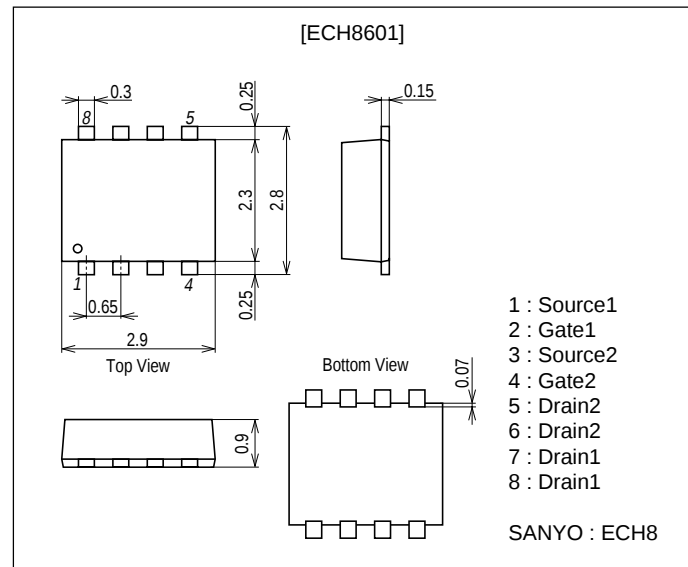


**ECH8601****LIB Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V 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_{DS}		20	V
Gate-to-Source Voltage	V_{GS}		± 12	V
Drain Current (DC)	I_D		7	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 ² X0.8mm)1unit	1.4	W
Total Dissipation	P_T	Mounted on a ceramic board (900mm ² X0.8mm)	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	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}$, $V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{DS}=0$			± 10	μA

Marking : KC

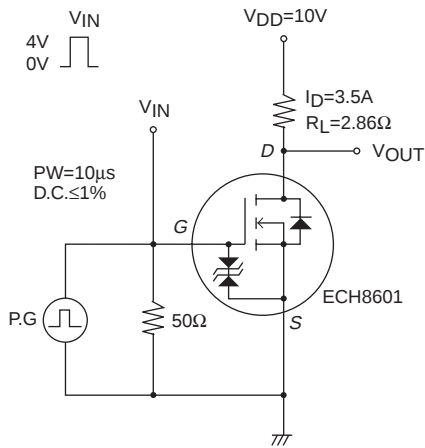
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- SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications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

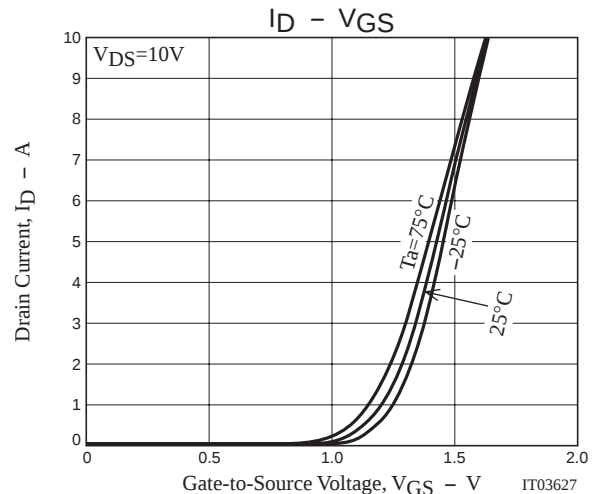
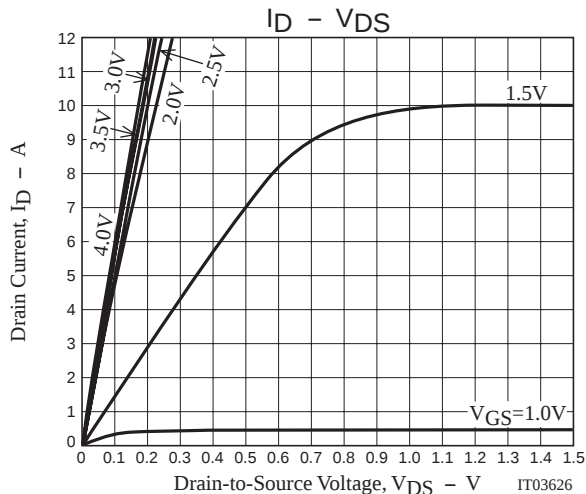
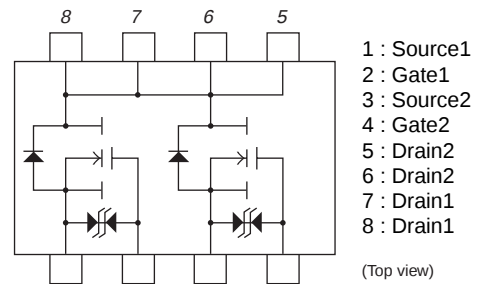
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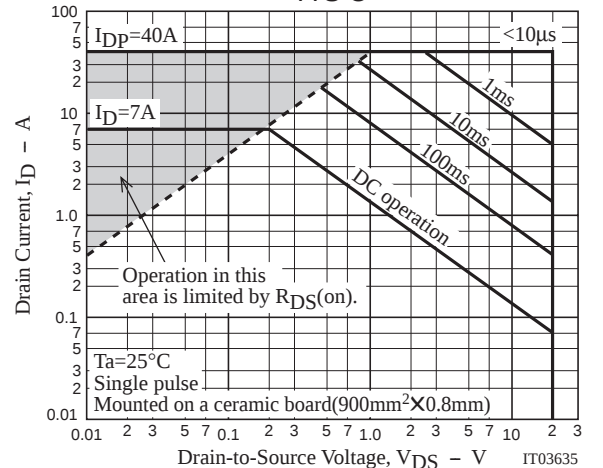
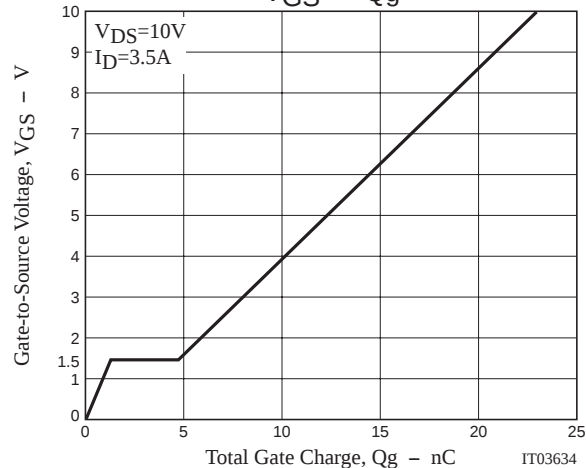
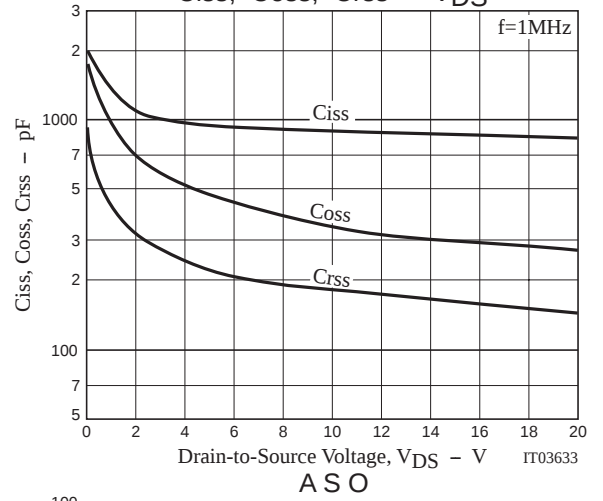
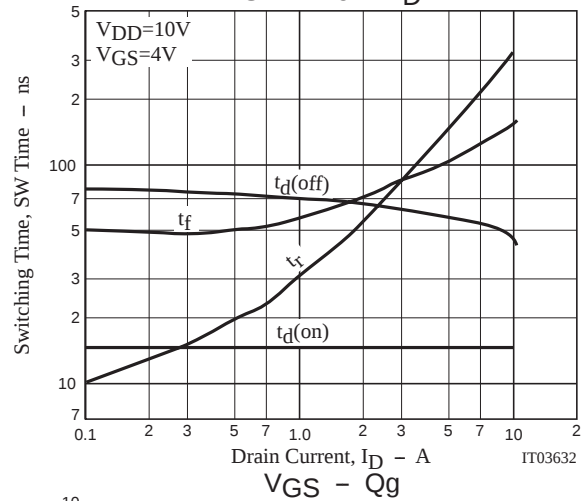
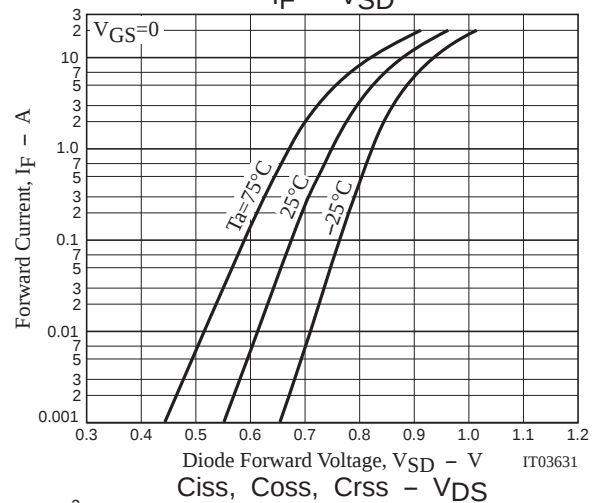
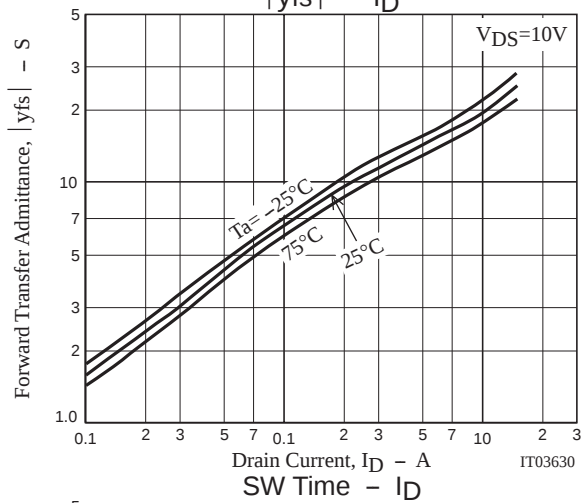
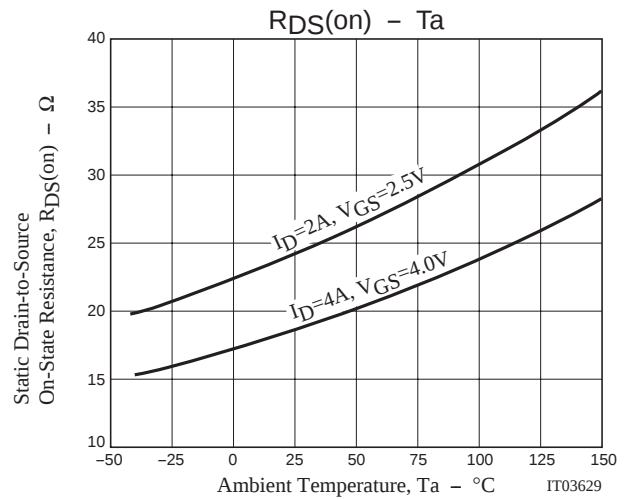
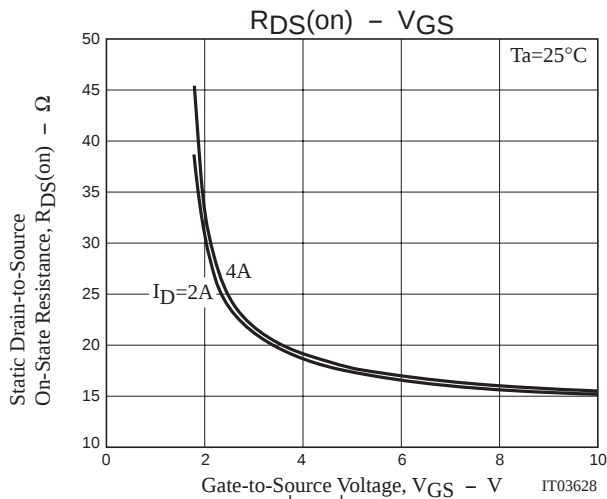
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	0.5		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=3.5A$	7.7	11		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=4A, V_{GS}=4.5V$		17	23	$m\Omega$
	$R_{DS(on)2}$	$I_D=4A, V_{GS}=4.0V$		18	24	$m\Omega$
	$R_{DS(on)3}$	$I_D=4A, V_{GS}=3.1V$		20	30	$m\Omega$
	$R_{DS(on)4}$	$I_D=2A, V_{GS}=2.5V$		24	35	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		910		pF
Output Capacitance	C_{oss}	$V_{DS}=10V, f=1MHz$		350		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, f=1MHz$		170		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		15		ns
Rise Time	t_r	See specified Test Circuit		100		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		61		ns
Fall Time	t_f	See specified Test Circuit		90		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=7A$		23		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=7A$		1.3		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=7A$		3.4		nC
Diode Forward Voltage	V_{SD}	$I_S=7A, V_{GS}=0$		0.83	1.2	V

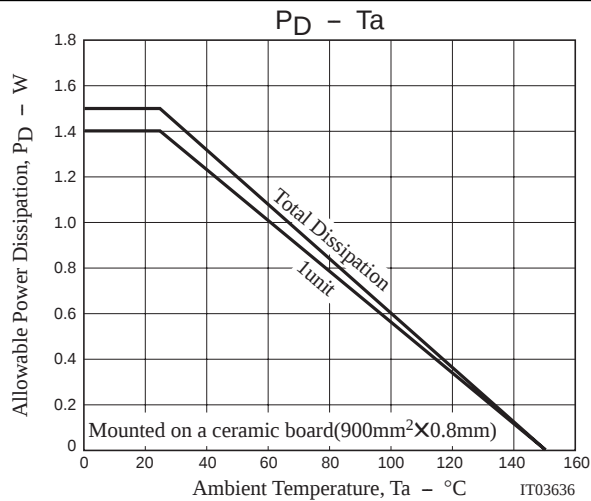
Switching Time Test Circuit



Electrical Connection







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