

Ordering number : ENN7608

N-Channel Silicon MOSFET

MCH3444

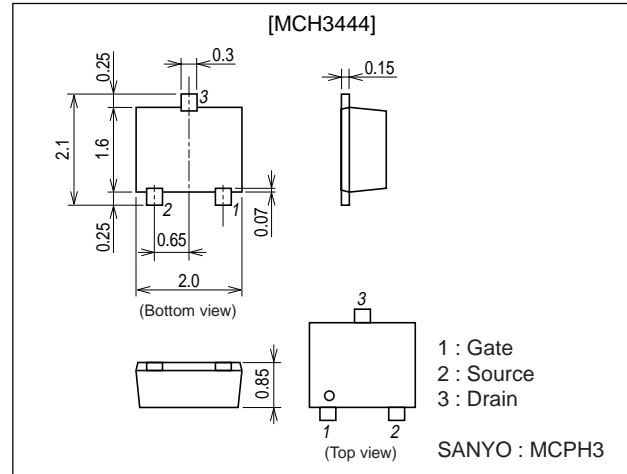
Ultrahigh-Speed Switching Applications

Features

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

Package Dimensions

unit : mm
2167A



Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|--|-------------|------------------|
| Drain-to-Source Voltage | V_{DS} | | 30 | V |
| Gate-to-Source Voltage | V_{GS} | | ± 12 | V |
| Drain Current (DC) | I_D | | 2.5 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$ | 10 | A |
| Allowable Power Dissipation | P_D | Mounted on a ceramic board (900mm \times 90.8mm) | 0.9 | 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} | $V_{GS}=\pm 8\text{V}$, $V_{DS}=0$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10\text{V}$, $I_D=1\text{mA}$ | 0.4 | | 1.3 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10\text{V}$, $I_D=1.3\text{A}$ | 1.9 | 3.2 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=1.3\text{A}$, $V_{GS}=4\text{V}$ | | 82 | 108 | $\text{m}\Omega$ |
| | $R_{DS(on)2}$ | $I_D=0.7\text{A}$, $V_{GS}=2.5\text{V}$ | | 105 | 150 | $\text{m}\Omega$ |

Marking : ZV

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TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

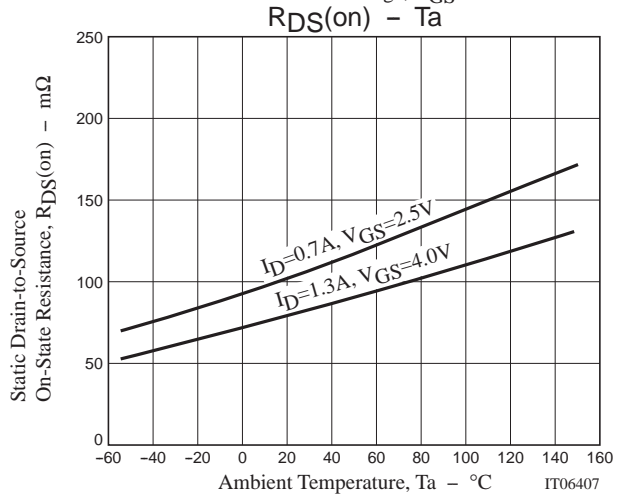
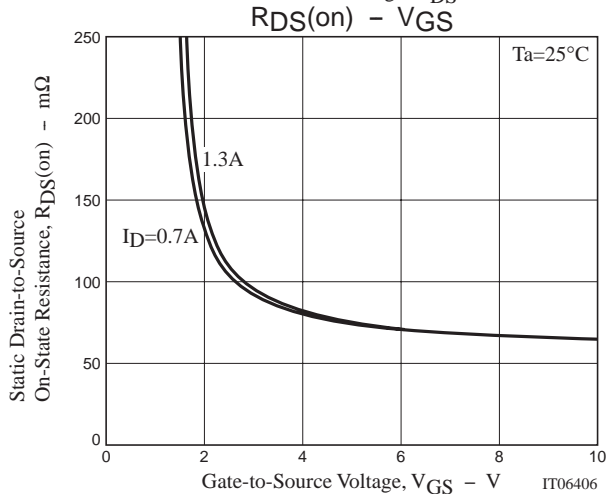
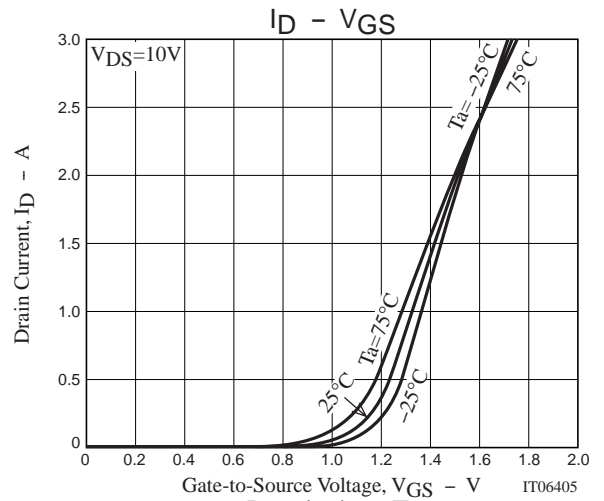
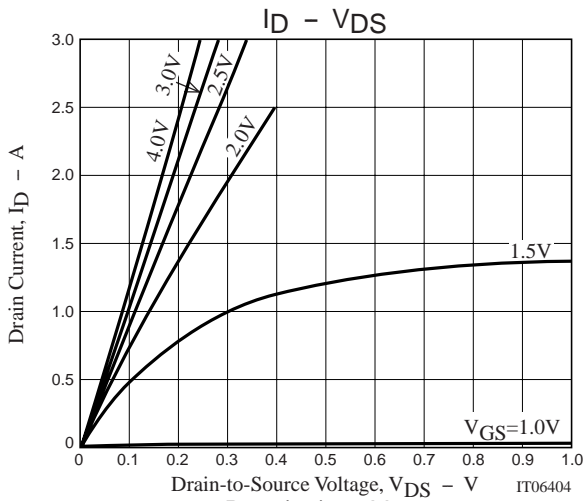
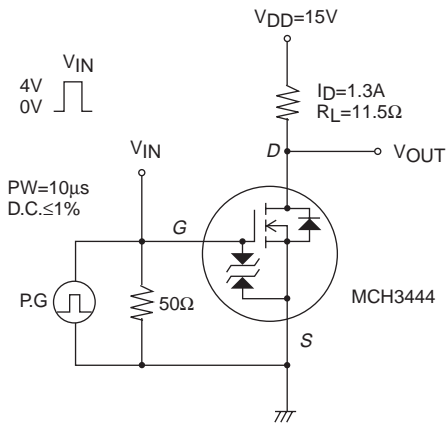
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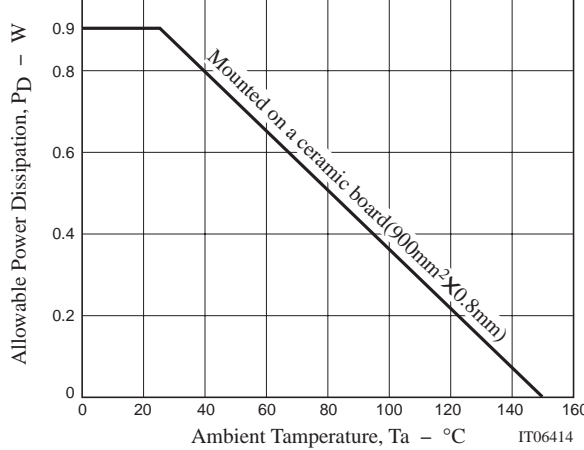
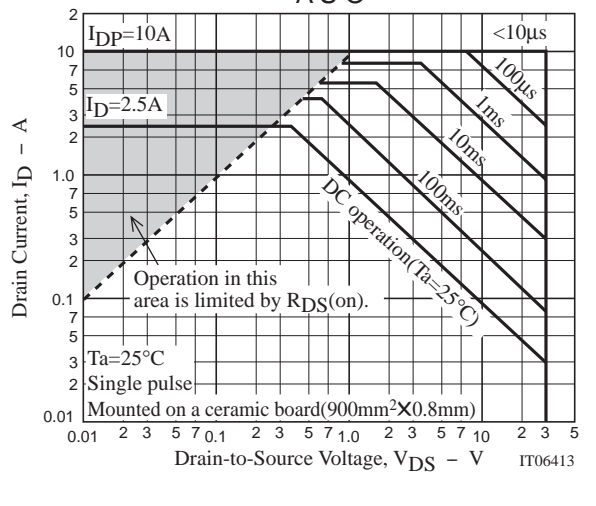
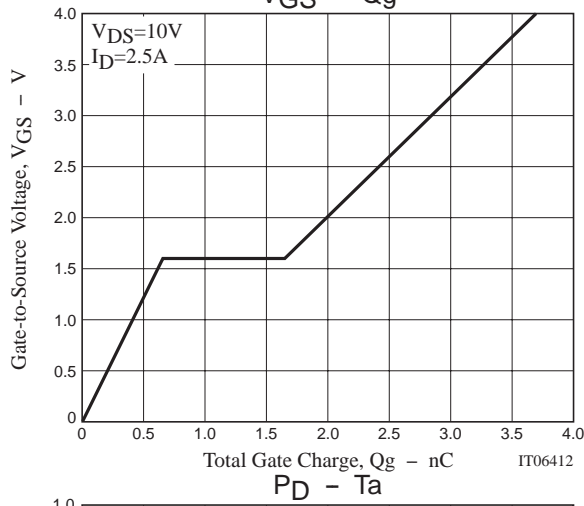
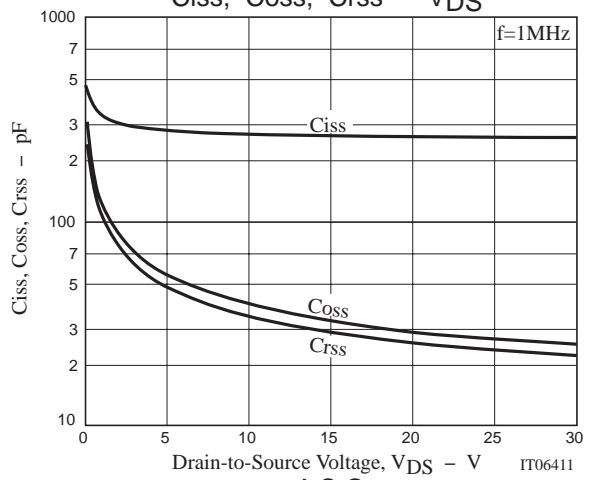
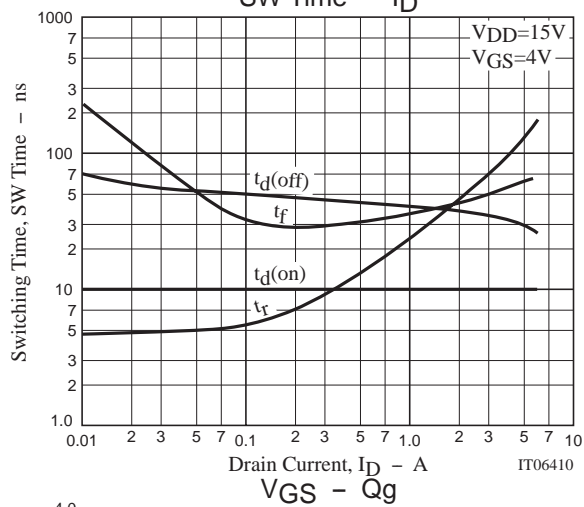
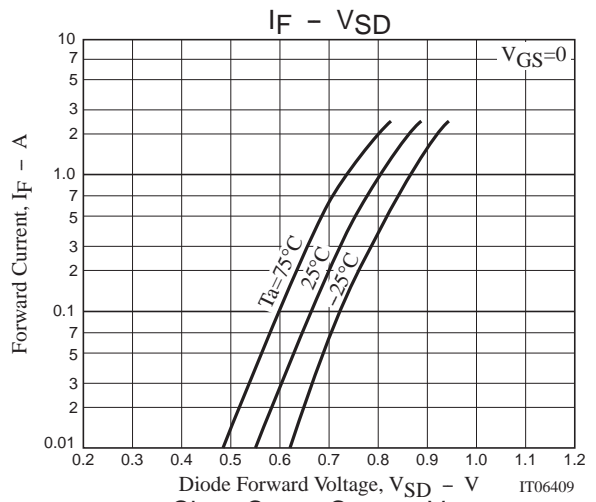
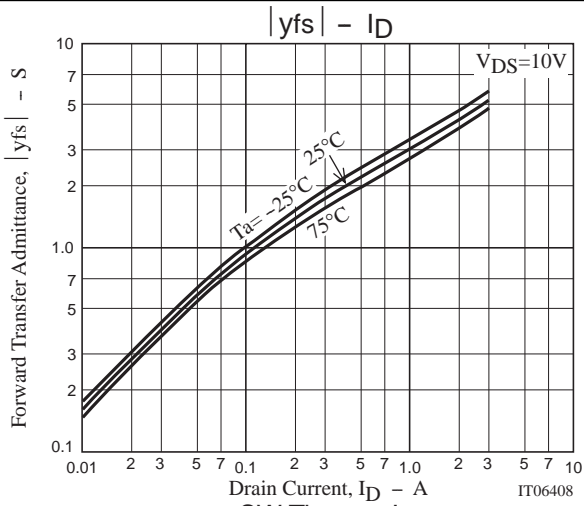
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|---------------------|---|---------|------|-----|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | V _{DS} =10V, f=1MHz | | 270 | | pF |
| Output Capacitance | Coss | V _{DS} =10V, f=1MHz | | 40 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =10V, f=1MHz | | 35 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 10 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 40 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit. | | 39 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 38 | | ns |
| Total Gate Charge | Q _g | V _{DS} =10V, V _{GS} =4V, I _D =2.5A | | 3.7 | | nC |
| Gate-to-Source Charge | Q _{gs} | V _{DS} =10V, V _{GS} =4V, I _D =2.5A | | 0.65 | | nC |
| Gate-to-Drain "Miller" Charge | Q _{gd} | V _{DS} =10V, V _{GS} =4V, I _D =2.5A | | 1.0 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =2.5A, V _{GS} =0 | | 0.9 | 1.2 | V |

Switching Time Test Circuit





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