



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel and P-Channel Silicon MOSFETs

MCH6663 — General-Purpose Switching Device Applications

Features

- ON-resistance Nch : $R_{DS(on)1}=145m\Omega$ (typ.)
Pch : $R_{DS(on)1}=250m\Omega$ (typ.)
- 4V drive
- Halogen free compliance
- Nch+Pch MOSFET

Specifications

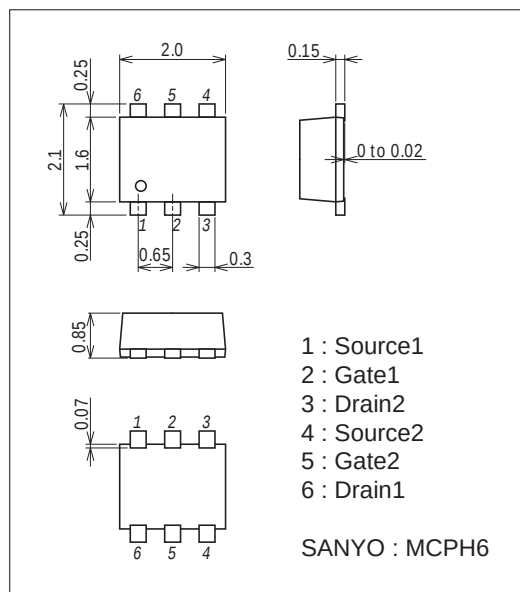
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V_{DS}		30	-30	V
Gate-to-Source Voltage	V_{GS}		± 20	± 20	V
Drain Current (DC)	I_D		1.8	-1.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	7.2	-6	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	0.8		W
Channel Temperature	T_{ch}		150		$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150		$^\circ\text{C}$

Package Dimensions

unit : mm (typ)

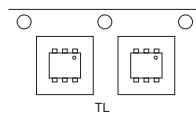
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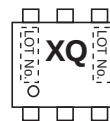
Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

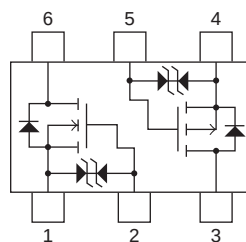
Packing Type : TL



Marking



Electrical Connection



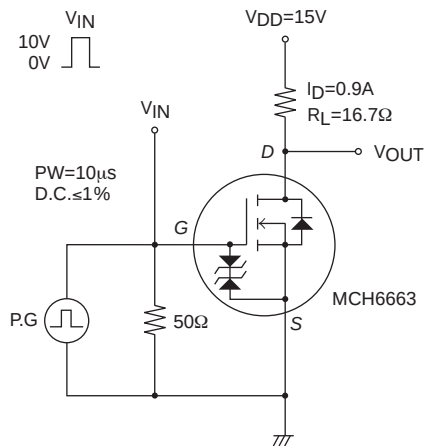
MCH6663

Electrical Characteristics at Ta=25°C

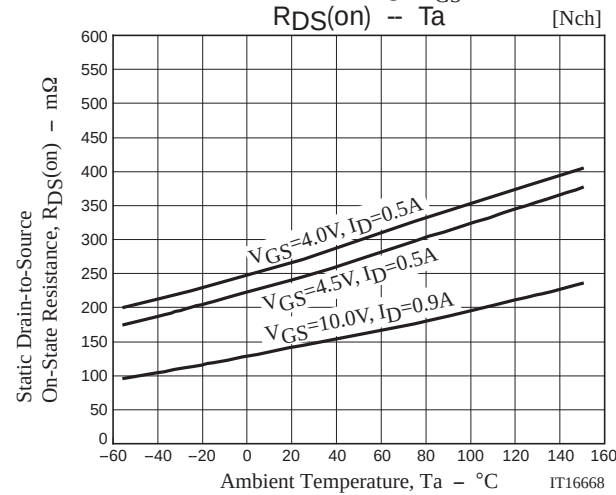
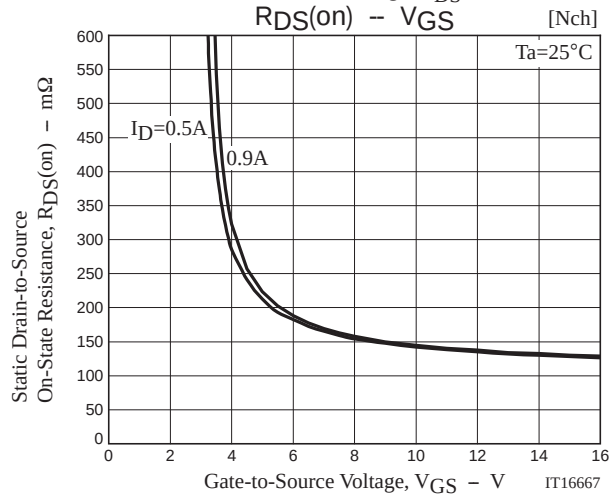
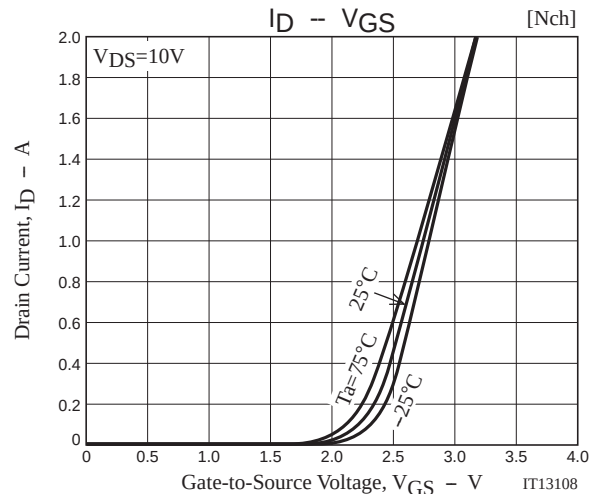
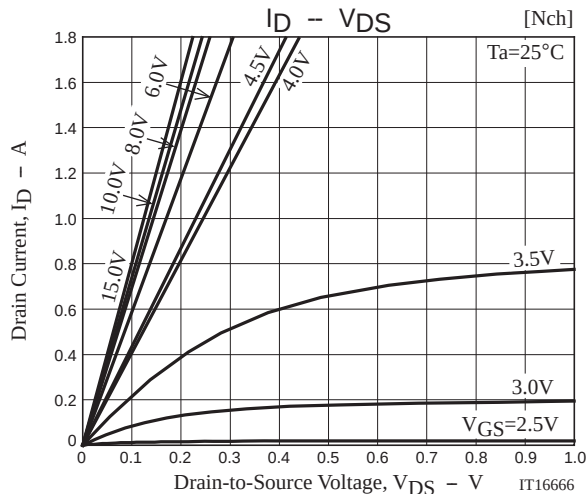
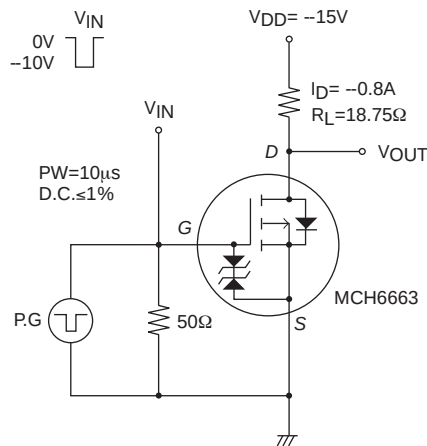
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[N-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0V	30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0V			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	1.2		2.6	V
Forward Transfer Admittance	yfs	VDS=10V, ID=0.9A		1.1		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=0.9A, VGS=10V		145	188	mΩ
	RDS(on)2	ID=0.5A, VGS=4.5V		245	343	mΩ
	RDS(on)3	ID=0.5A, VGS=4V		270	378	mΩ
Input Capacitance	Ciss	VDS=10V, f=1MHz		88		pF
Output Capacitance	Coss			19		pF
Reverse Transfer Capacitance	Crss			11		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		3.4		ns
Rise Time	tr			3.6		ns
Turn-OFF Delay Time	td(off)			10.5		ns
Fall Time	tf			4.0		ns
Total Gate Charge	Qg	VDS=15V, VGS=10V, ID=1.8A		2.0		nC
Gate-to-Source Charge	Qgs			0.33		nC
Gate-to-Drain "Miller" Charge	Qgd			0.29		nC
Diode Forward Voltage	VSD	IS=1.8A, VGS=0V		0.86	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0V	-30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-30V, VGS=0V			-1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-1.2		-2.6	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-0.8A		1.3		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-0.8A, VGS=-10V		250	325	mΩ
	RDS(on)2	ID=-0.4A, VGS=-4.5V		397	555	mΩ
	RDS(on)3	ID=-0.4A, VGS=-4V		458	641	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		82		pF
Output Capacitance	Coss			22		pF
Reverse Transfer Capacitance	Crss			16		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		4.0		ns
Rise Time	tr			3.3		ns
Turn-OFF Delay Time	td(off)			12		ns
Fall Time	tf			5.4		ns
Total Gate Charge	Qg	VDS=-15V, VGS=-10V, ID=-1.5A		2.2		nC
Gate-to-Source Charge	Qgs			0.36		nC
Gate-to-Drain "Miller" Charge	Qgd			0.49		nC
Diode Forward Voltage	VSD	IS=-1.5A, VGS=0V		-0.9	-1.5	V

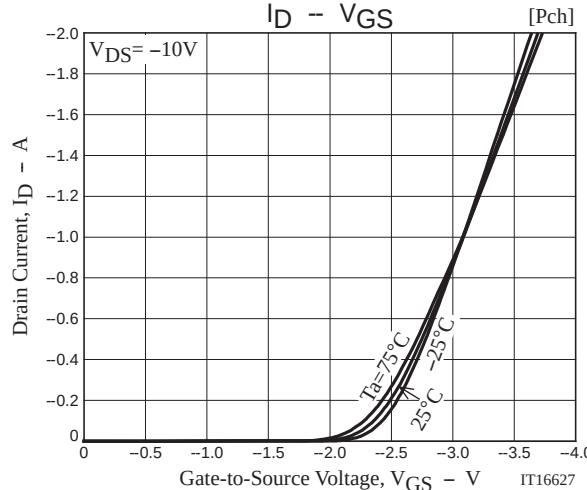
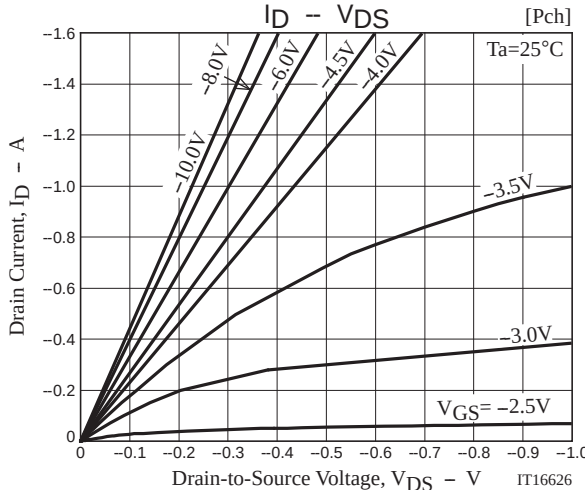
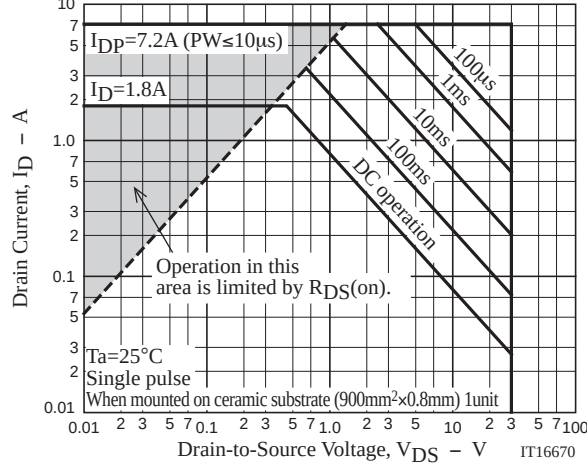
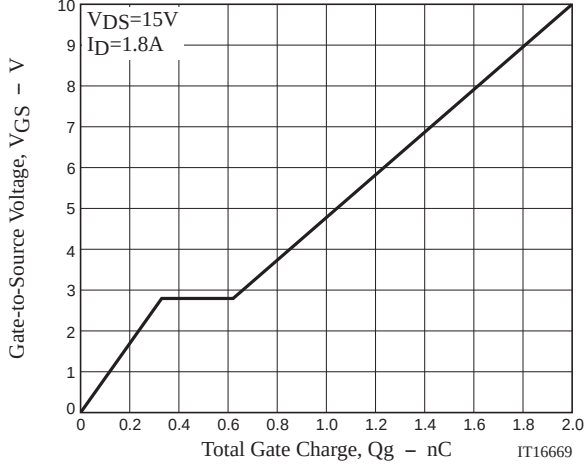
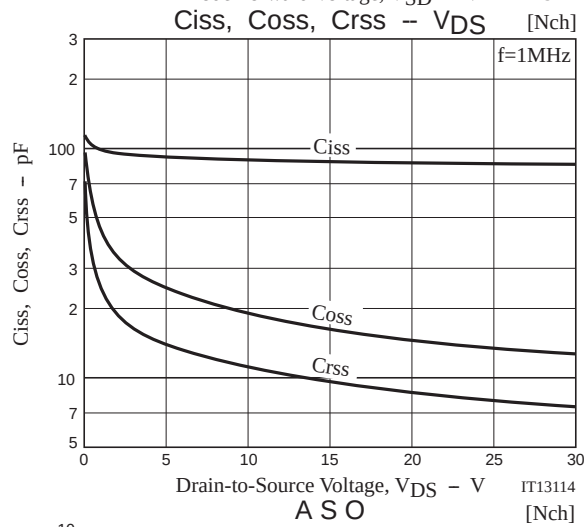
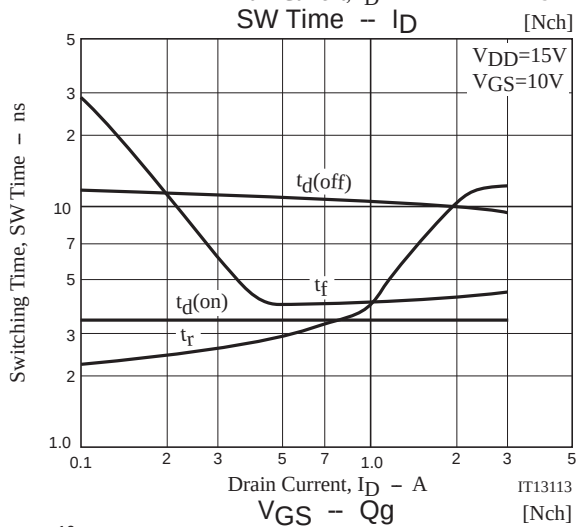
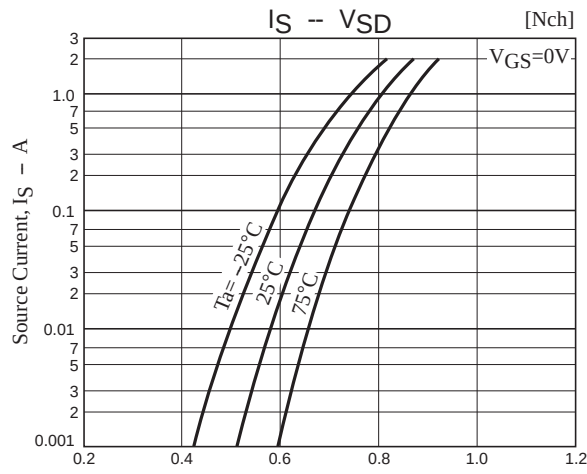
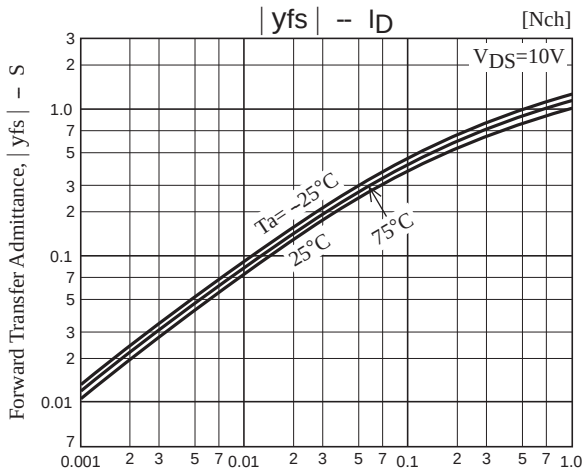
Switching Time Test Circuit

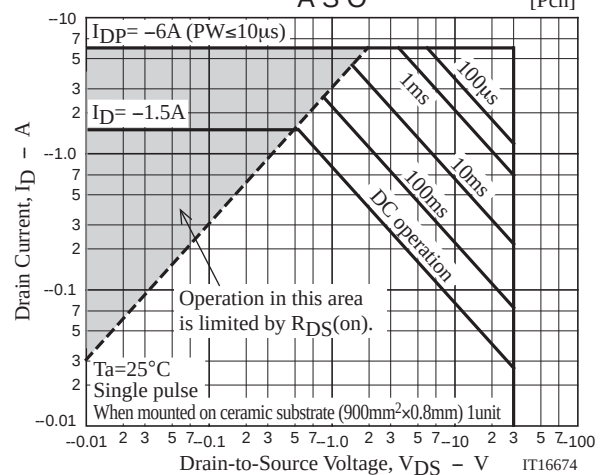
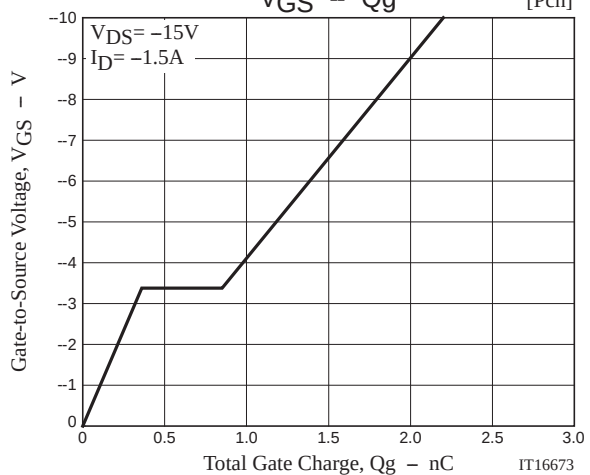
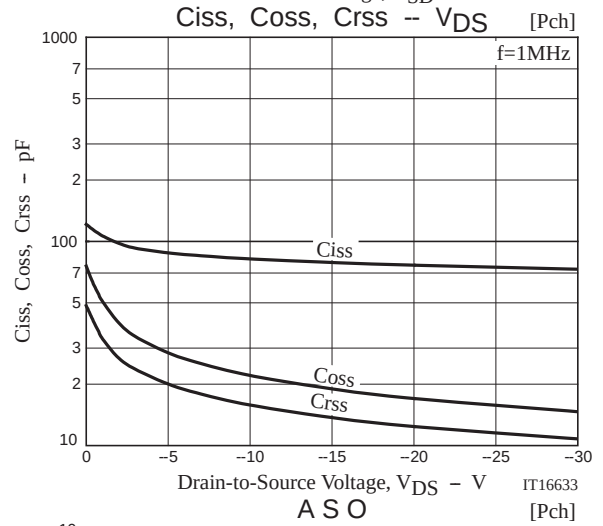
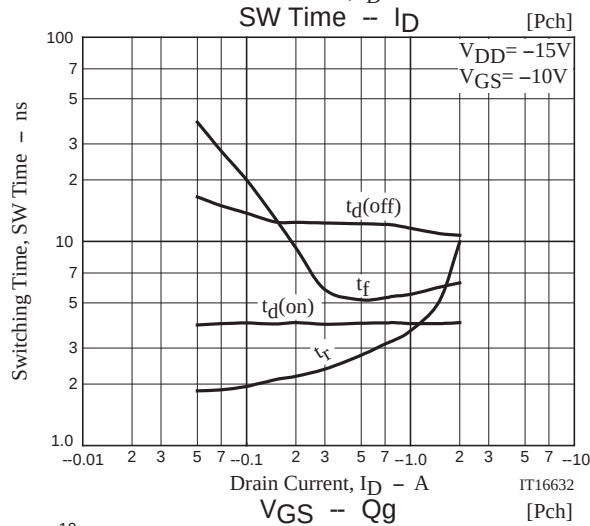
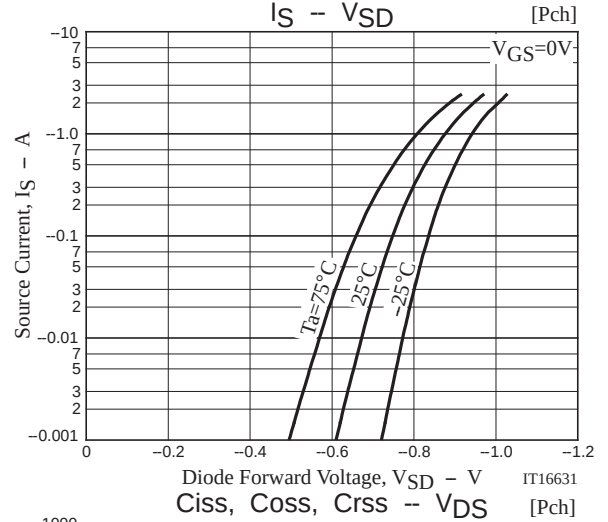
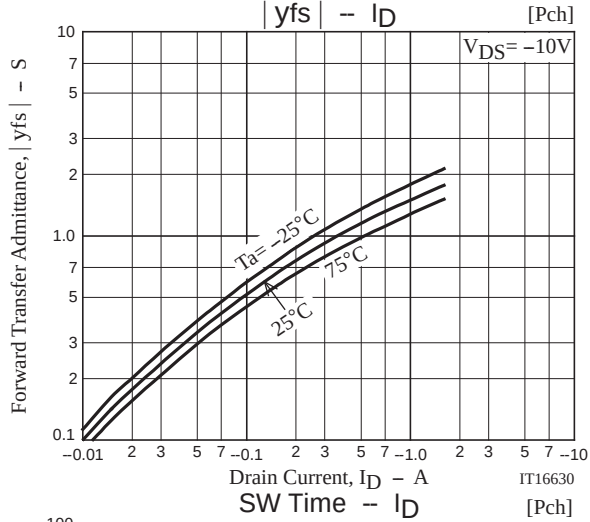
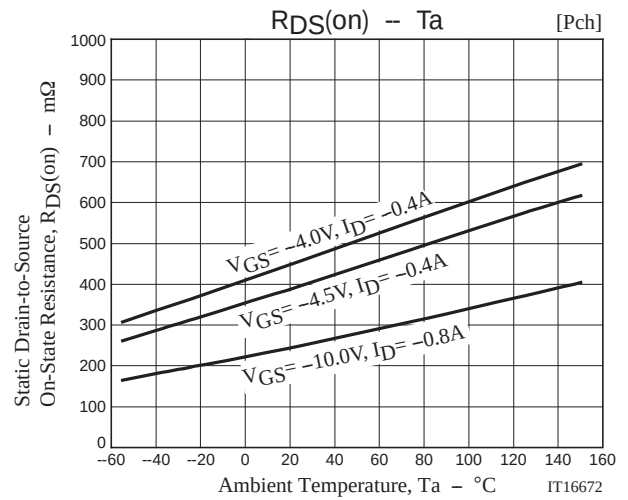
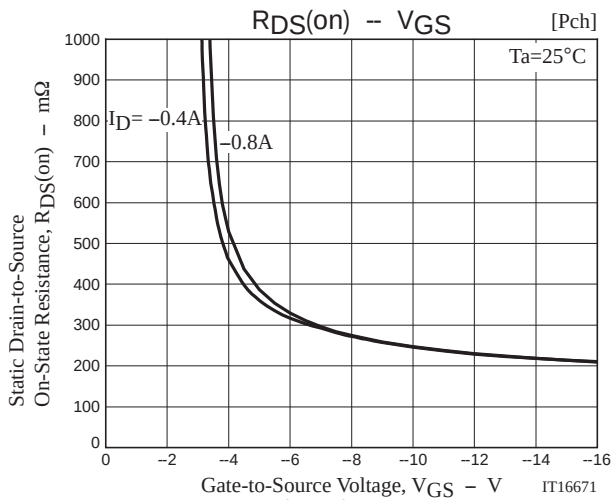
[N-channel]

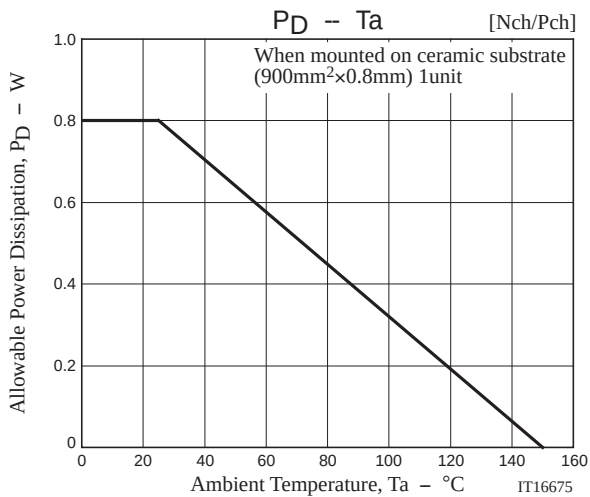


[P-channel]









Note on usage : Since the MCH6663 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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