



MCH6627 — General-Purpose Switching Device Applications

N-Channel and P-Channel Silicon MOSFETs

Features

- The MCH6627 incorporates a 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.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V _{DSS}		30	-30	V
Gate-to-Source Voltage	V _{GSS}		±20	±20	V
Drain Current (DC)	I _D		1.4	-1.0	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	5.6	-4.0	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²X0.8mm)1unit	0.8		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	
[N-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0	30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	1.2		2.6	V
Forward Transfer Admittance	yfs	VDS=10V, ID=0.7A	0.6	1.1		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=0.7A, VGS=10V		230	300	mΩ
	RDS(on)2	ID=0.4A, VGS=4V		400	560	mΩ
Input Capacitance	Ciss	VDS=10V, f=1MHz		65		pF
Output Capacitance	Coss	VDS=10V, f=1MHz		14		pF
Reverse Transfer Capacitance	Crss	VDS=10V, f=1MHz		8		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		5		ns
Rise Time	tr	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		11		ns
Fall Time	tf	See specified Test Circuit.		3		ns

Marking : WB

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MCH6627

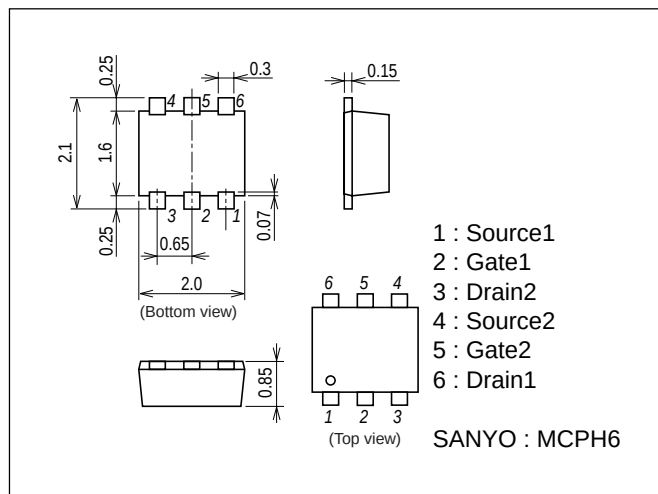
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=1.4A$		2.5		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=1.4A$		0.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=1.4A$		0.3		nC
Diode Forward Voltage	V_{SD}	$I_S=1.4A, V_{GS}=0$		0.87	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1mA, V_{GS}=0$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-500mA$	0.4	0.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-500mA, V_{GS}=-10V$		420	550	$m\Omega$
	$R_{DS(on)2}$	$I_D=-300mA, V_{GS}=-4V$		720	1000	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		75		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		16		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		9		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		6		ns
Rise Time	t_r	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		12		ns
Fall Time	t_f	See specified Test Circuit.		4		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		2.6		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		0.5		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		0.5		nC
Diode Forward Voltage	V_{SD}	$I_S=-1A, V_{GS}=0$		-0.89	-1.5	V

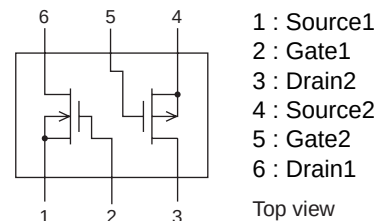
Package Dimensions

unit : mm

2173A

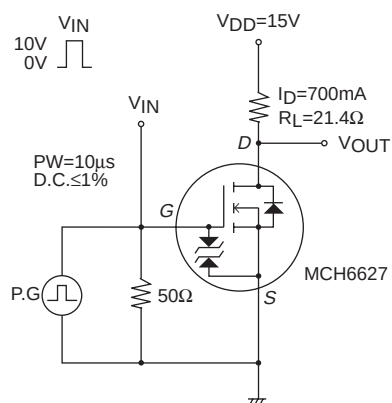


Electrical Connection

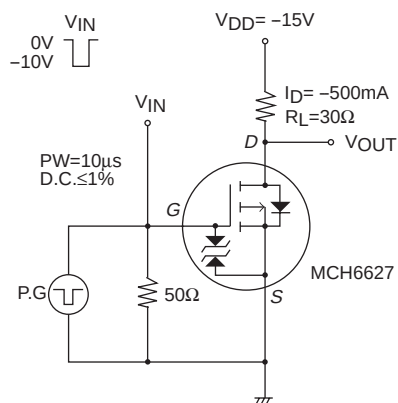


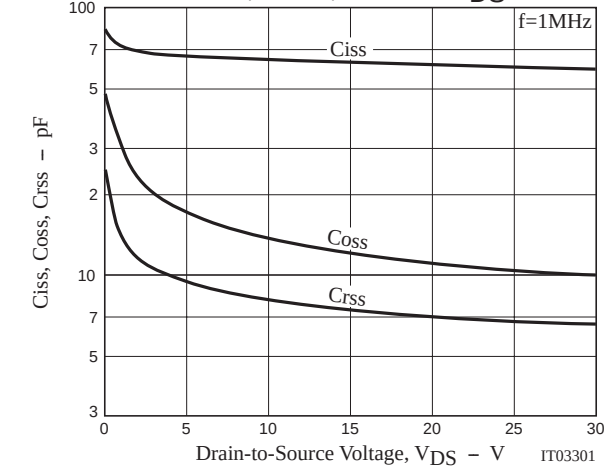
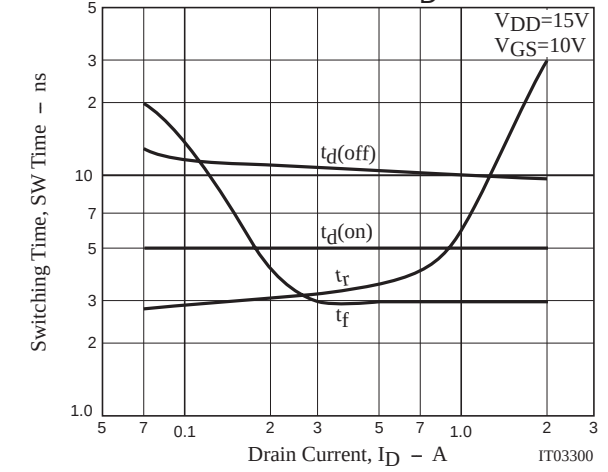
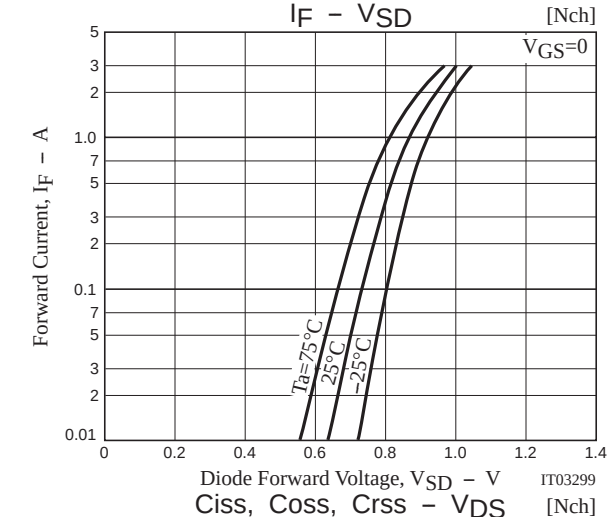
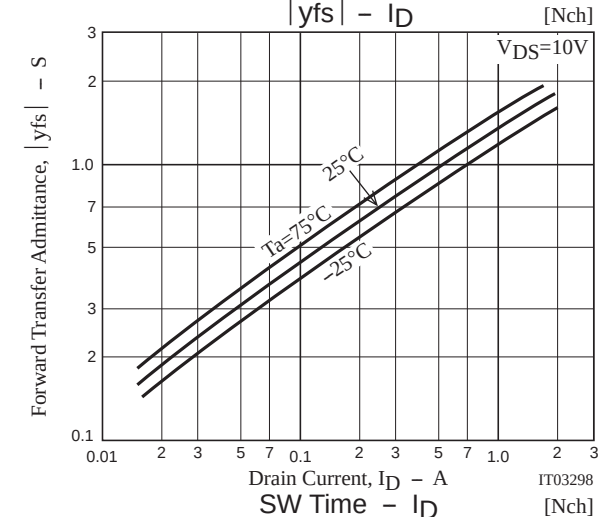
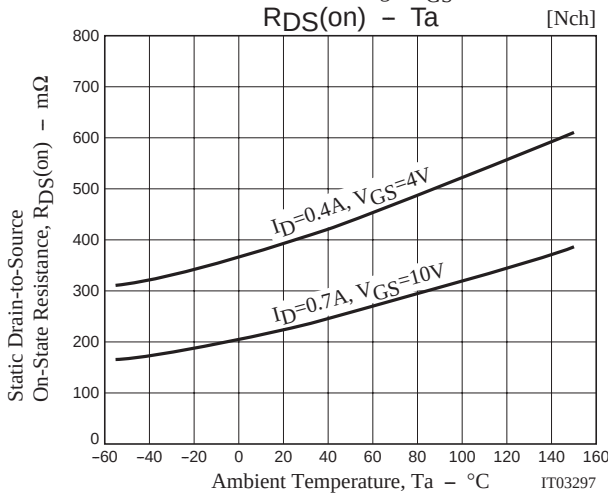
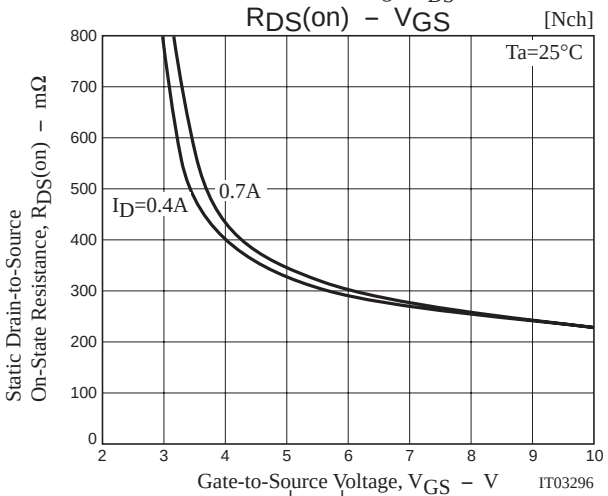
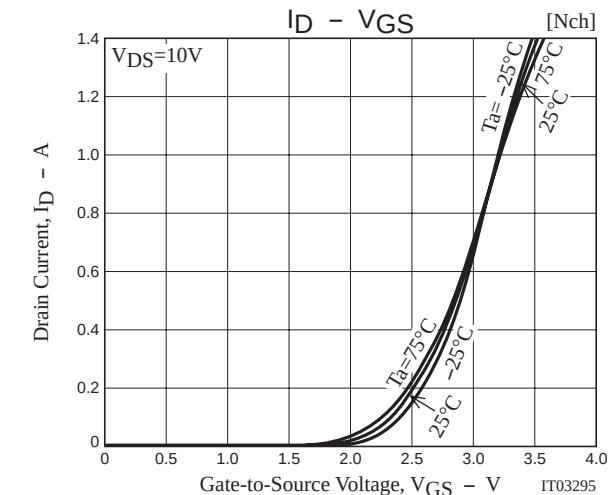
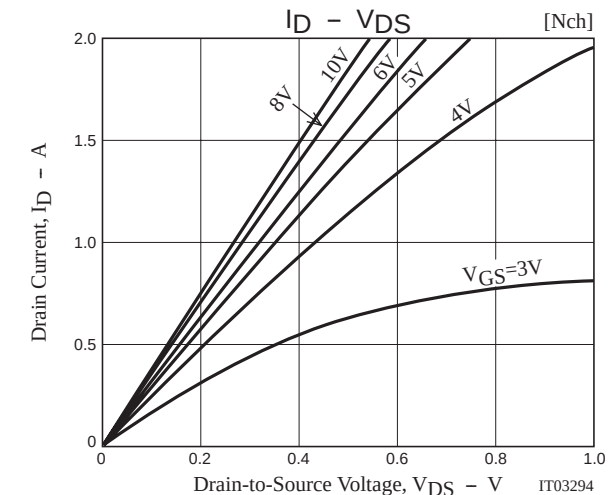
Switching Time Test Circuit

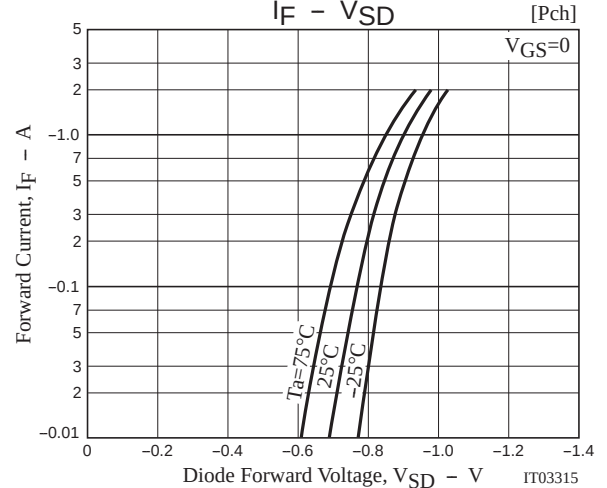
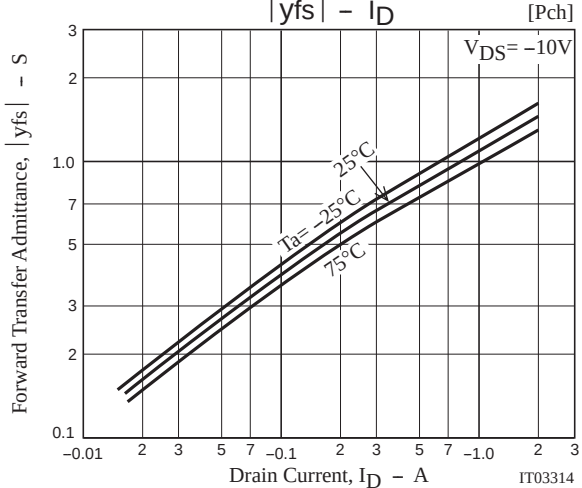
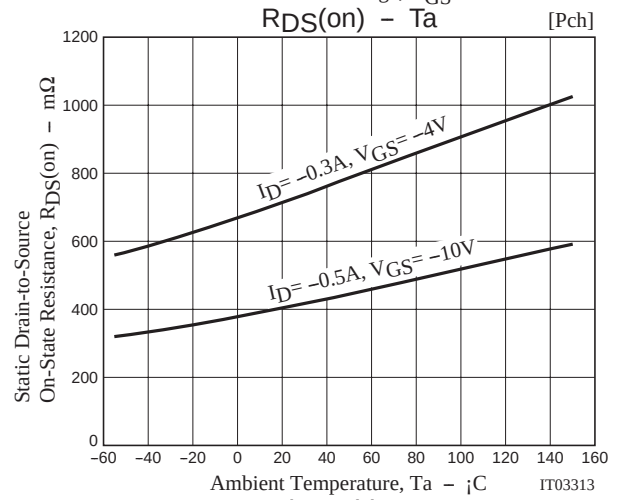
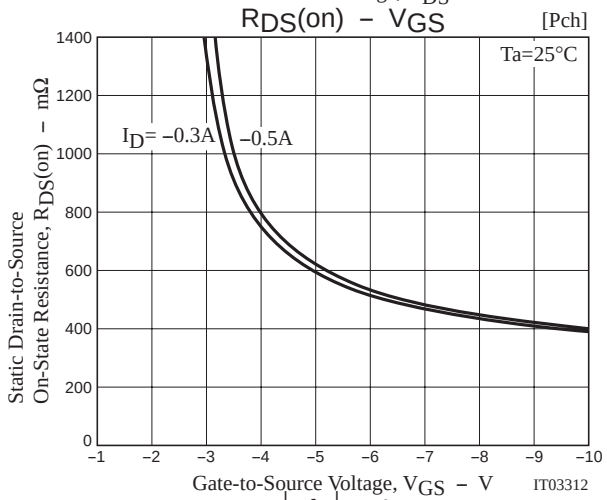
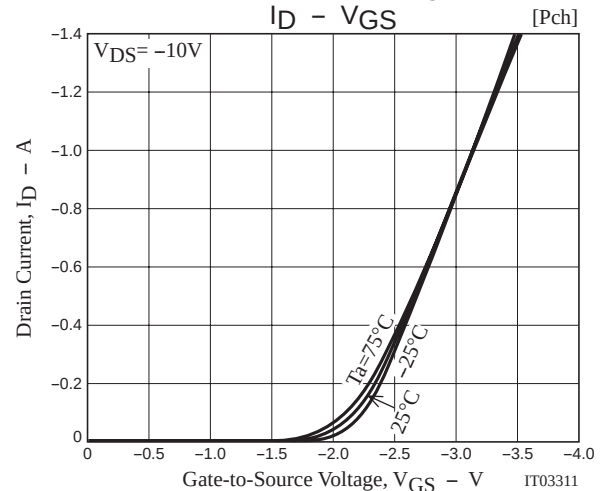
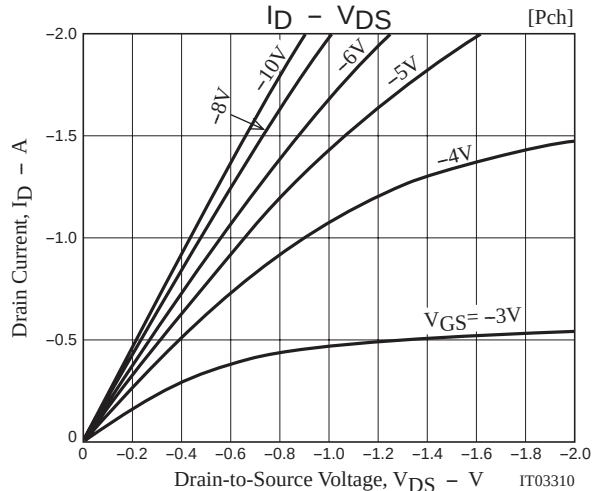
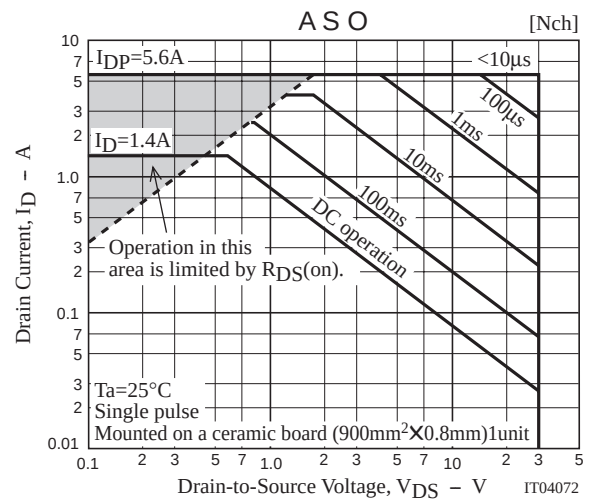
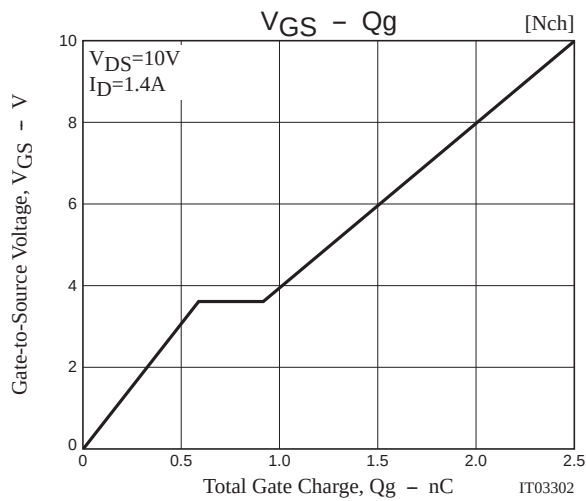
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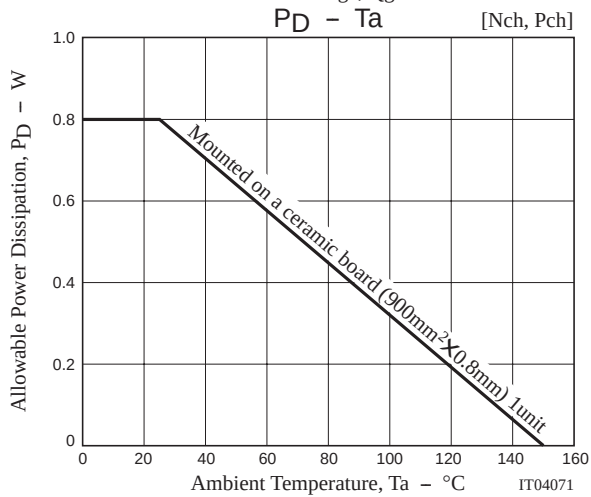
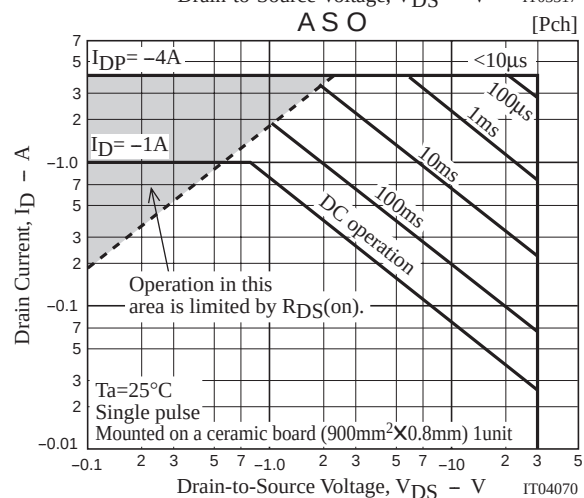
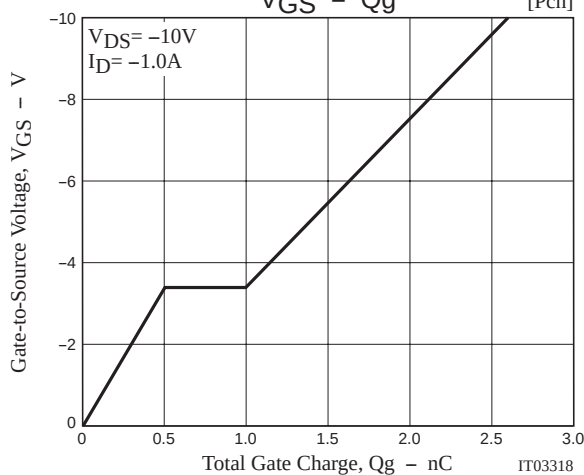
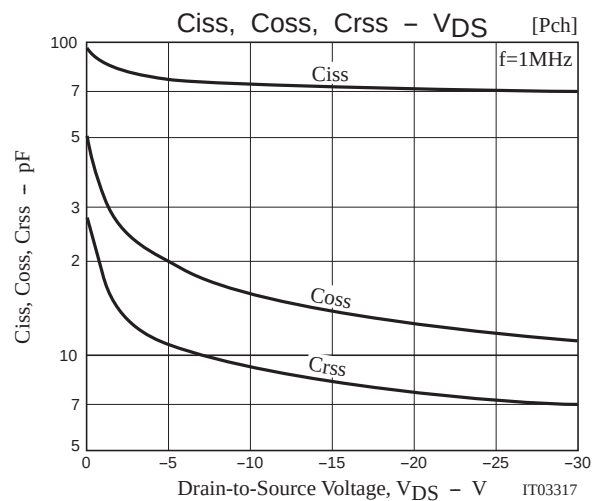
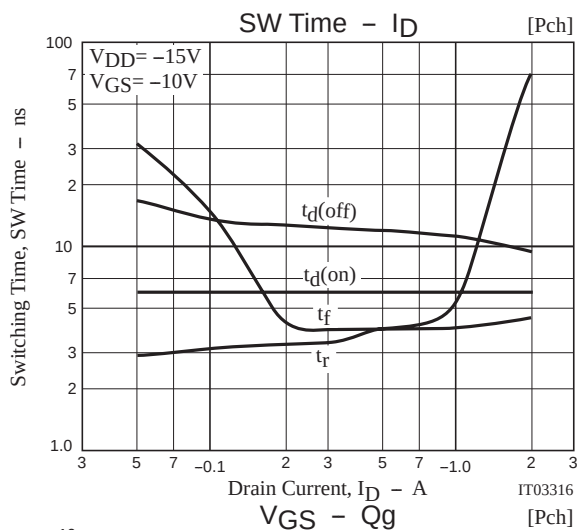


[P-channel]









Note on usage : Since the MCH6627 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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