



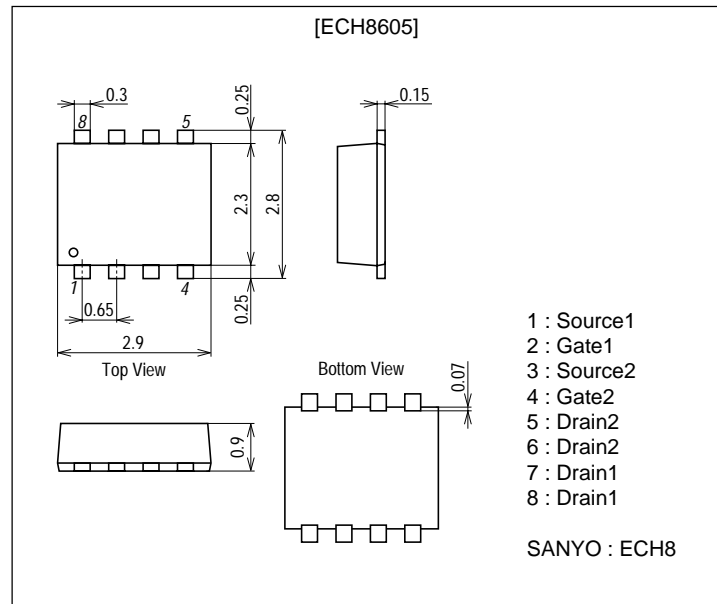
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

unit : mm
2206A



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-30	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		-4	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-40	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm \times 0.8mm) 1unit	1.3	W
Total Dissipation	P_T	Mounted on a ceramic board (900mm \times 0.8mm)	1.5	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\text{V}$, $V_{GS} = 0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16\text{V}$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-1.0		-2.4	V

Marking : JD

Continued on next page.

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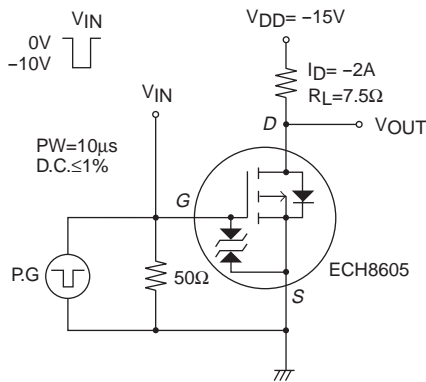
SANYO Electric Co., Ltd. Semiconductor Company

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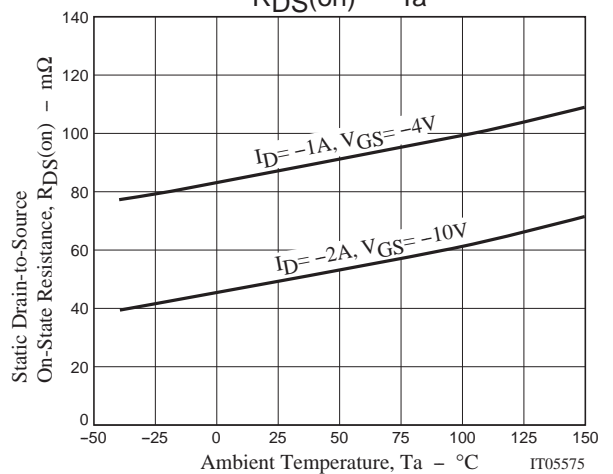
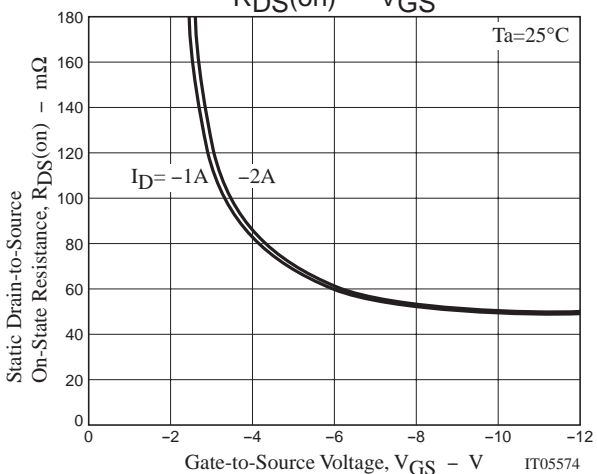
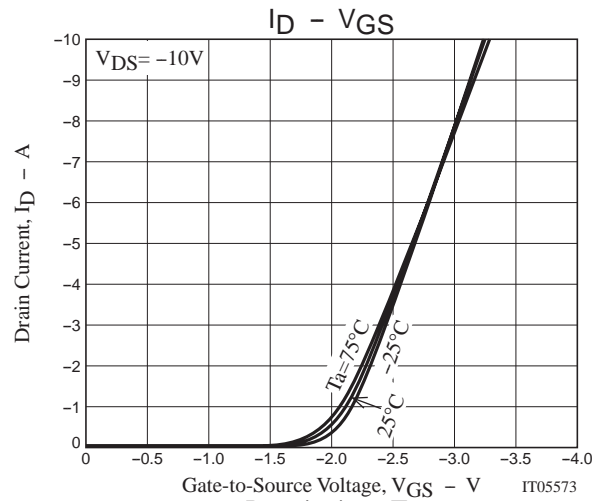
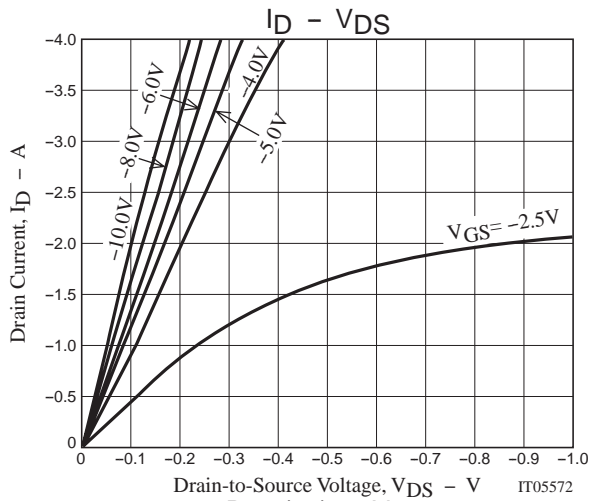
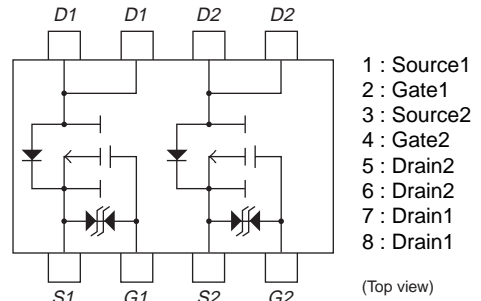
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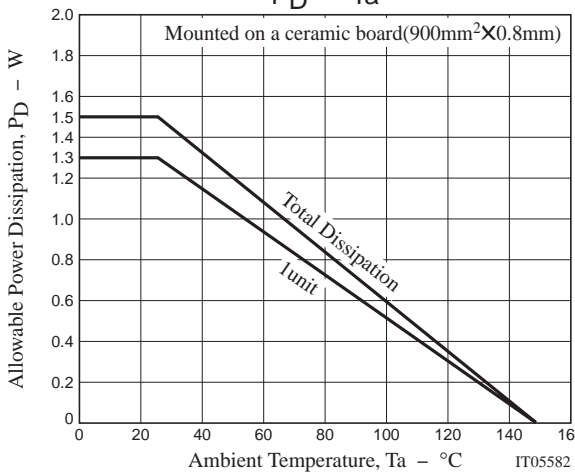
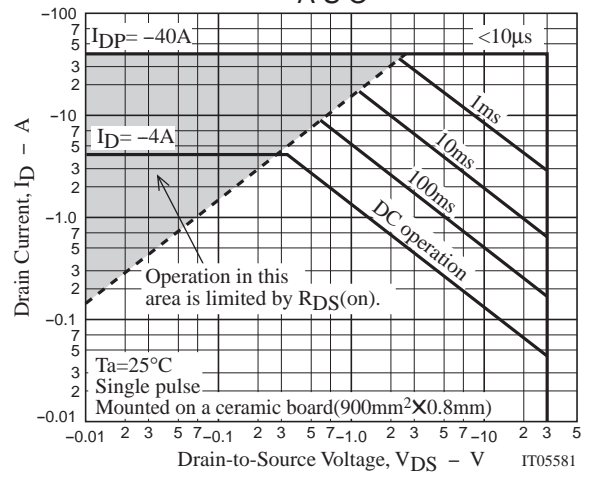
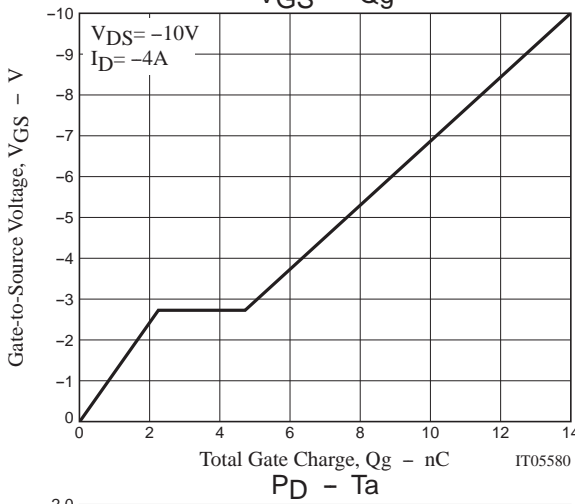
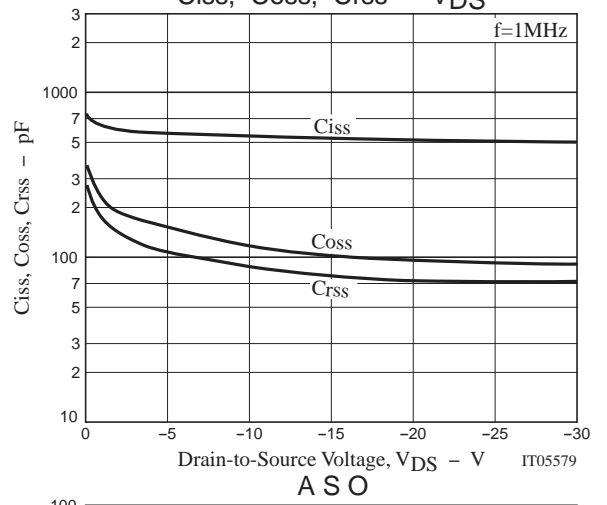
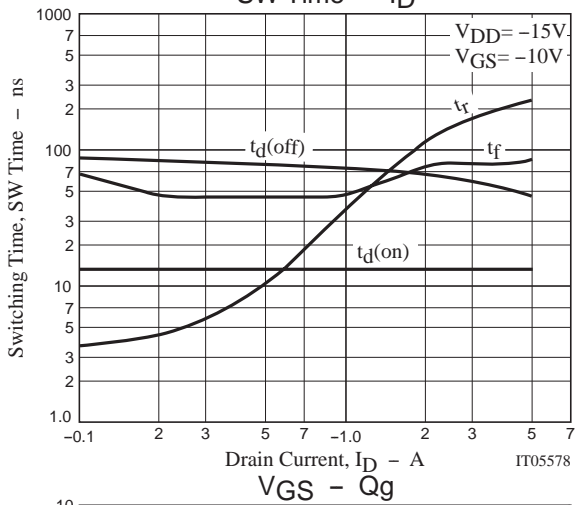
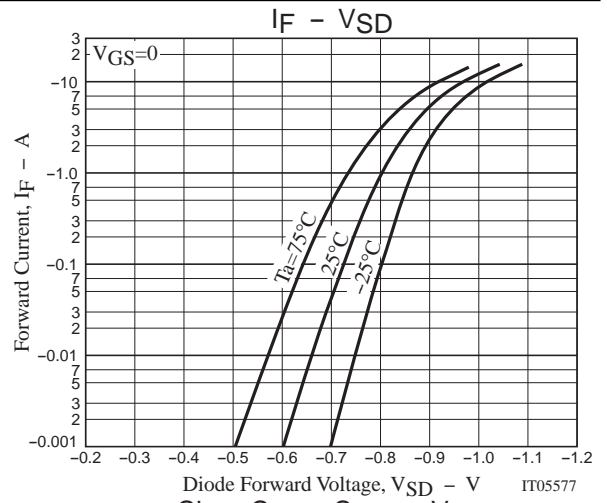
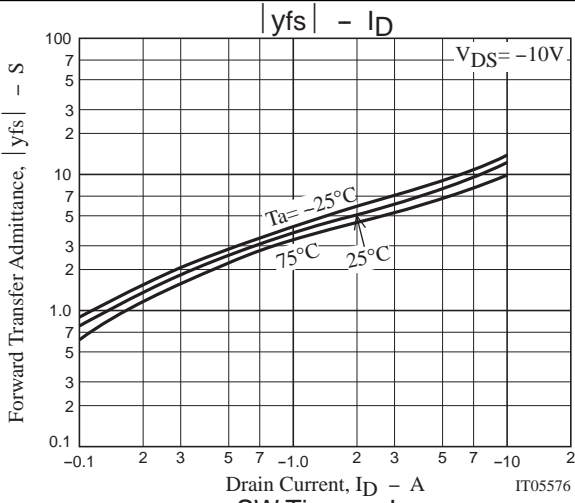
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-2A$	3.3	5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-2A, V_{GS}=-10V$		50	67	$m\Omega$
	$R_{DS(on)2}$	$I_D=-1A, V_{GS}=-4V$		87	120	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		550		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		120		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		90		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		13		ns
Rise Time	t_r	See specified Test Circuit.		110		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		65		ns
Fall Time	t_f	See specified Test Circuit.		75		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		14		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		2.2		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		2.5		nC
Diode Forward Voltage	V_{SD}	$I_S=-4A, V_{GS}=0$		-0.88	-1.2	V

Switching Time Test Circuit



Electrical Connection





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