



SCH2602 — General-Purpose Switching Device

N-Channel and P-Channel Silicon MOSFETs

Applications

Features

- The SCH2602 incorporates a N-channel MOSFET and a P-channel MOSFET that feature low ON-resistance and high-speed switching, thereby enabling high-density mounting.
- Low ON-resistance.
- 2.5V drive (N-ch), 1.8V drive (P-ch).

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V _{DSS}		30	-12	V
Gate-to-Source Voltage	V _{GSS}		±10	±10	V
Drain Current (DC)	I _D		0.35	-1.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	1.4	-6	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm ² ×0.8mm) 1unit	0.6		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} =0V	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±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	130	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 : FB

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SCH2602

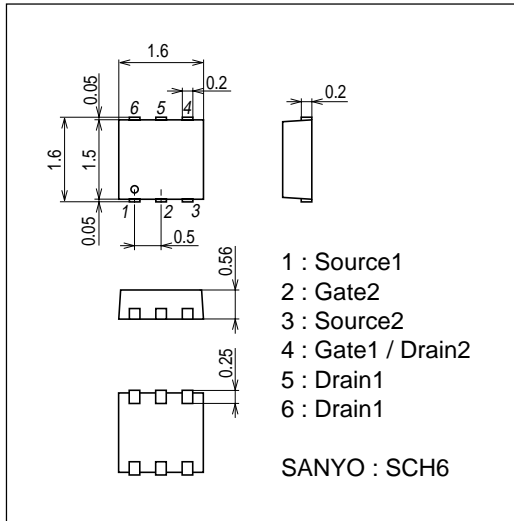
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		7.0		pF
Output Capacitance	Coss	V _{DS} =10V, f=1MHz		5.9		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		2.3		pF
Turn-ON Delay Time	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	Q _g	V _{DS} =10V, V _{GS} =4V, I _D =150mA		1.58		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =10V, V _{GS} =4V, I _D =150mA		0.26		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =10V, V _{GS} =4V, I _D =150mA		0.31		nC
Diode Forward Voltage	V _{SD}	I _S =150mA, V _{GS} =0V		0.87	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =-1mA, V _{GS} =0V	-12			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-12V, V _{GS} =0V			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-6V, I _D =-1mA	-0.3		-1.0	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-6V, I _D =-0.8A	1.1	1.8		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-0.8A, V _{GS} =-4.5V		235	310	mΩ
	R _{DS(on)2}	I _D =-0.4A, V _{GS} =-2.5V		335	470	mΩ
	R _{DS(on)3}	I _D =-0.1A, V _{GS} =-1.8V		445	670	mΩ
	R _{DS(on)4}	I _D =-50mA, V _{GS} =-1.5V		750	1250	mΩ
Input Capacitance	Ciss	V _{DS} =-6V, f=1MHz		160		pF
Output Capacitance	Coss	V _{DS} =-6V, f=1MHz		45		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-6V, f=1MHz		35		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		11		ns
Rise Time	t _r	See specified Test Circuit.		45		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		29		ns
Fall Time	t _f	See specified Test Circuit.		30		ns
Total Gate Charge	Q _g	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-1.5A		2.6		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-1.5A		0.25		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-1.5A		0.65		nC
Diode Forward Voltage	V _{SD}	I _S =-1.5A, V _{GS} =0V		-0.92	-1.5	V

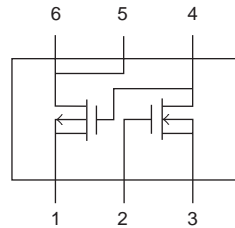
Package Dimensions

unit : mm

7028-007



Electrical Connection

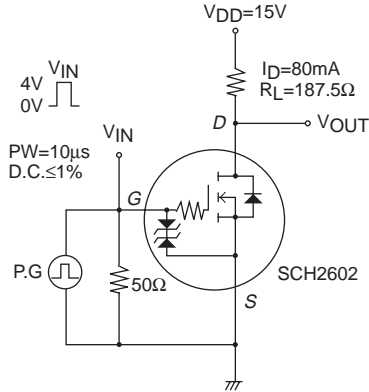


- 1 : Source1
- 2 : Gate2
- 3 : Source2
- 4 : Gate1 / Drain2
- 5 : Drain1
- 6 : Drain1

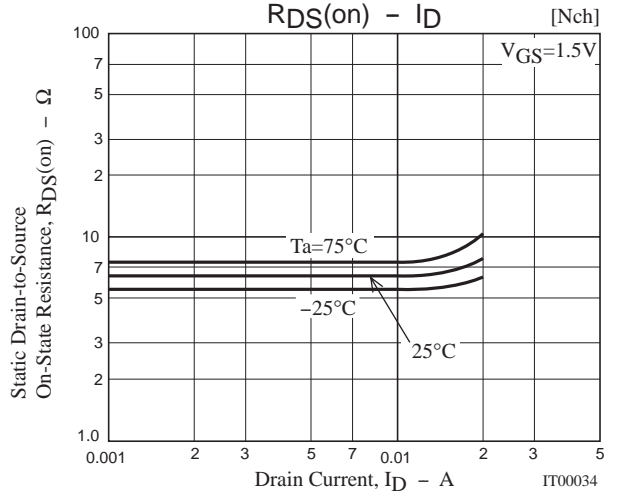
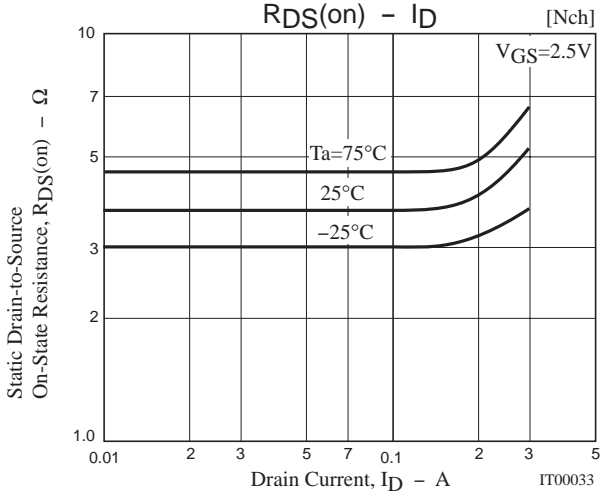
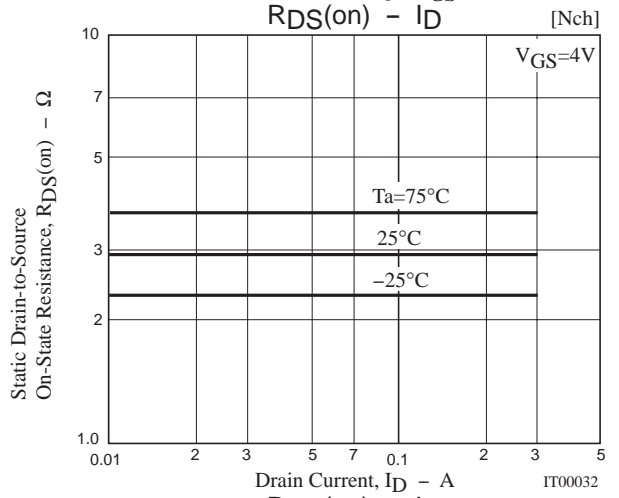
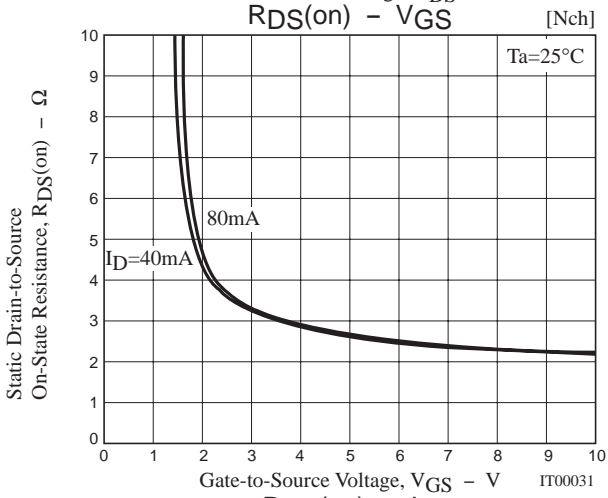
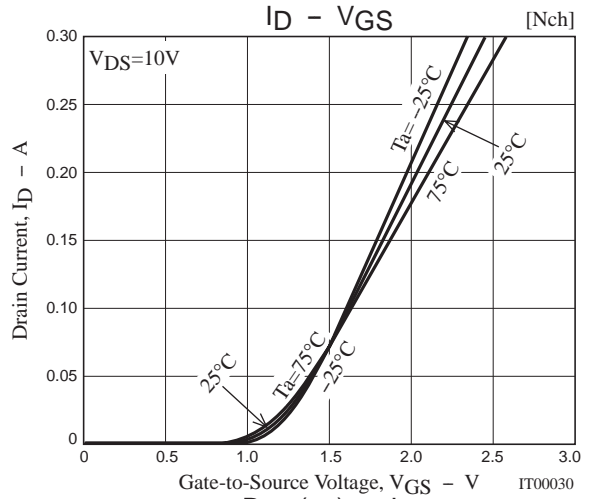
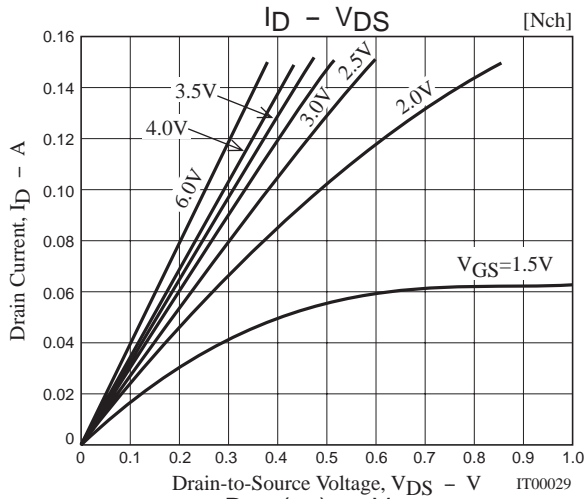
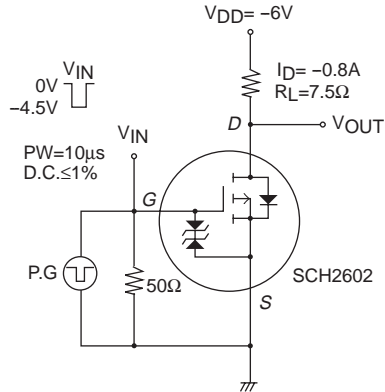
Top view

Switching Time Test Circuit

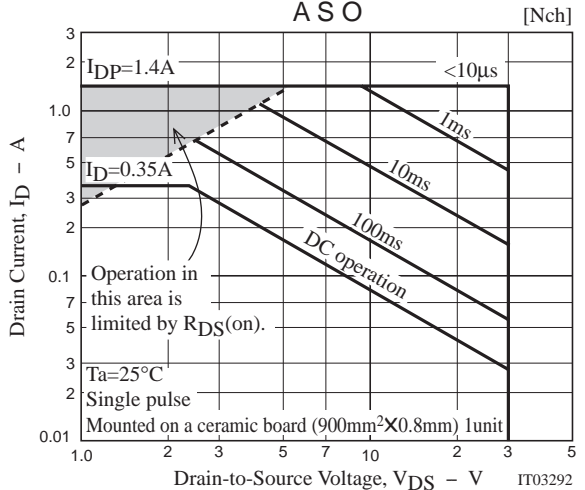
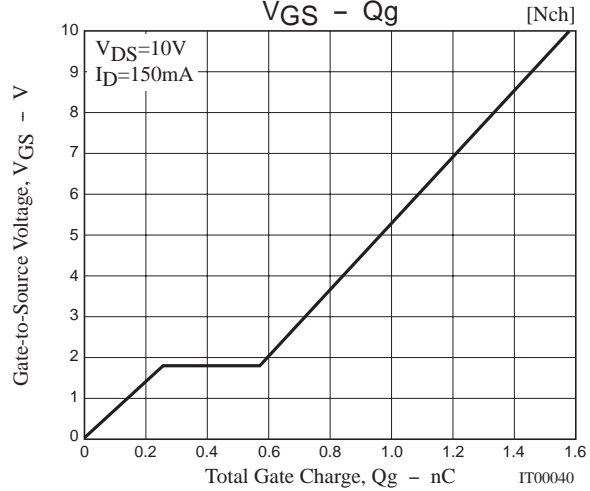
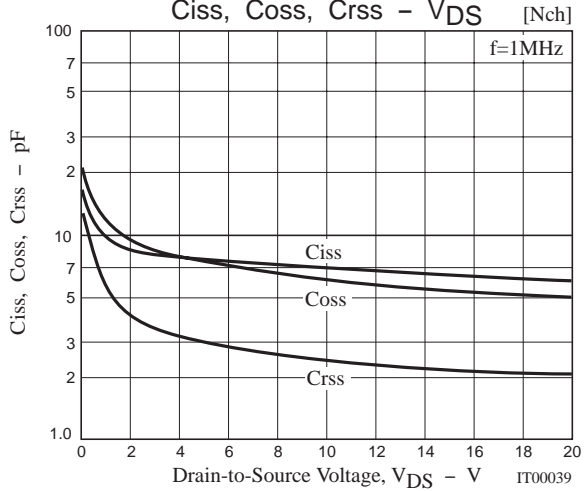
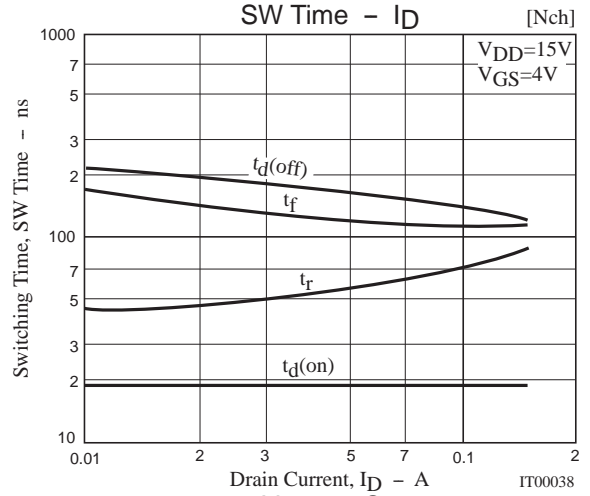
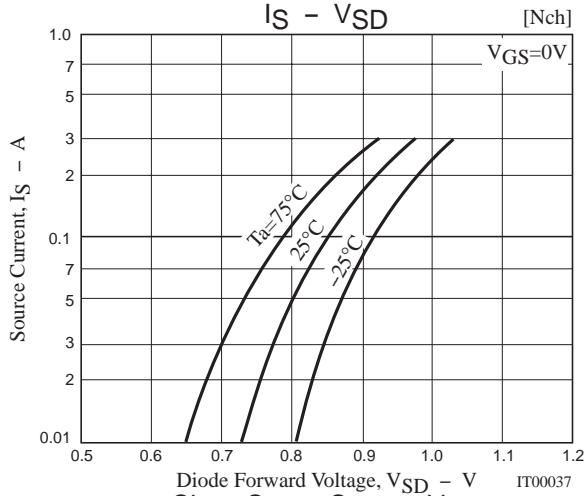
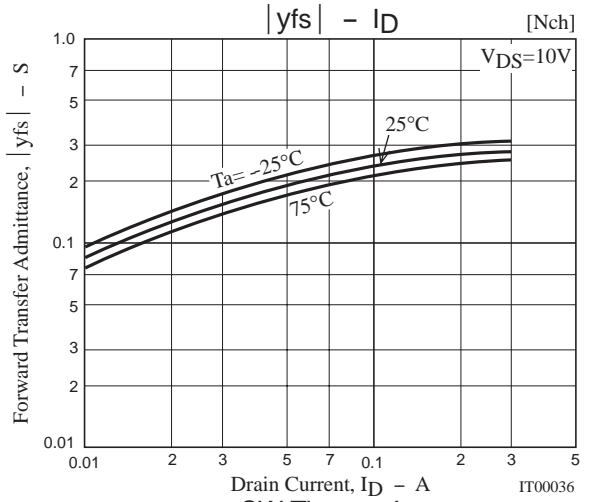
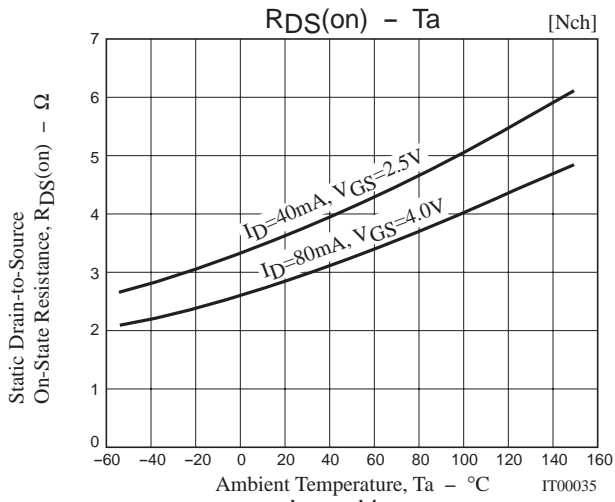
[N-channel]



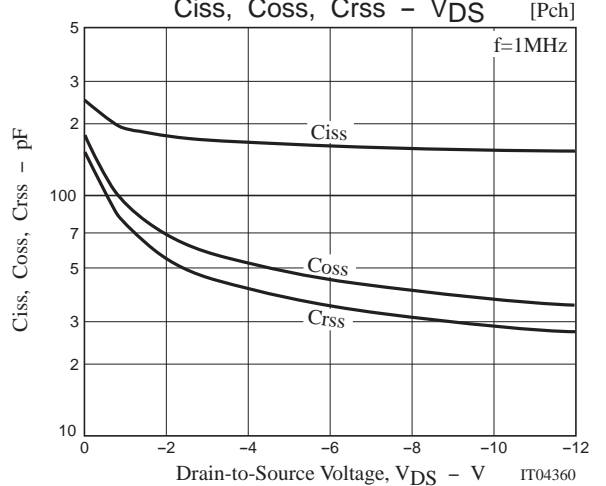
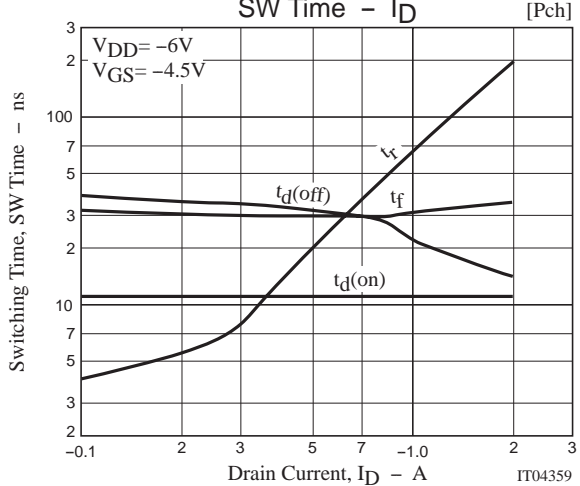
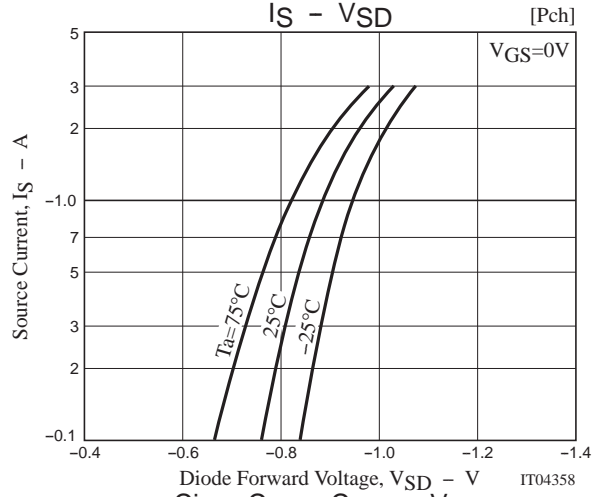
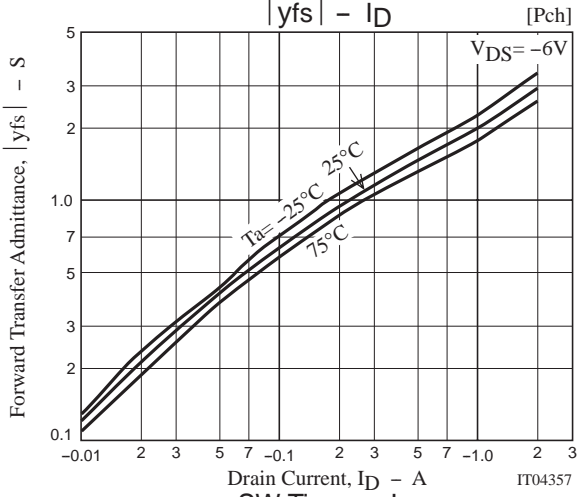
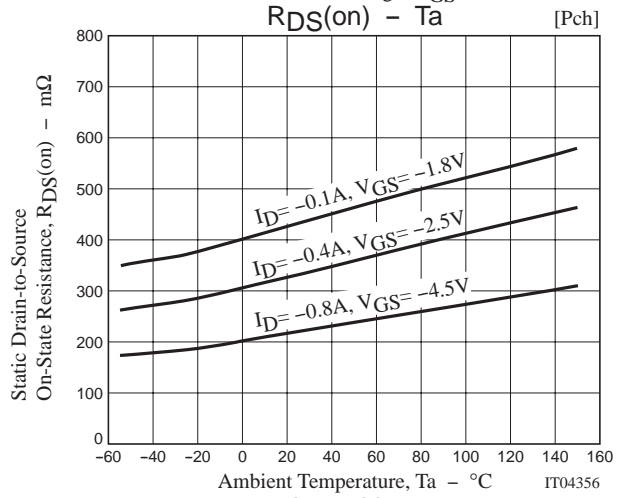
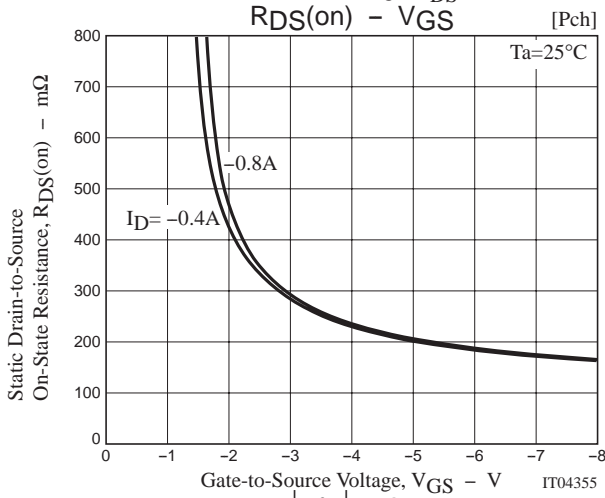
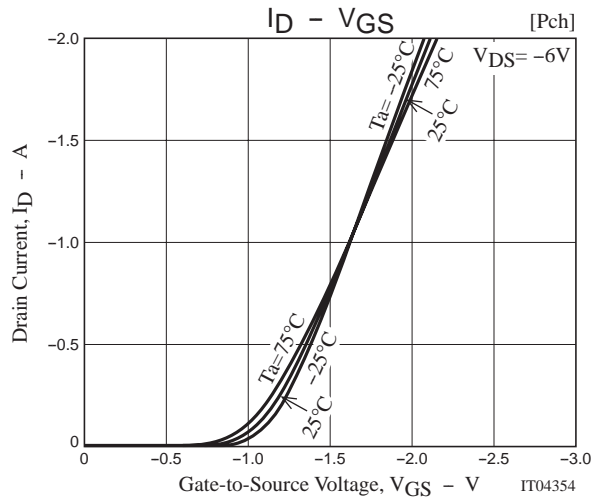
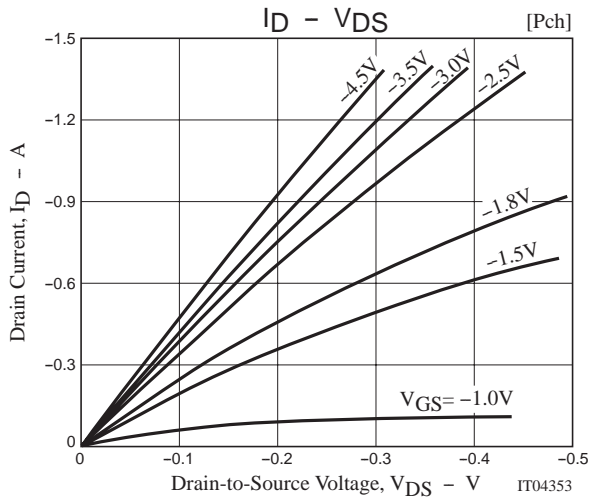
[P-channel]



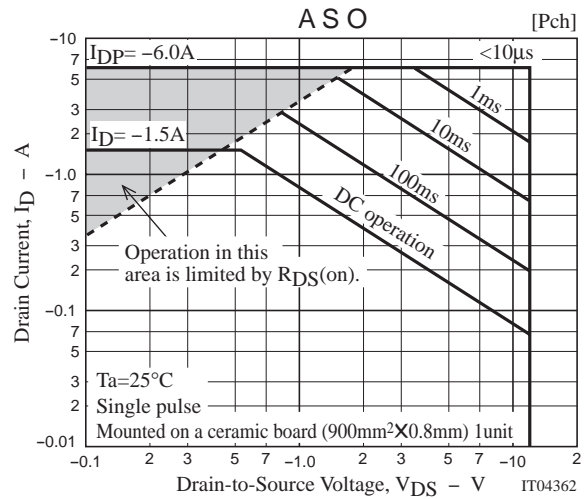
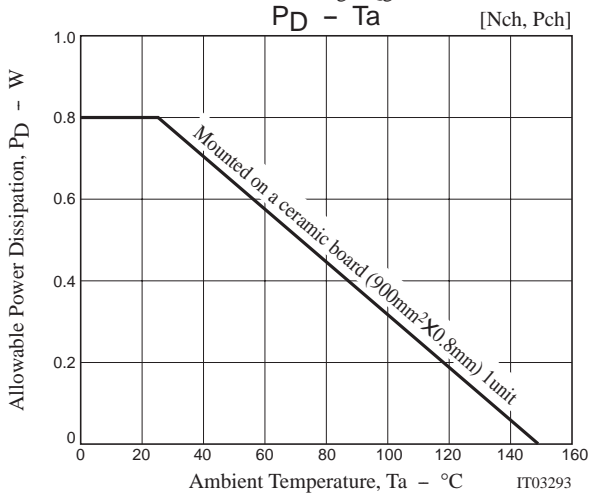
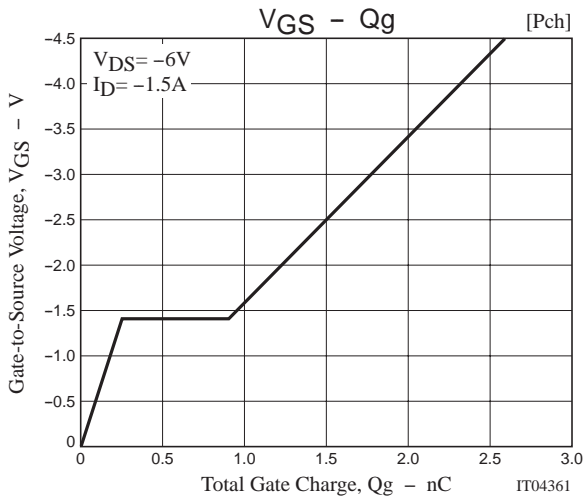
SCH2602



SCH2602



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Note on usage : Since the SCH2602 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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