



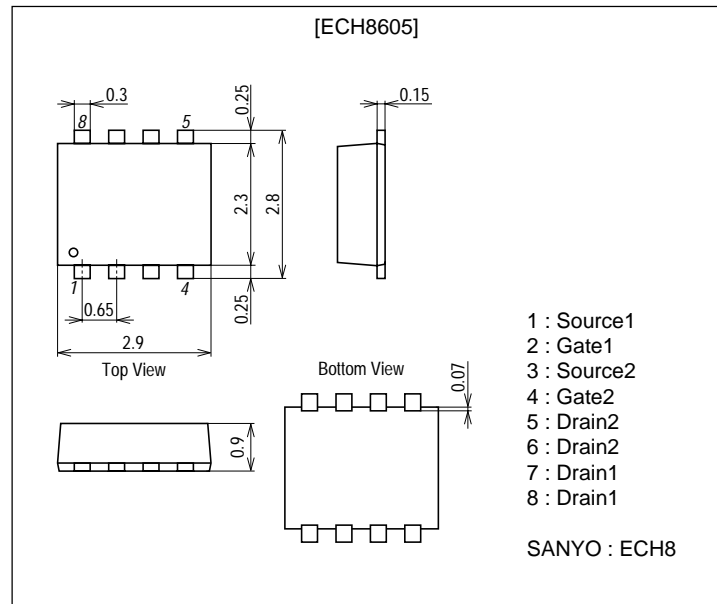
Ultrahigh-Speed Switching Applications

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

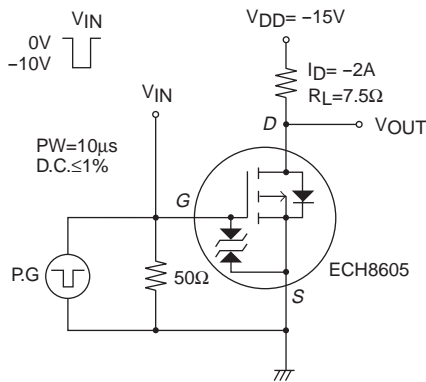
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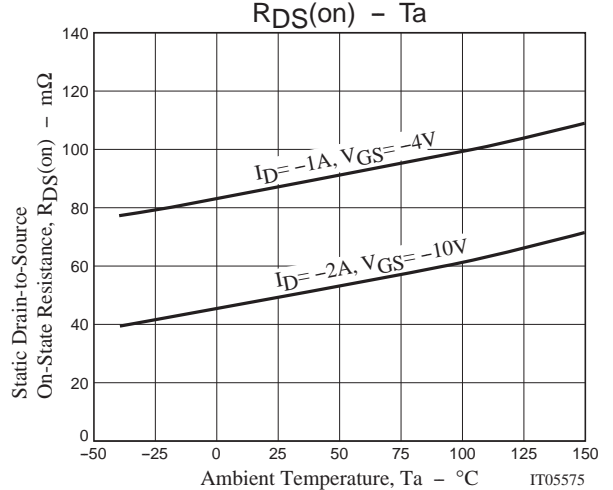
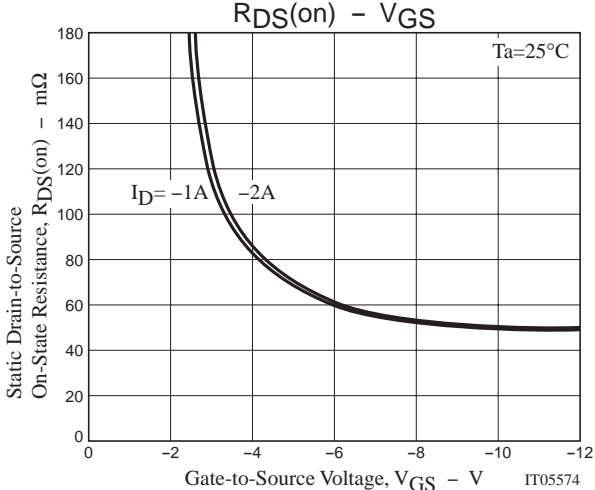
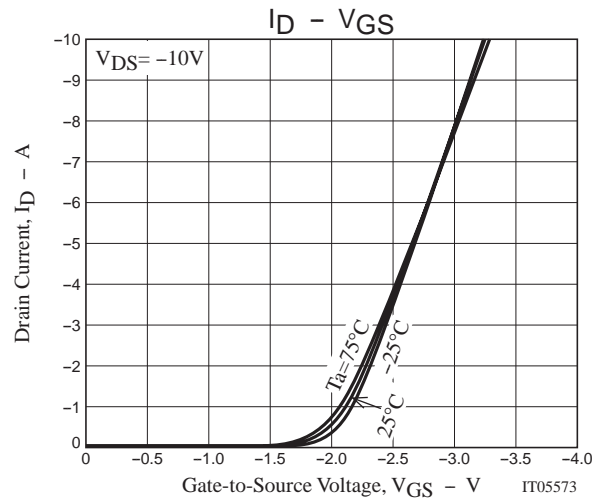
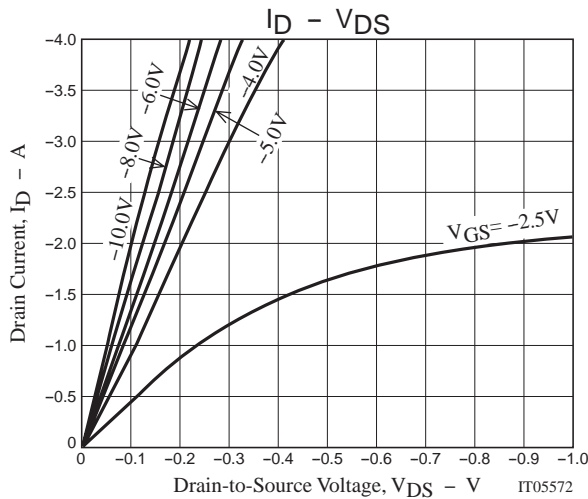
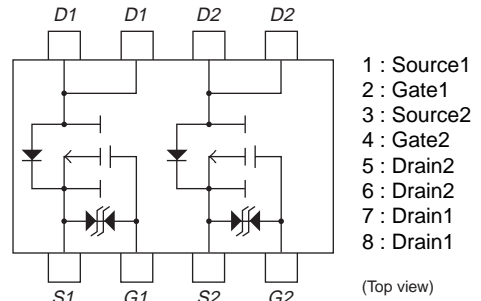
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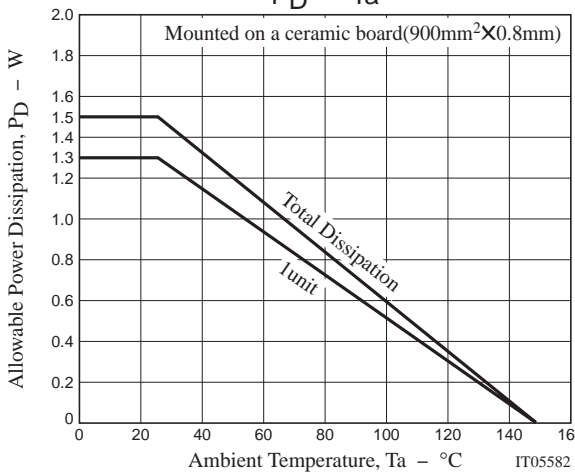
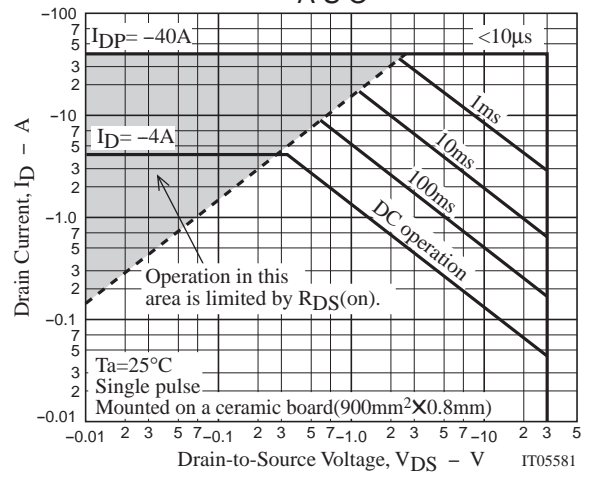
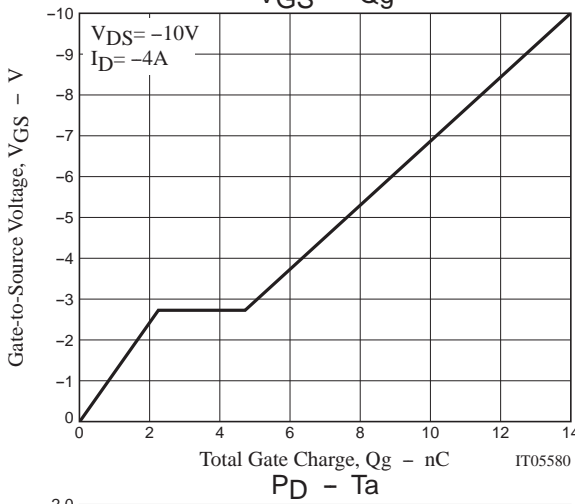
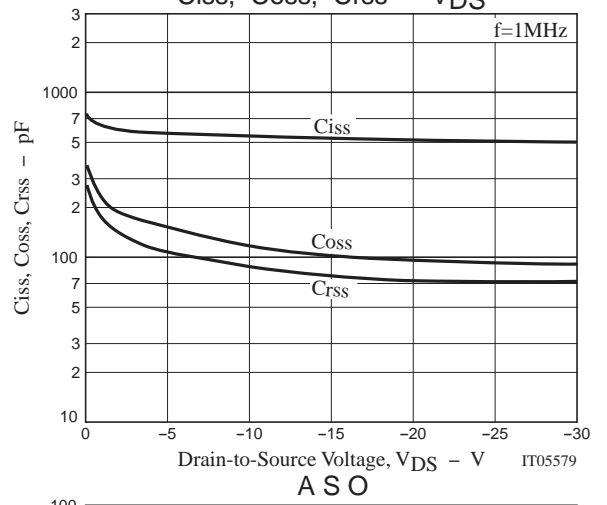
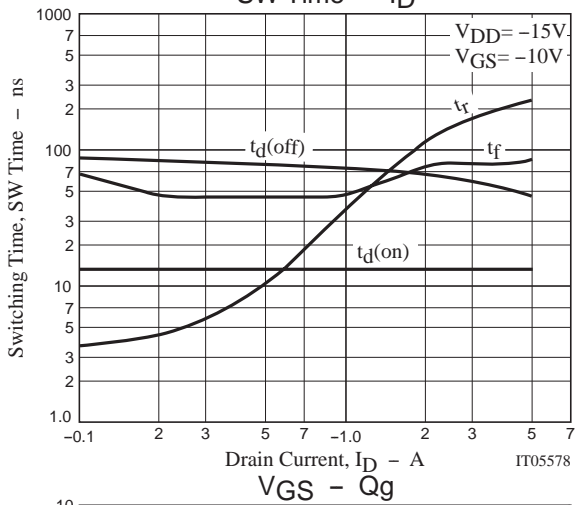
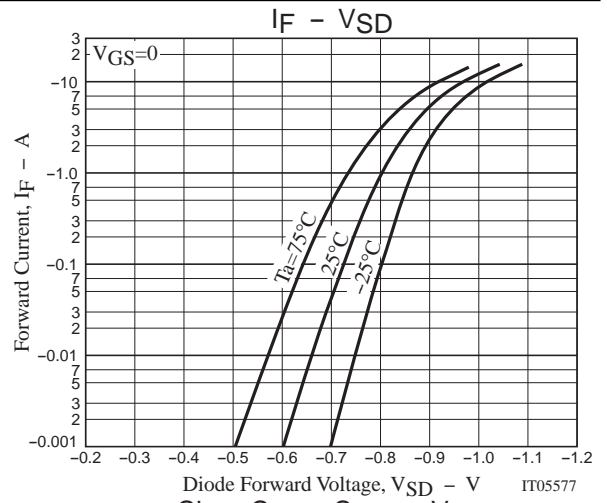
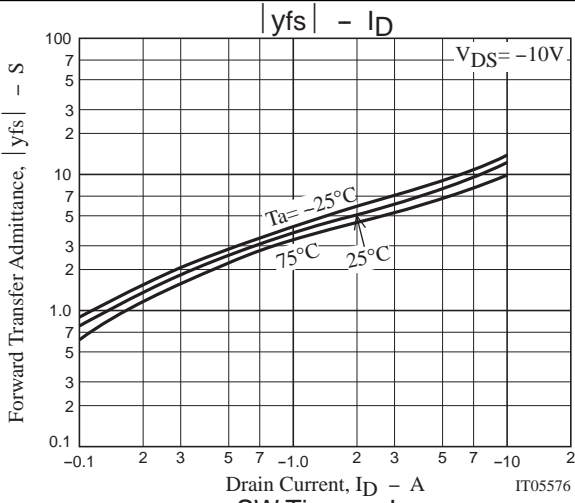
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|-------------------------------------|---------|-------|------|-----------|
| | | | min | typ | max | |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=-10V, I_D=-2A$ | 3.3 | 5 | | S |
| Static Drain-to-Source On-State 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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