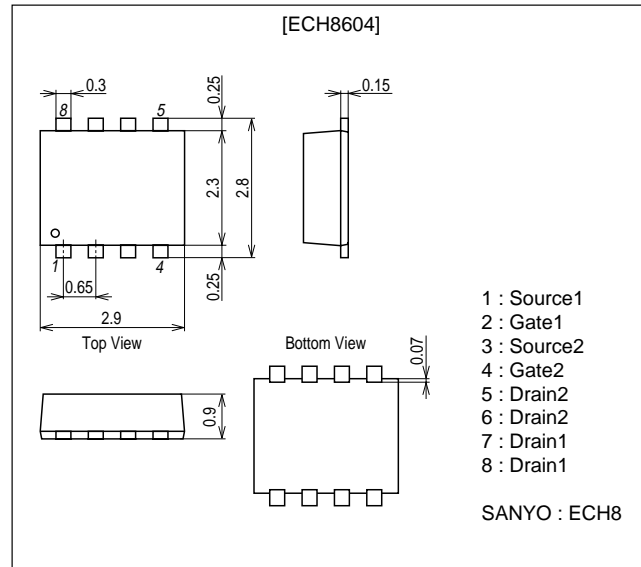


**ECH8604****Load Switching Applications****Features**

- 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_{DSS}		20	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		6	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	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0$	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
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	0.5		1.3	V

Marking : KE

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.

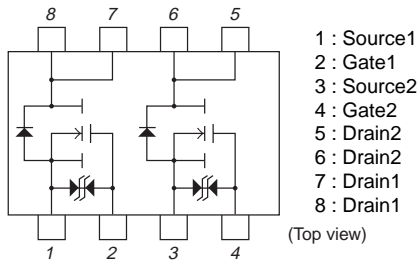
■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained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

ECH8604

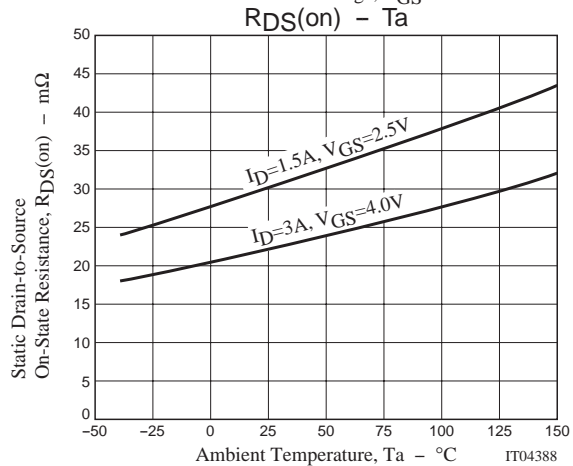
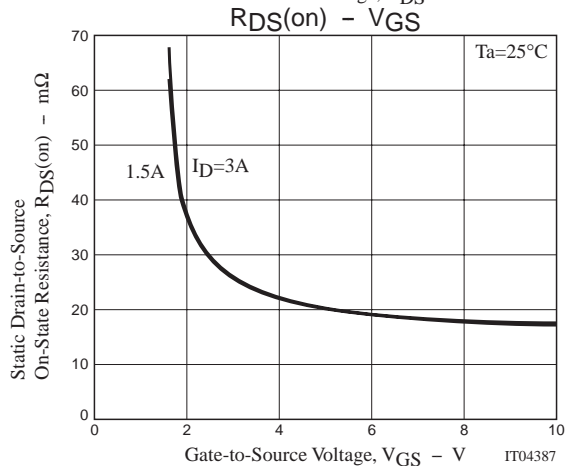
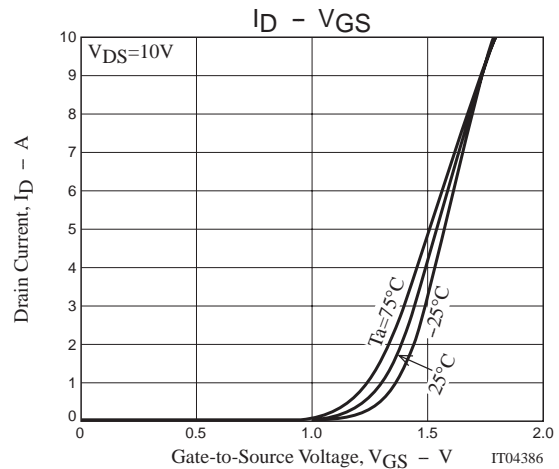
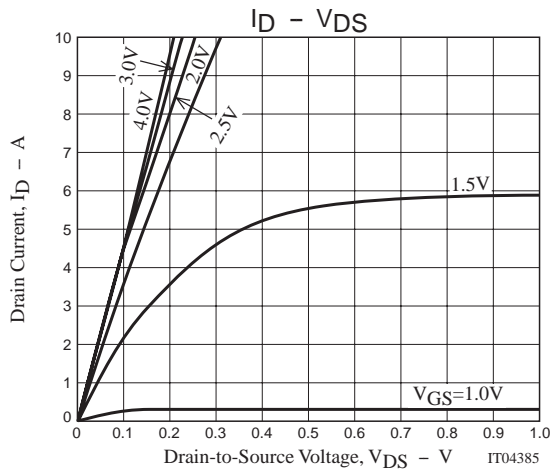
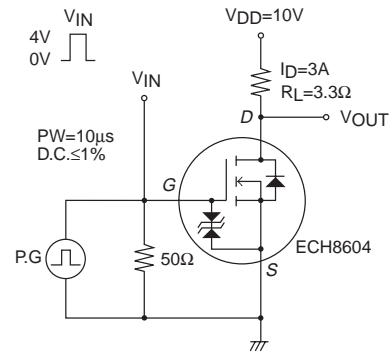
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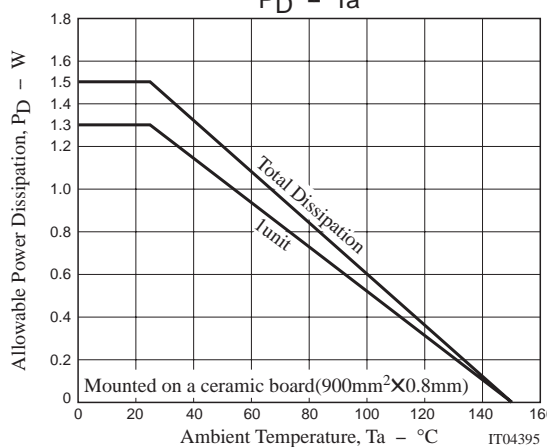
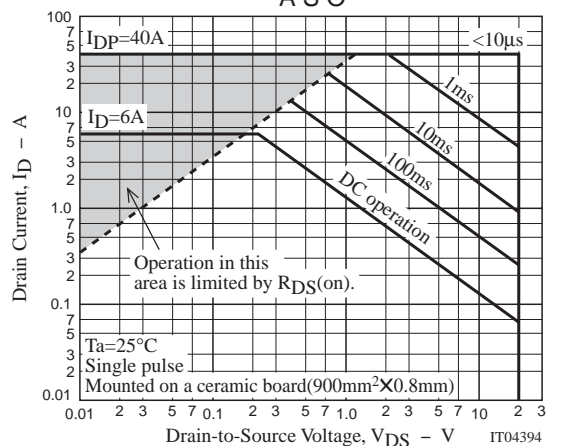
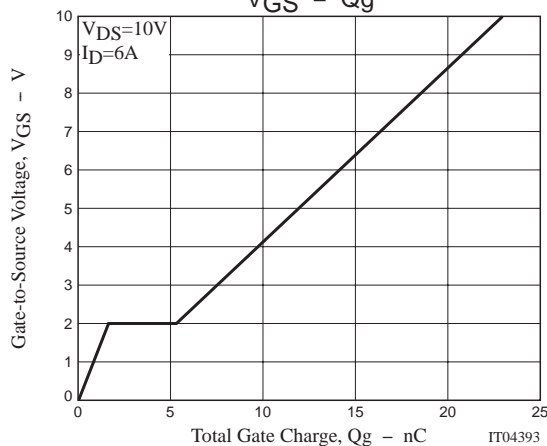
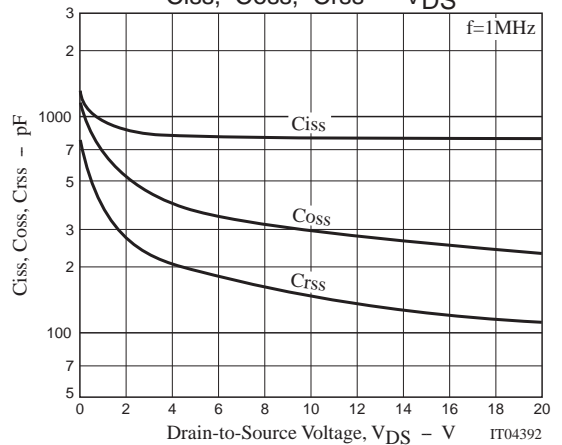
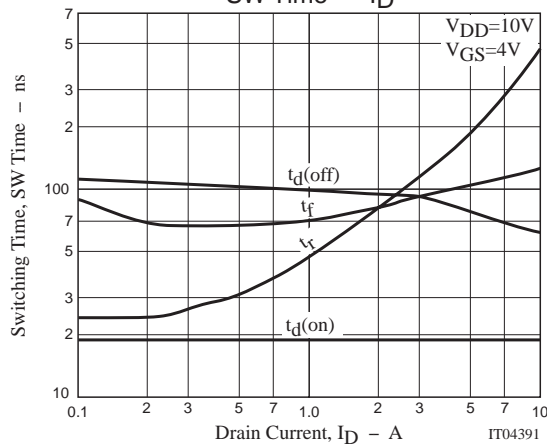
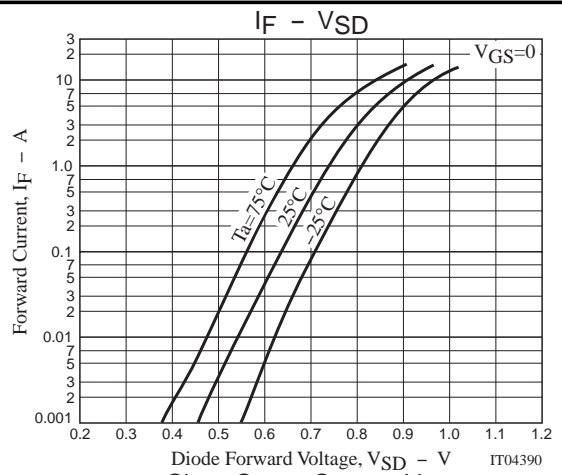
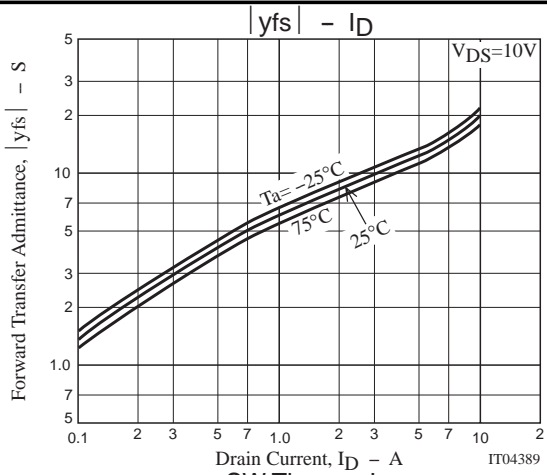
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=3A$	7	10		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=3A, V_{GS}=4V$		22	30	$m\Omega$
	$R_{DS(on)2}$	$I_D=1.5A, V_{GS}=2.5V$		30	44	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		700		pF
Output Capacitance	C_{oss}	$V_{DS}=10V, f=1MHz$		300		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, f=1MHz$		150		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		19		ns
Rise Time	t_r	See specified Test Circuit.		134		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		90		ns
Fall Time	t_f	See specified Test Circuit.		94		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=6A$		23		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=6A$		1.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=6A$		3.6		nC
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0$		0.84	1.2	V

Electrical Connection



Switching Time Test Circuit





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