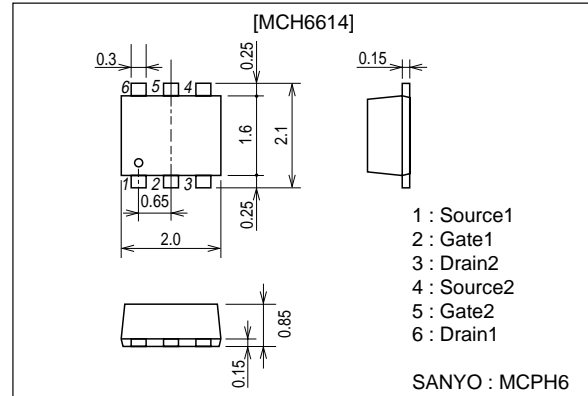


**MCH6614****Ultrahigh-Speed Switching Applications****Features**

- The MCH6614 incorporates two elements that are an N-channel and a P-channel MOSFETs that feature low ON resistance and high-speed switching, thereby enabling high-density mounting.
- Low ON-resistance.
- 2.5V drive.

Package Dimensionsunit : mm
2173**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}		±10	±10	V
Drain Current (DC)	I _D		0.35	-0.4	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	1.4	-1.6	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm ² X0.8mm)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}	I _D =1mA, V _{GS} =0	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0			10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =100μA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =80mA	150	220		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =80mA, V _{GS} =4V		2.9	3.7	Ω
	R _{DS(on)2}	I _D =40mA, V _{GS} =2.5V		3.7	5.2	Ω
	R _{DS(on)3}	I _D =10mA, V _{GS} =1.5V		6.4	12.8	Ω

Marking : FN

Continued on next page.

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

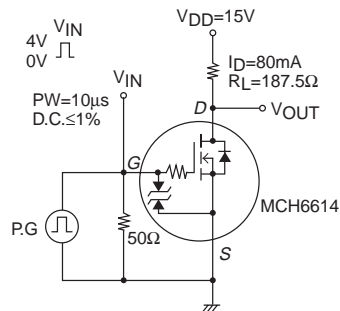
MCH6614

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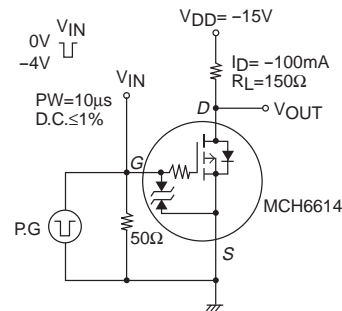
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		7.0		pF
Output Capacitance	Coss	V _{DS} =10V, f=1MHz		5.9		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		2.3		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit		19		ns
Rise Time	t _r	See specified Test Circuit		65		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit		155		ns
Fall Time	t _f	See specified Test Circuit		120		ns
Total Gate Charge	Qg	V _{DS} =10V, V _{GS} =10V, I _D =150mA		1.58		nC
Gate-to-Source Charge	Qgs	V _{DS} =10V, V _{GS} =10V, I _D =150mA		0.26		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =10V, V _{GS} =10V, I _D =150mA		0.31		nC
Diode Forward Voltage	V _{SD}	I _S =150mA, 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			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-100μA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-100mA	210	300		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-100mA, V _{GS} =-4V		2.4	3.1	Ω
	R _{DS(on)2}	I _D =-50mA, V _{GS} =-2.5V		3.5	4.9	Ω
	R _{DS(on)3}	I _D =-10mA, V _{GS} =-1.5V		10	20	Ω
Input Capacitance	Ciss	V _{DS} =-10V, f=1MHz		28		pF
Output Capacitance	Coss	V _{DS} =-10V, f=1MHz		15		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-10V, f=1MHz		5.2		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit		24		ns
Rise Time	t _r	See specified Test Circuit		75		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit		200		ns
Fall Time	t _f	See specified Test Circuit		150		ns
Total Gate Charge	Qg	V _{DS} =-10V, V _{GS} =-10V, I _D =-200mA		2		nC
Gate-to-Source Charge	Qgs	V _{DS} =-10V, V _{GS} =-10V, I _D =-200mA		0.25		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =-10V, V _{GS} =-10V, I _D =-200mA		0.35		nC
Diode Forward Voltage	V _{SD}	I _S =-200mA, V _{GS} =0		-0.82	-1.2	V

Switching Time Test Circuit

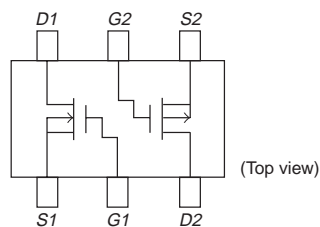
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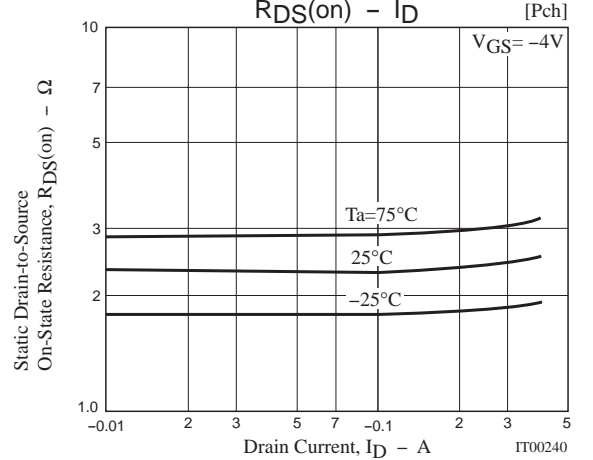
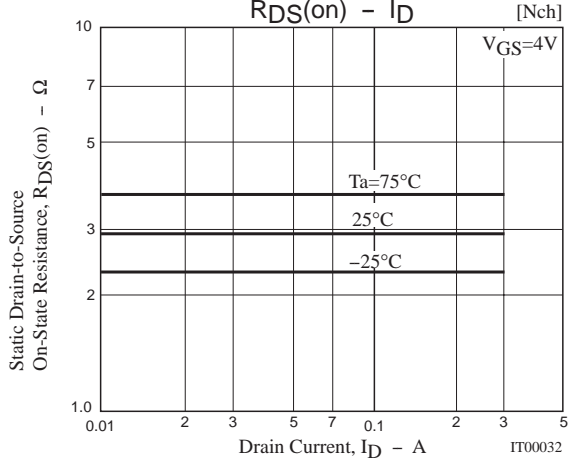
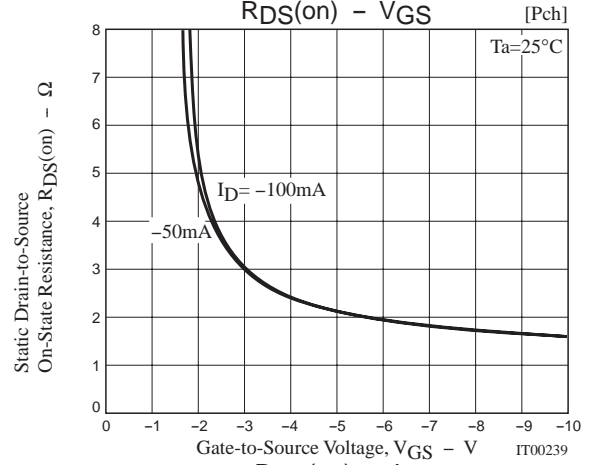
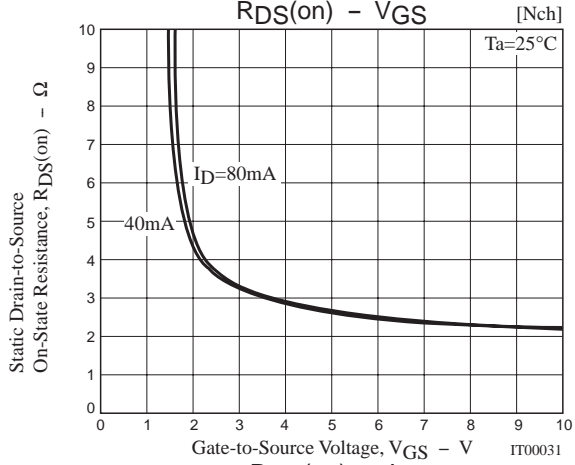
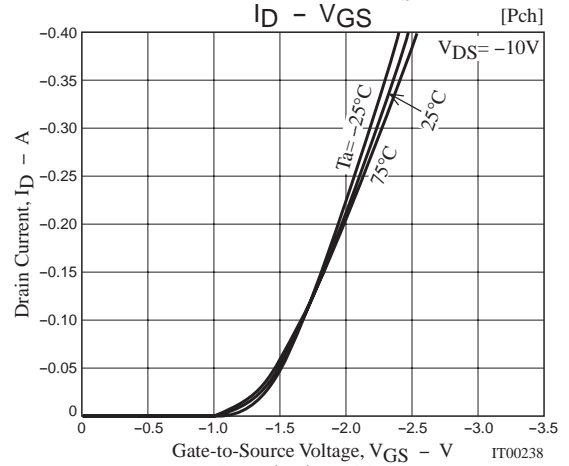
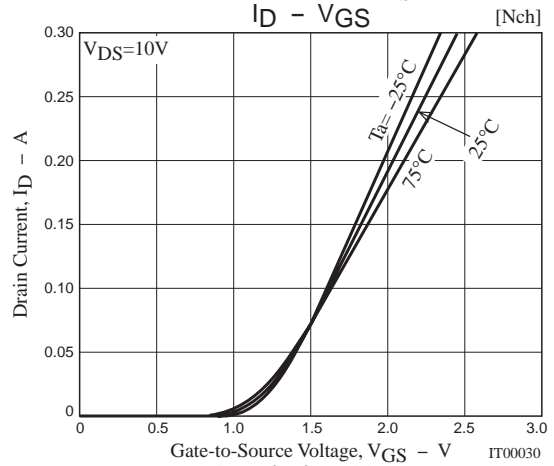
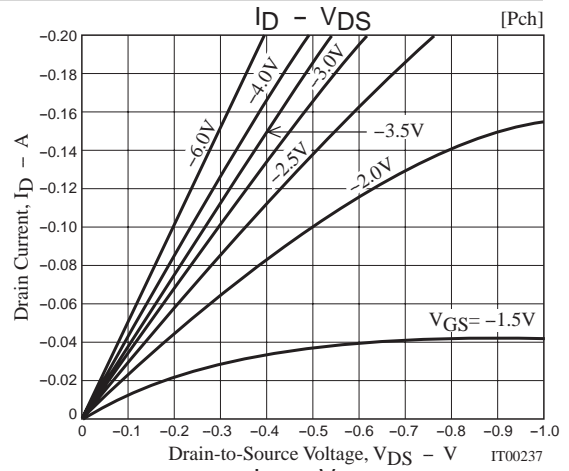
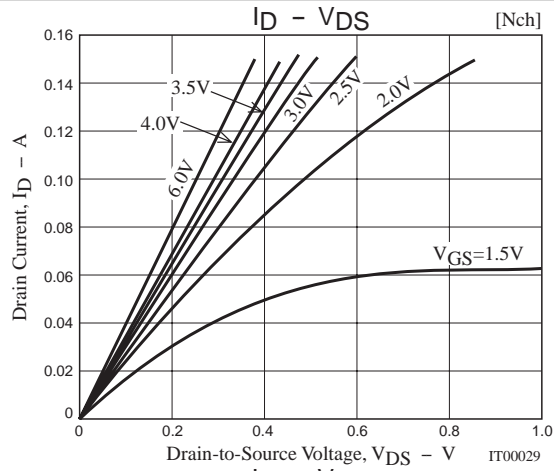
[P-channel]



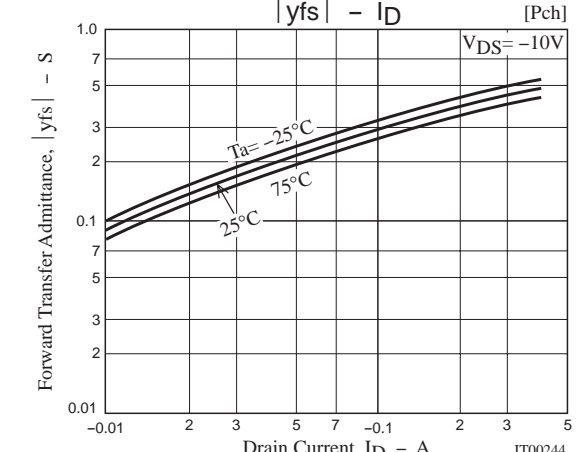
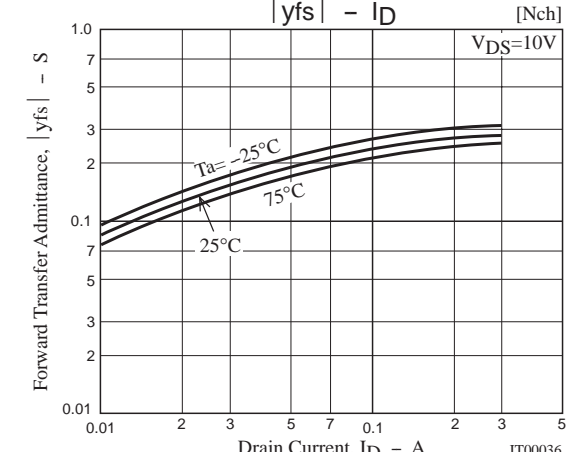
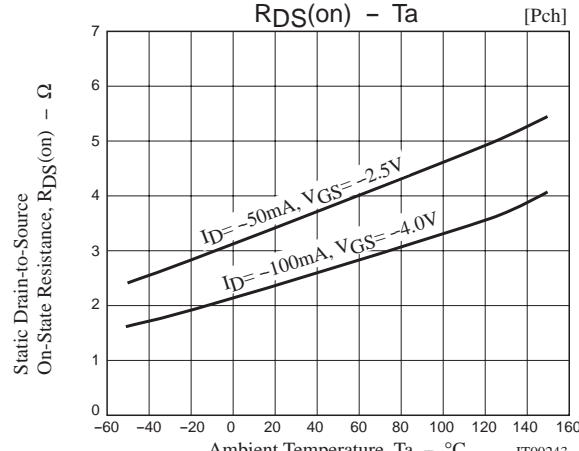
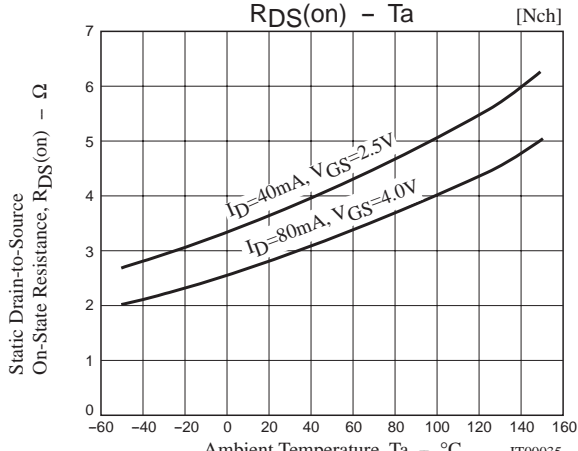
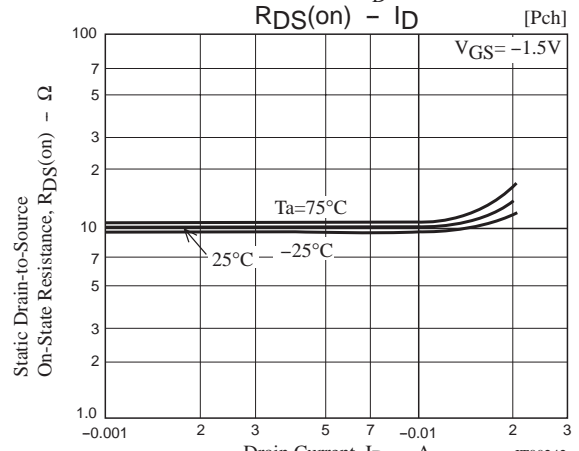
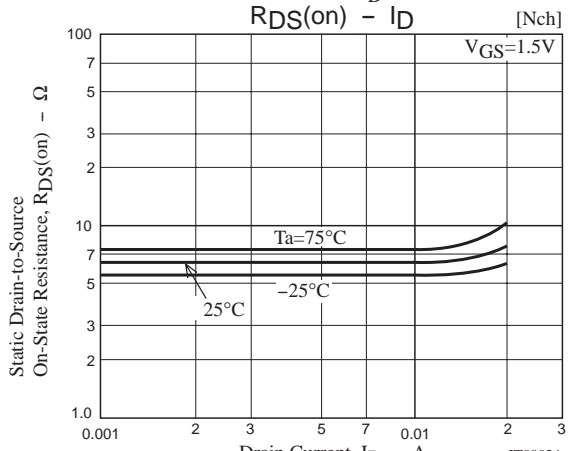
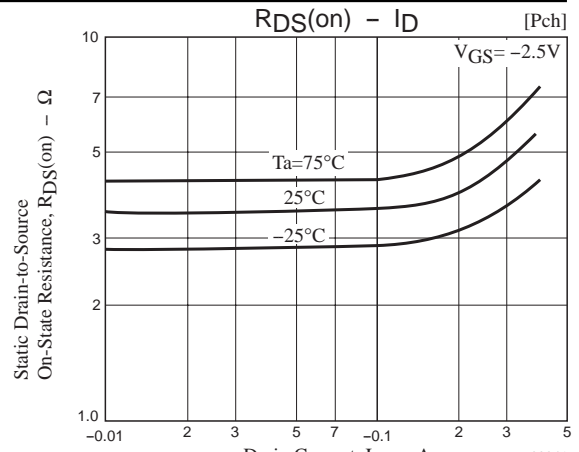
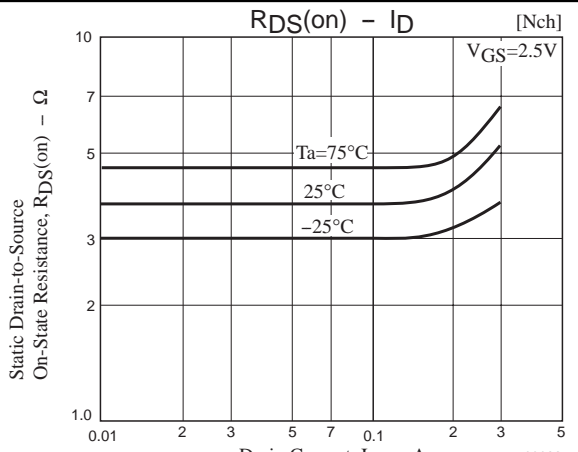
Electrical Connection



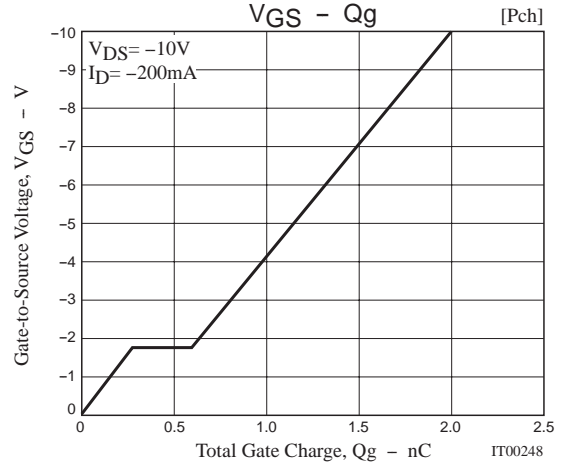
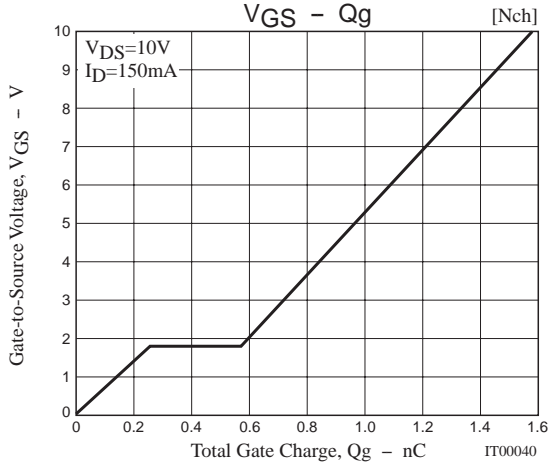
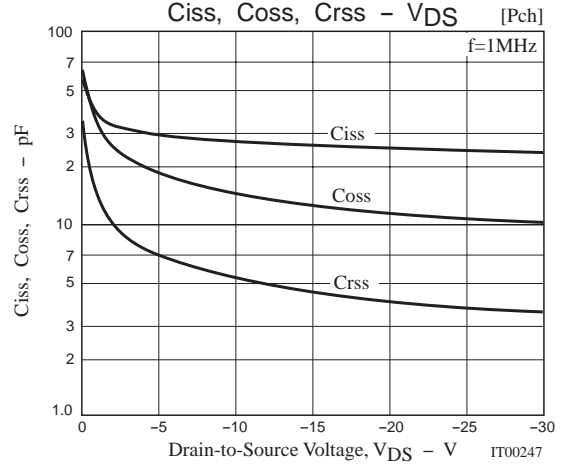
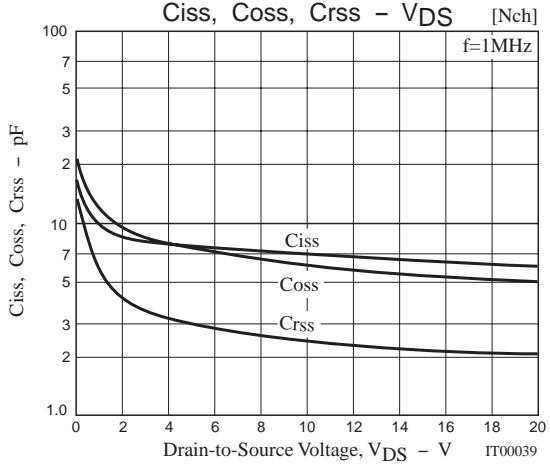
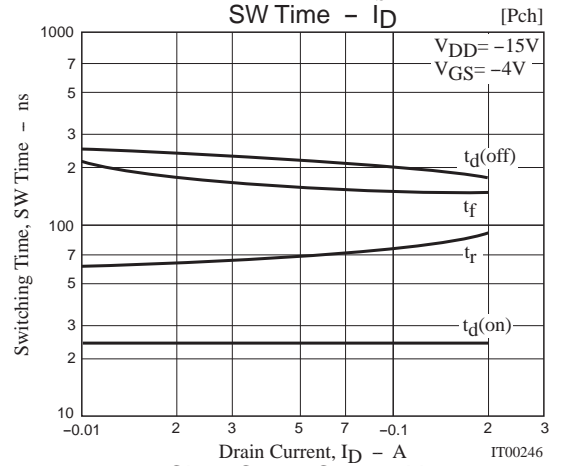
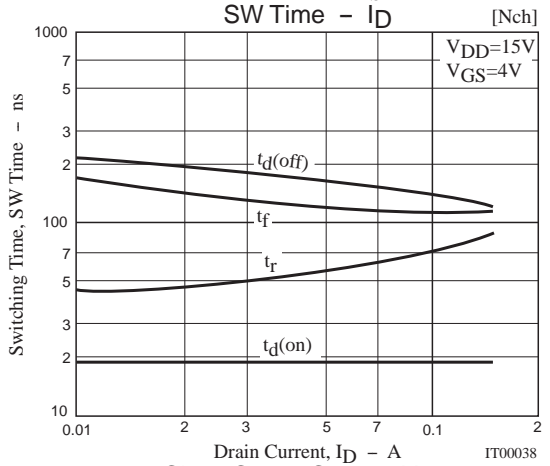
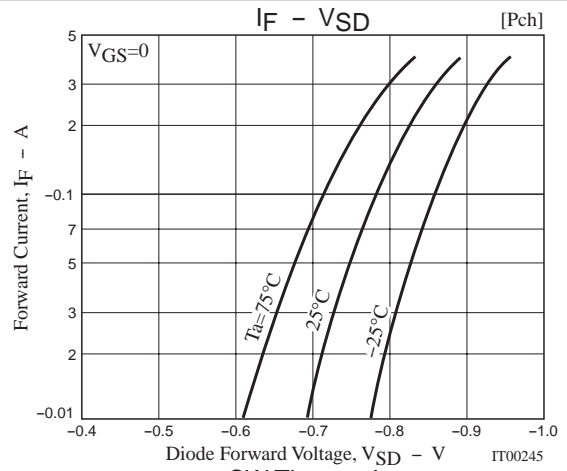
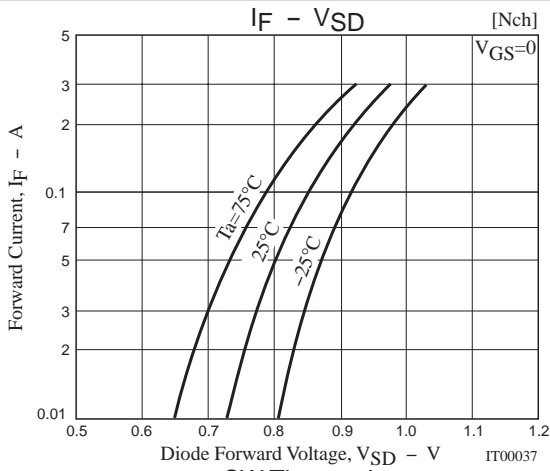
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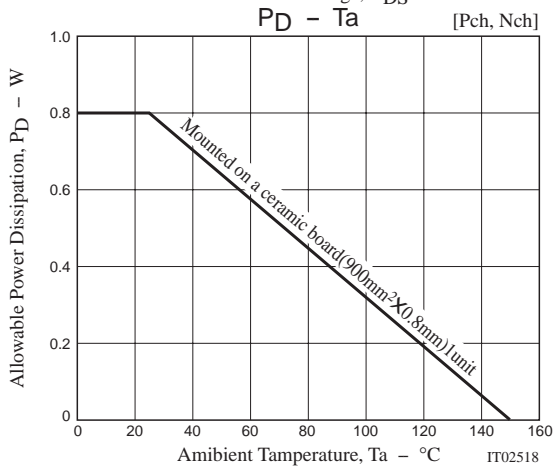
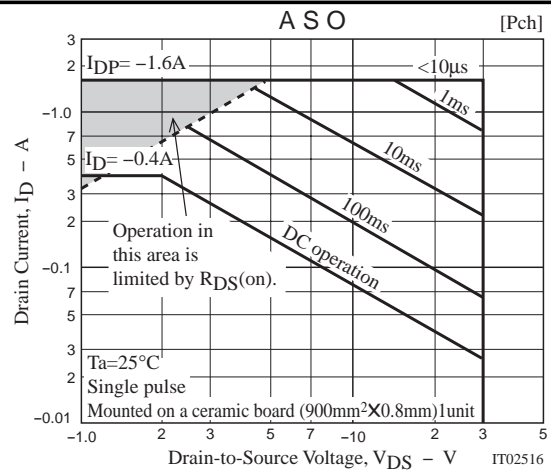
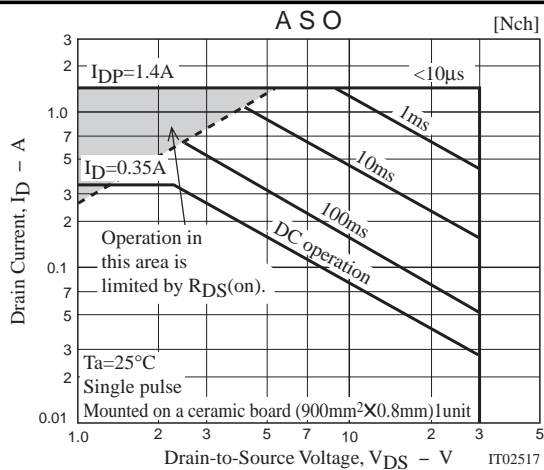
MCH6614



MCH6614



MCH6614



Note on usage : Since the MCH6614 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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