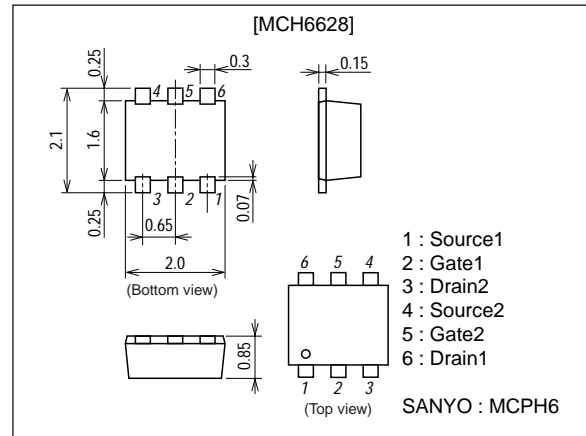


**MCH6628****General-Purpose Switching Device Applications****Features**

- The MCH6628 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>		30	-20	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	±10	V
Drain Current (DC)	I <sub>D</sub>		0.35	-1.0	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	1.4	-4.0	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> ×0.8mm) 1 unit	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	30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0			10	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> =100μA	0.4		1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =80mA	130	220		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =80mA, V <sub>GS</sub> =4V		2.9	3.7	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =40mA, V <sub>GS</sub> =2.5V		3.7	5.2	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =10mA, V <sub>GS</sub> =1.5V		6.4	12.8	Ω

Marking : WC

Continued on next page.

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**SANYO Electric Co., Ltd. Semiconductor Company**  
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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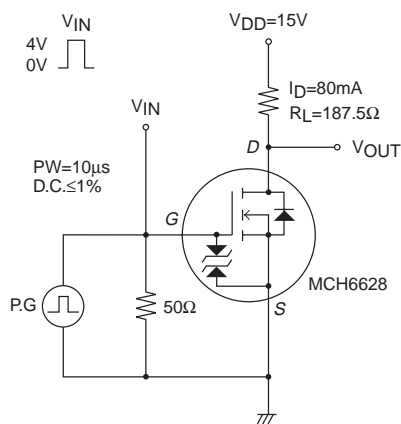
# MCH6628

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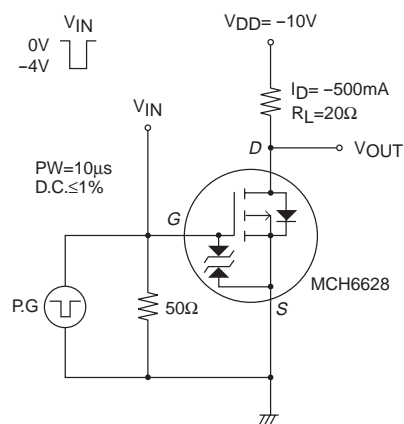
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		7.0		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		5.9		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		2.3		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		19		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		65		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		155		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		120		ns
Total Gate Charge	Qg	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =150mA		1.58		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =150mA		0.26		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =150mA		0.31		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =150mA, V <sub>GS</sub> =0		0.87	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	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	Qg	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-1A		1.5		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-1A		0.4		nC
Gate-to-Drain "Miller" Charge	Qgd	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

## Switching Time Test Circuit

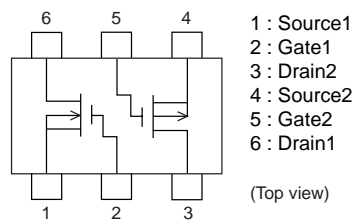
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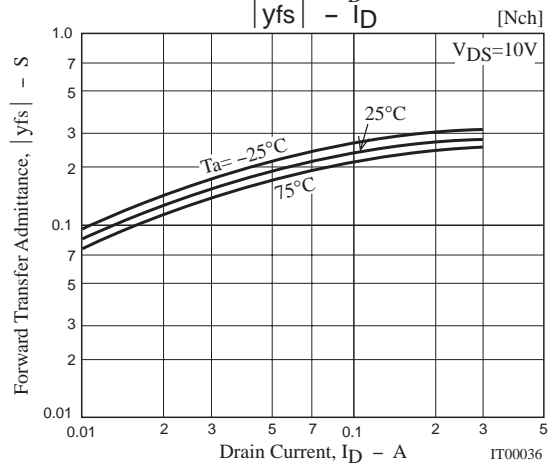
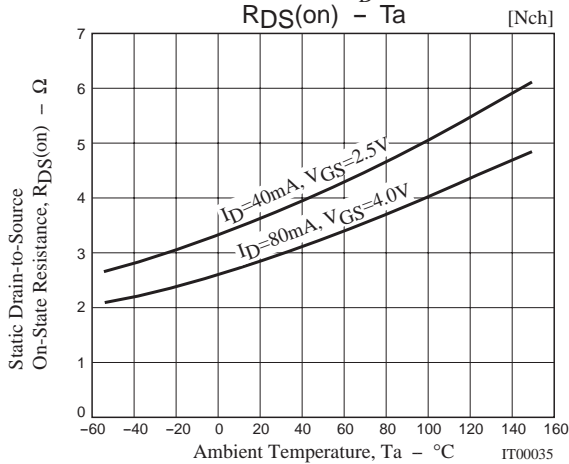
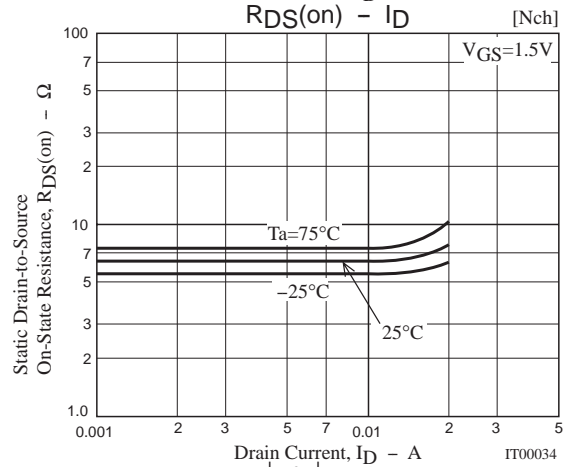
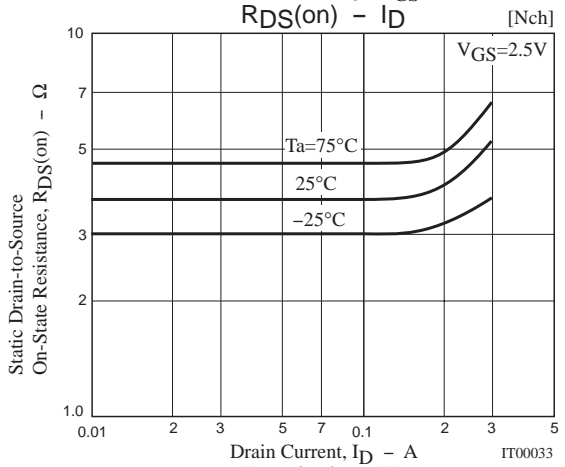
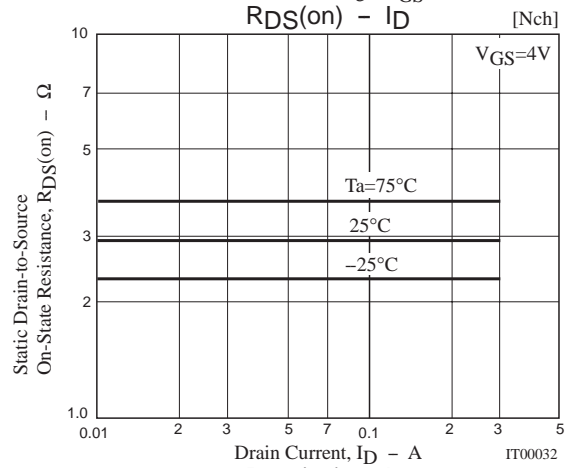
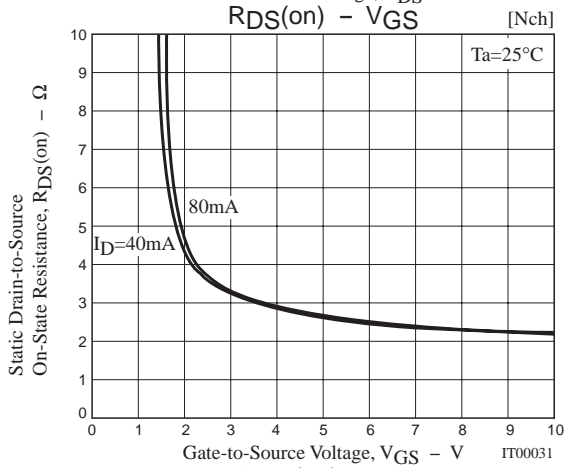
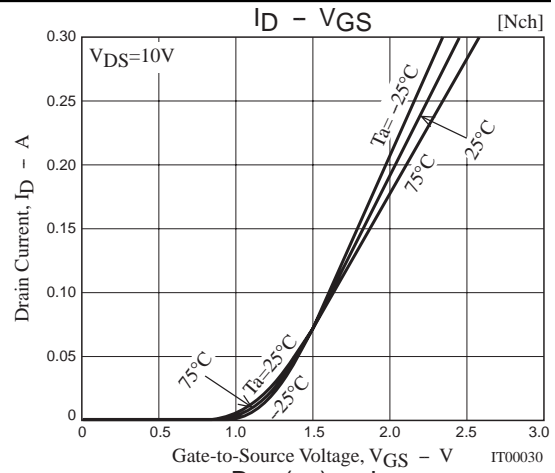
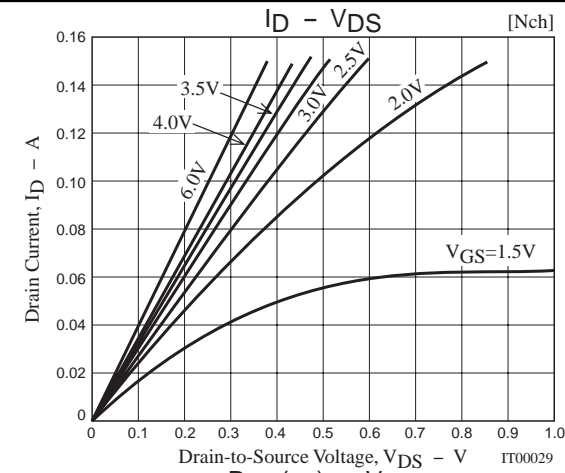
[P-channel]



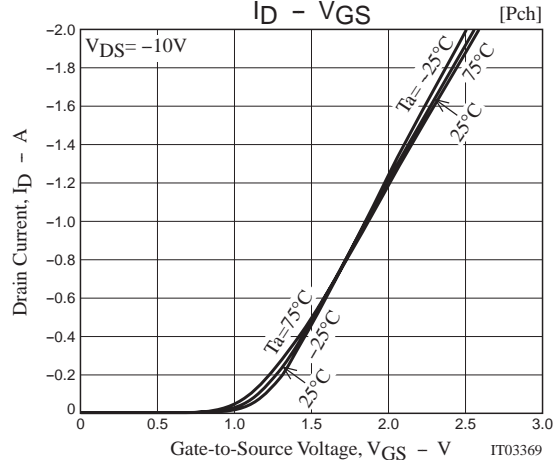
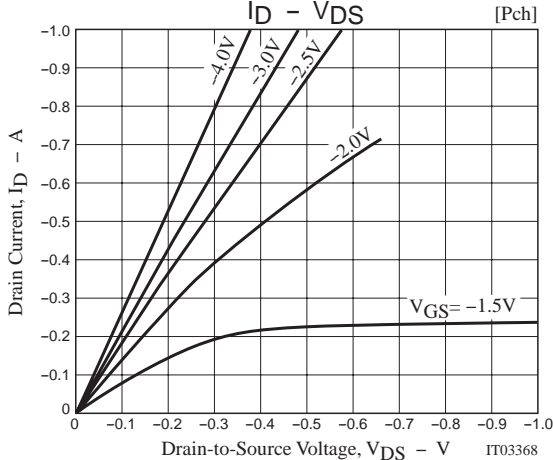
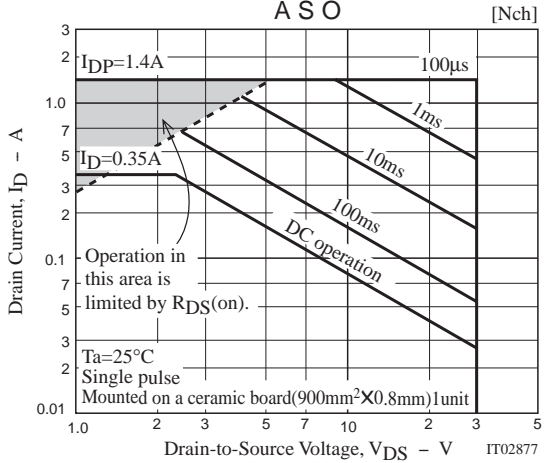
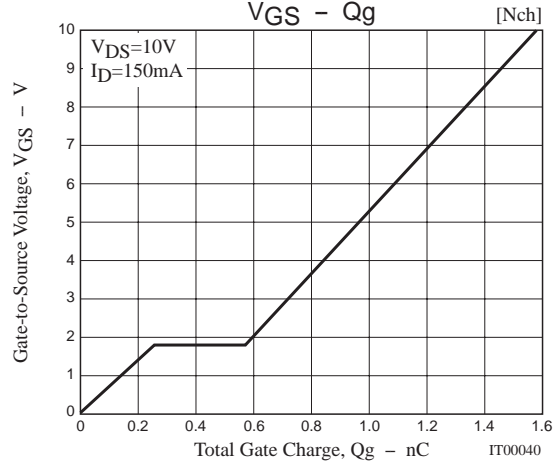
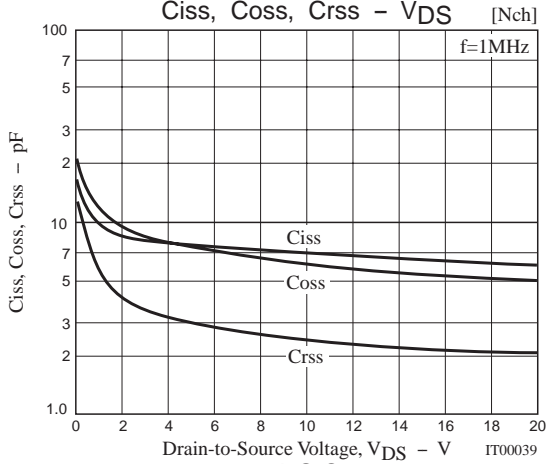
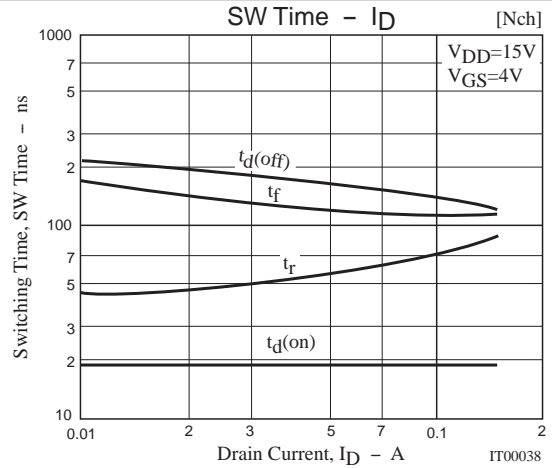
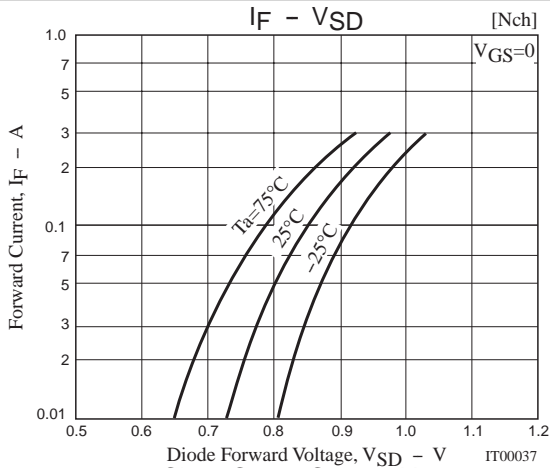
## Electrical Connection



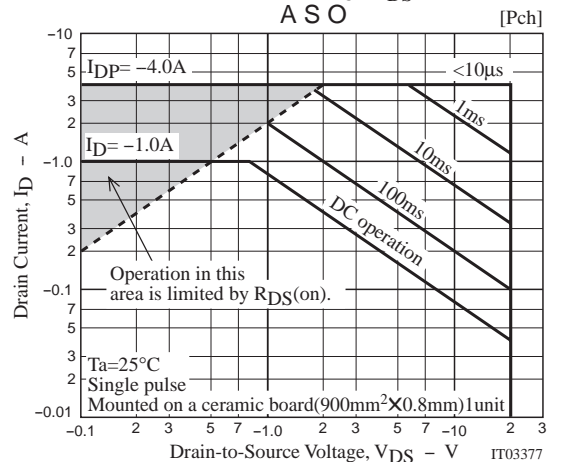
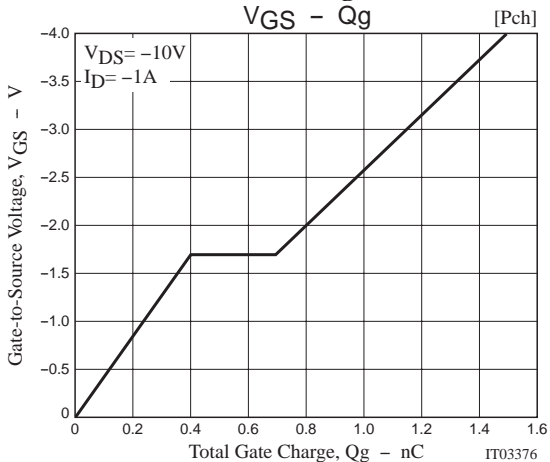
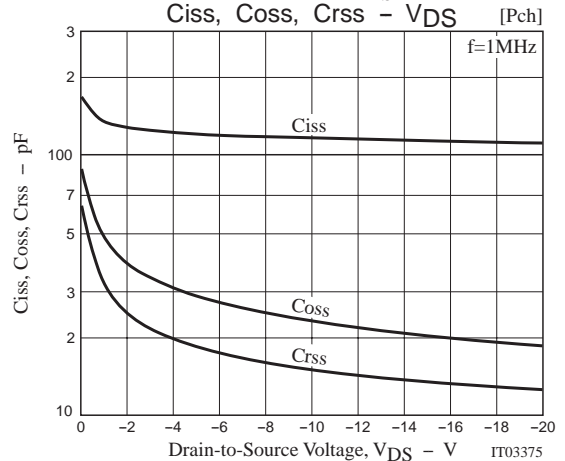
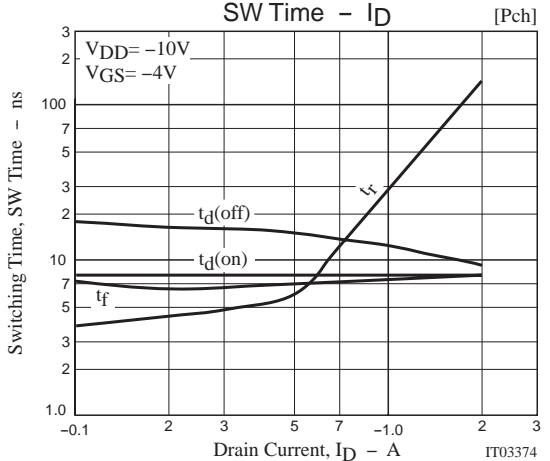
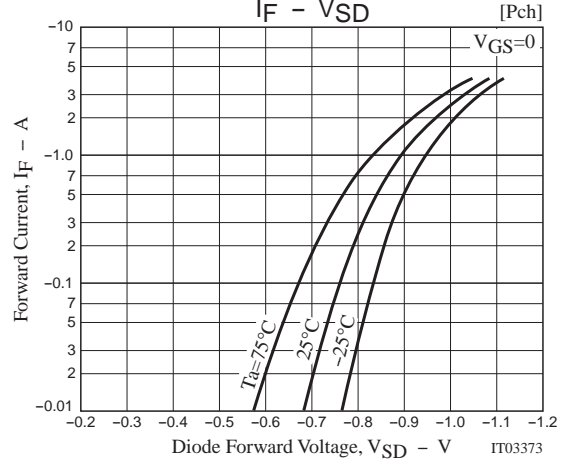
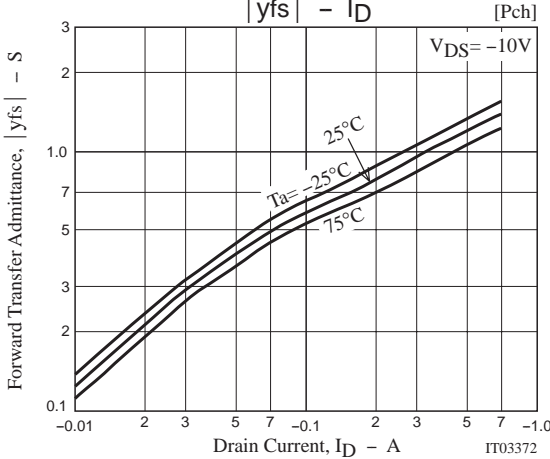
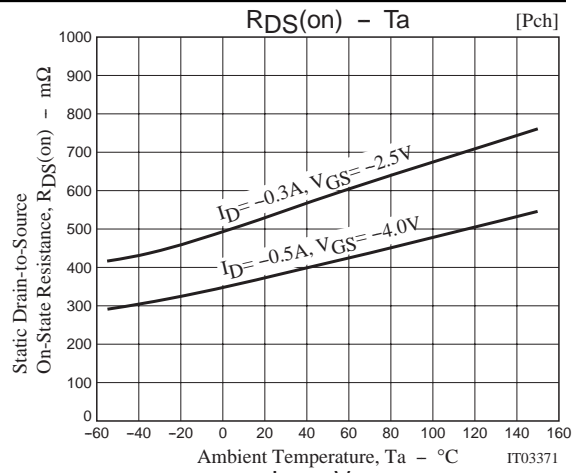
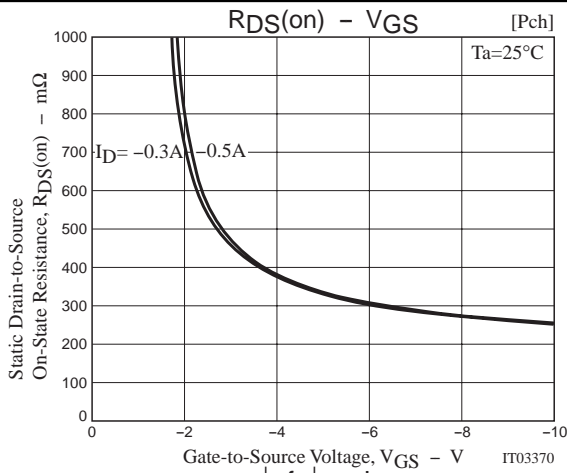
# MCH6628



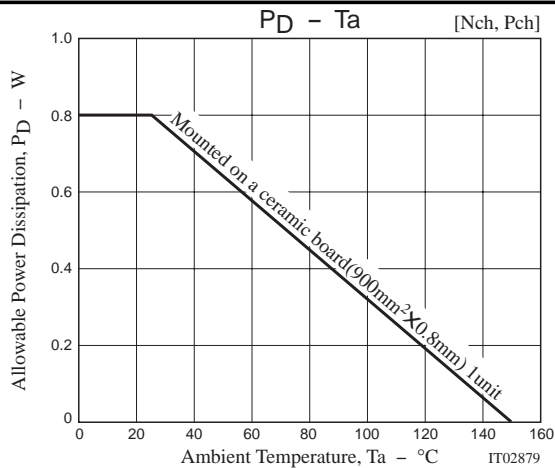
# MCH6628



# MCH6628



## MCH6628



Note on usage : Since the MCH6628 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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