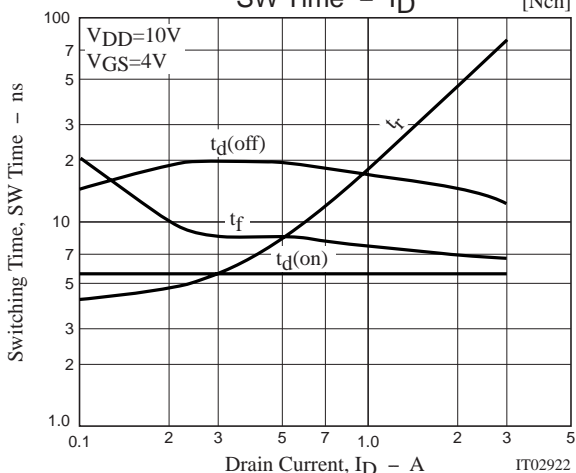
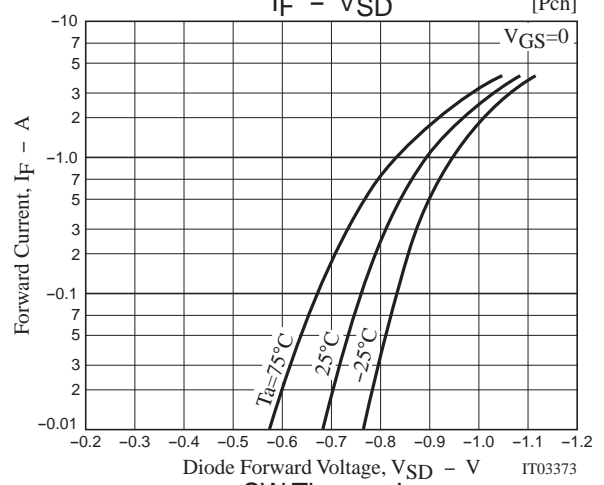
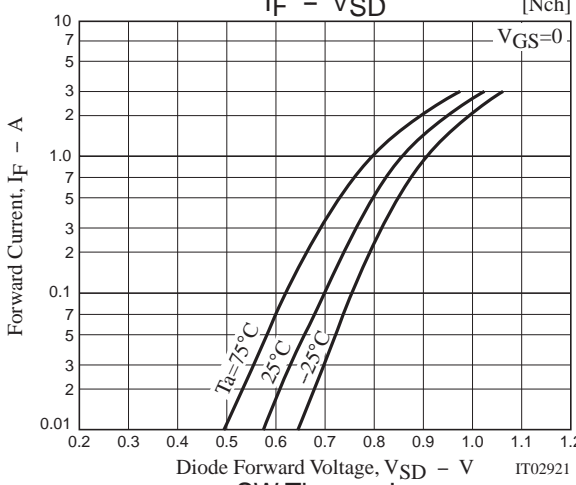
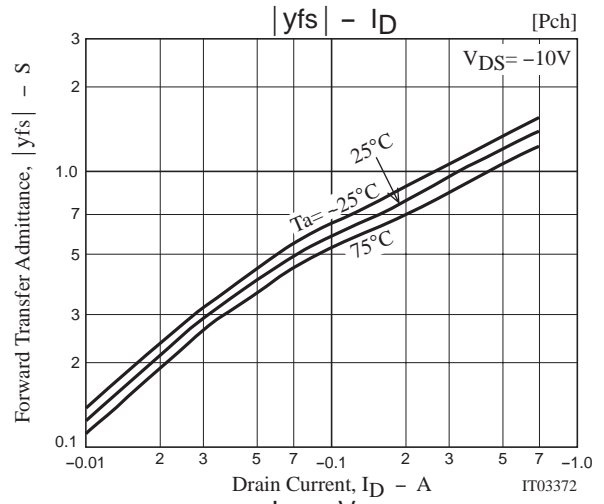
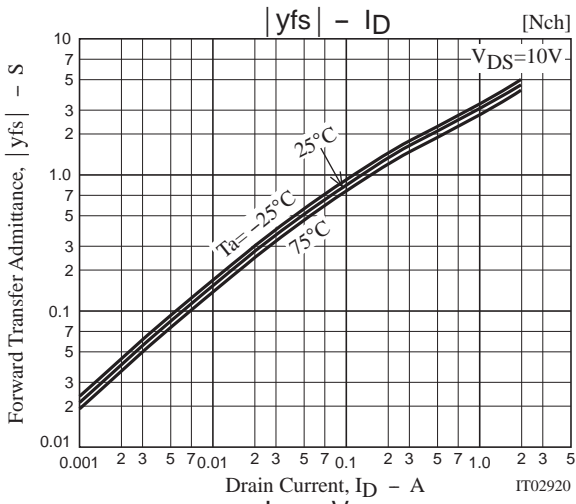


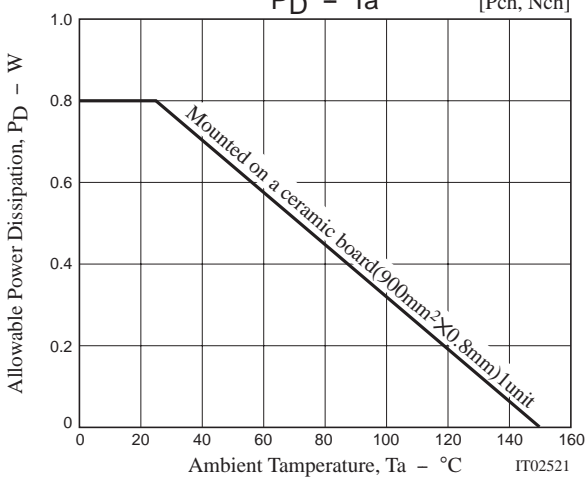
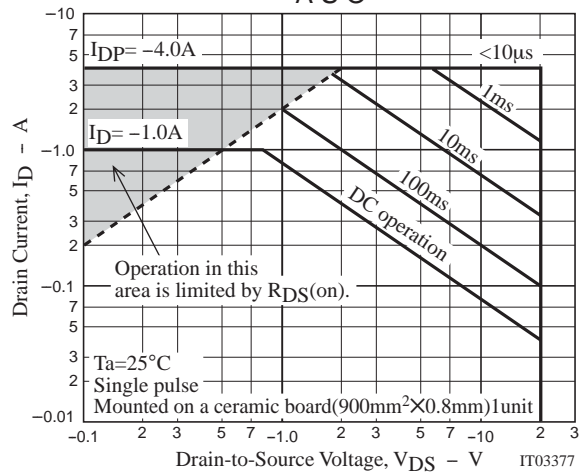
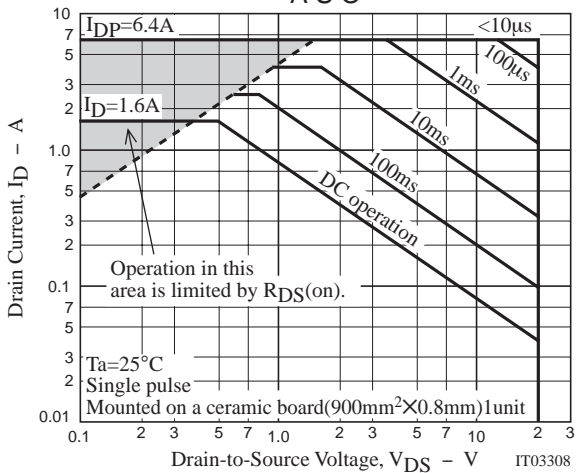
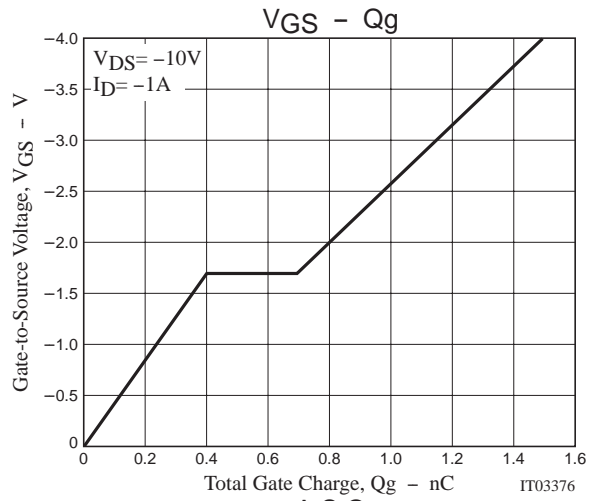
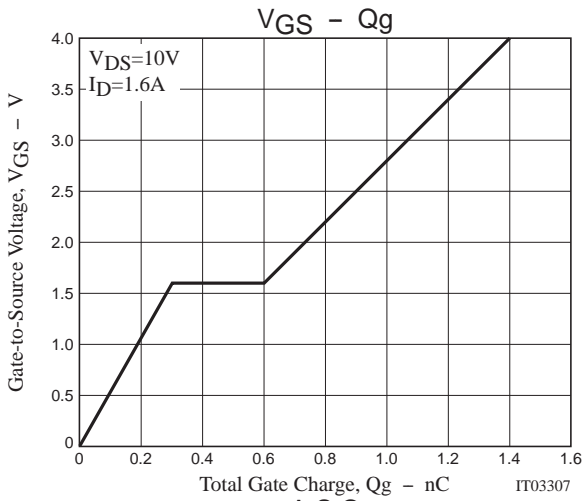
[P-channel]



# MCH6626







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