

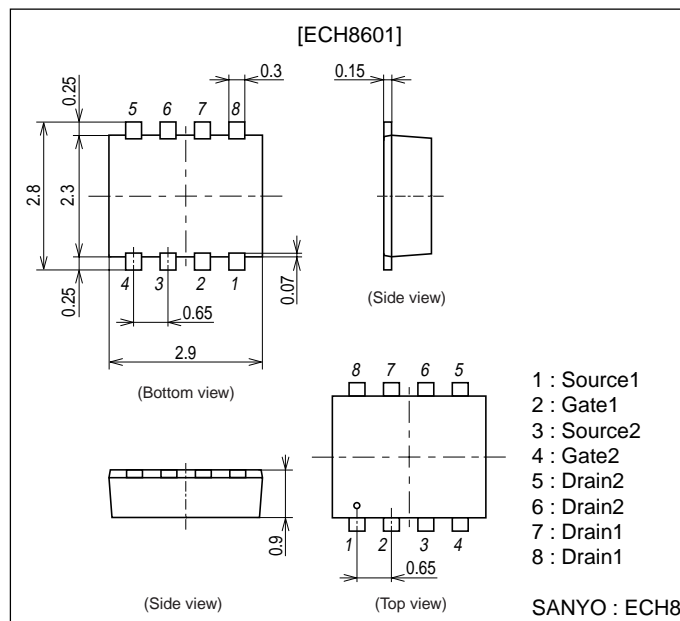
**LIB Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Package Dimensions

unit : mm

2206

**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} | | ± 10 | 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

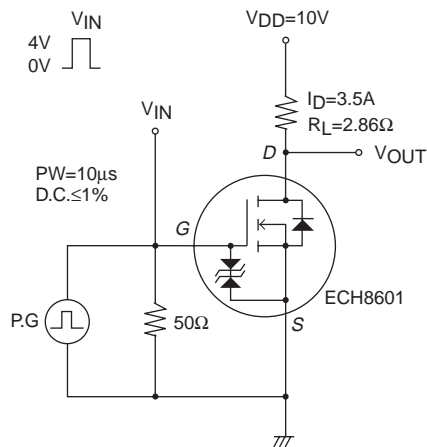
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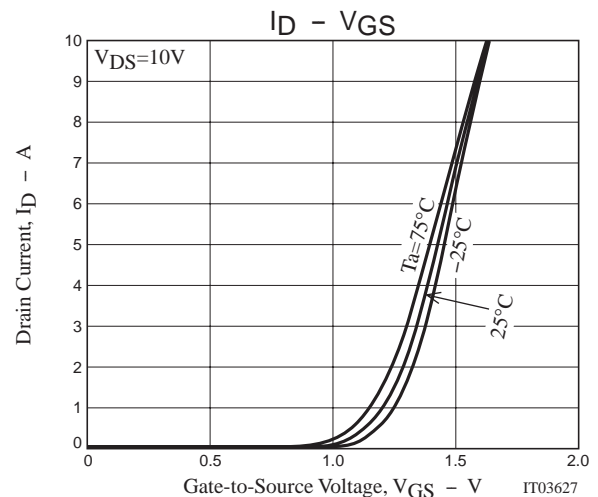
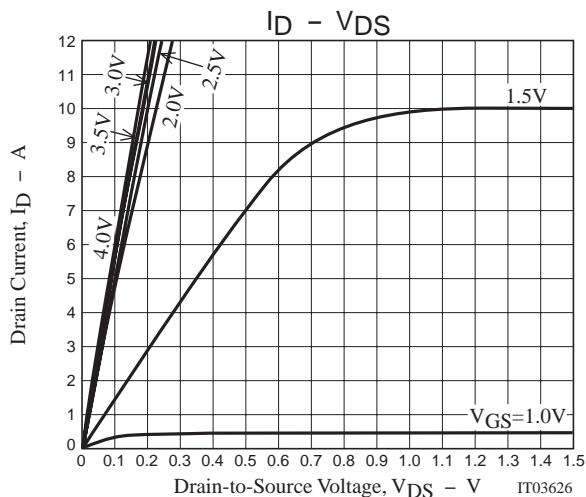
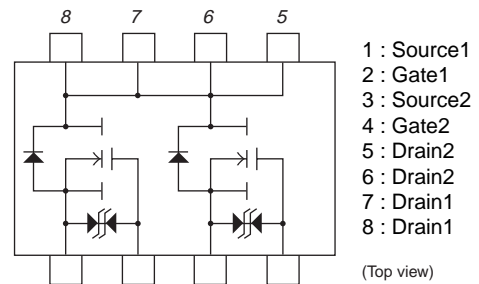
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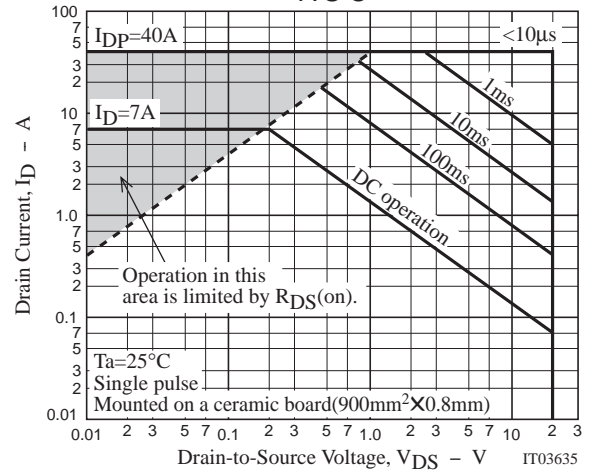
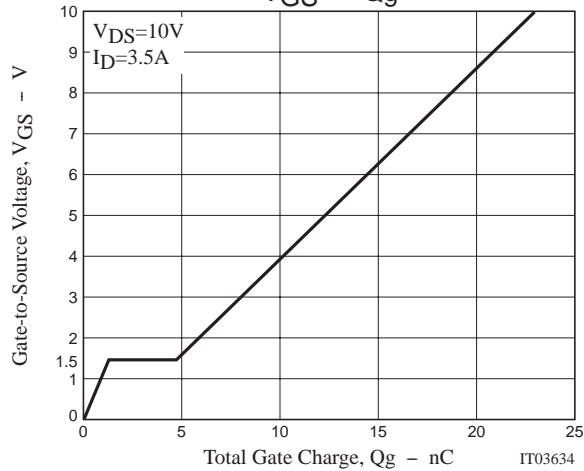
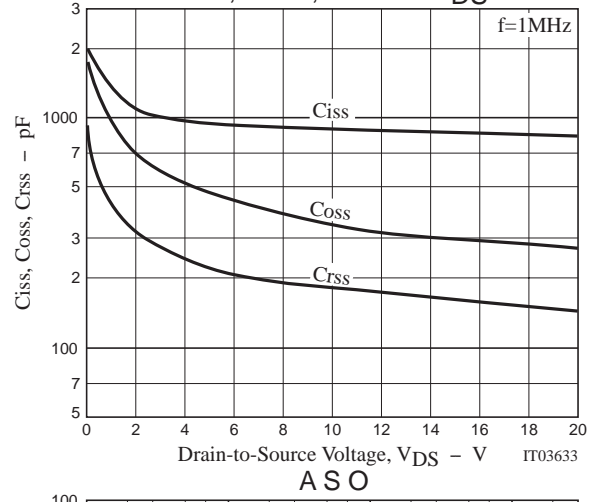
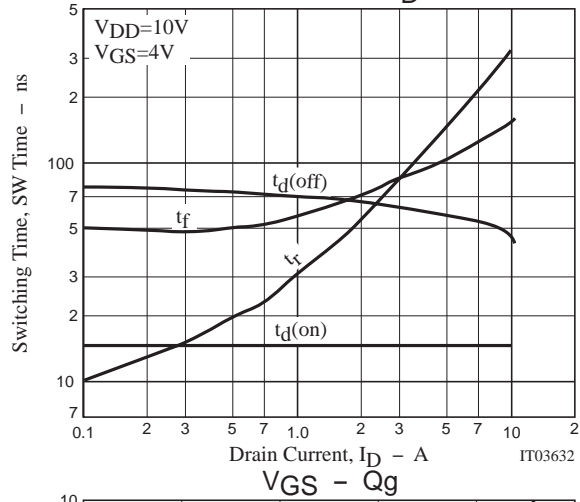
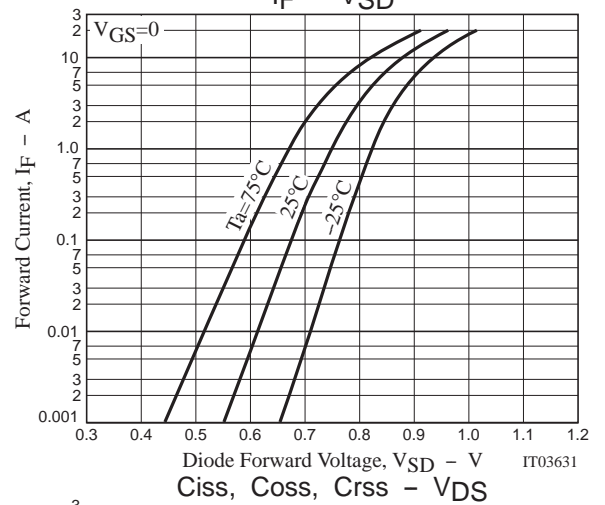
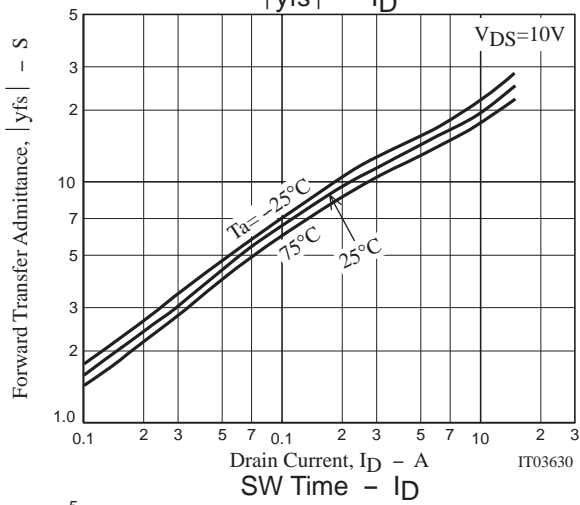
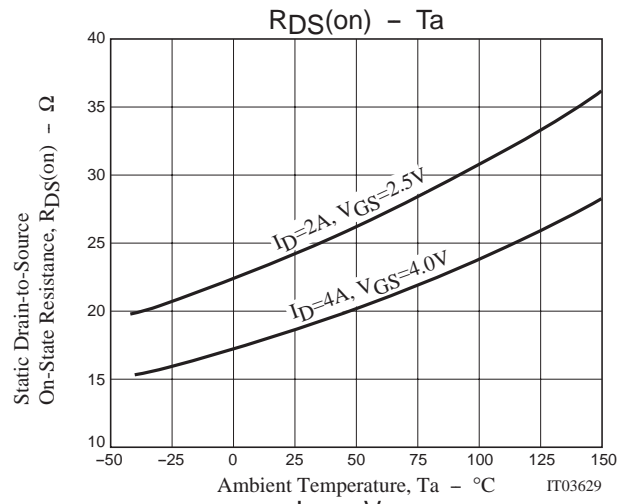
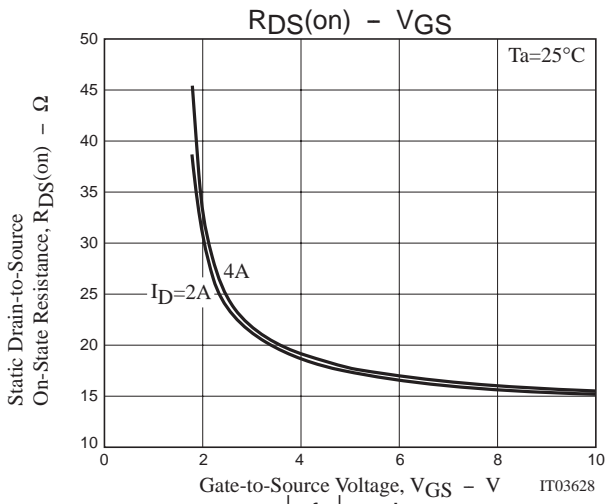
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|------------------------------------|---------|------|-----|-----------|
| | | | min | typ | max | |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$ | 0.5 | | 1.3 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10V, I_D=3.5A$ | 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 | $m\Omega$ |
| | $R_{DS(on)3}$ | $I_D=2A, V_{GS}=2.5V$ | | 24 | 35 | $m\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS}=10V, f=1MHz$ | | 800 | | 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 | $V_{DS}=10V, V_{GS}=10V, I_D=3.5A$ | | 23 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=10V, V_{GS}=10V, I_D=3.5A$ | | 1.3 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=10V, V_{GS}=10V, I_D=3.5A$ | | 3.4 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=7A, V_{GS}=0$ | | 0.83 | 1.2 | V |

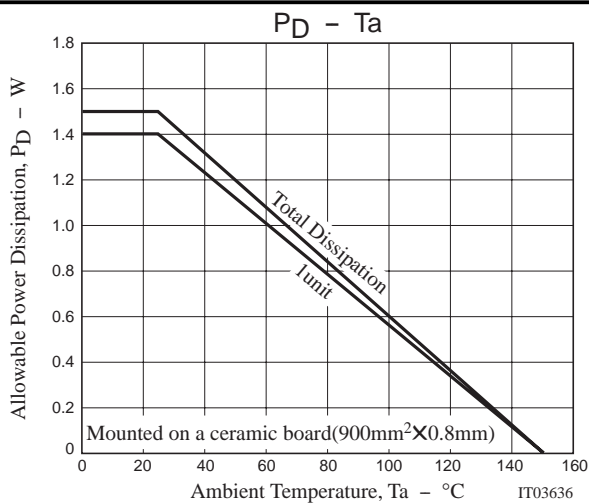
Switching Time Test Circuit



Electrical Connection







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