



MCH6308

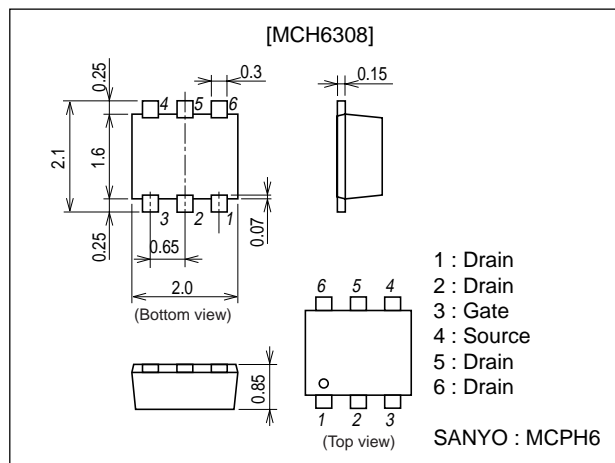
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V drive.

Package Dimensions

unit : mm
2193A



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|---|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -12 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±8 | V |
| Drain Current (DC) | I _D | | -3.5 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -14 | A |
| Allowable Power Dissipation | P _D | Mounted on a ceramic board (1200mm ² X0.8mm) | 1.5 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------------------|---|---------|-----|------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | V(BR)DSS | I _D =-1mA, V _{GS} =0 | -12 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-12V, V _{GS} =0 | | | -10 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±6.4V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =-6V, I _D =-1mA | -0.3 | | -1.0 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-6V, I _D =-1.7A | 3.3 | 4.7 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =-1.7A, V _{GS} =-4.5V | | 75 | 98 | mΩ |
| | R _{DS(on)2} | I _D =-0.8A, V _{GS} =-2.5V | | 110 | 155 | mΩ |
| | R _{DS(on)3} | I _D =-0.4A, V _{GS} =-1.8V | | 150 | 225 | mΩ |

Marking : JH

Continued on next page.

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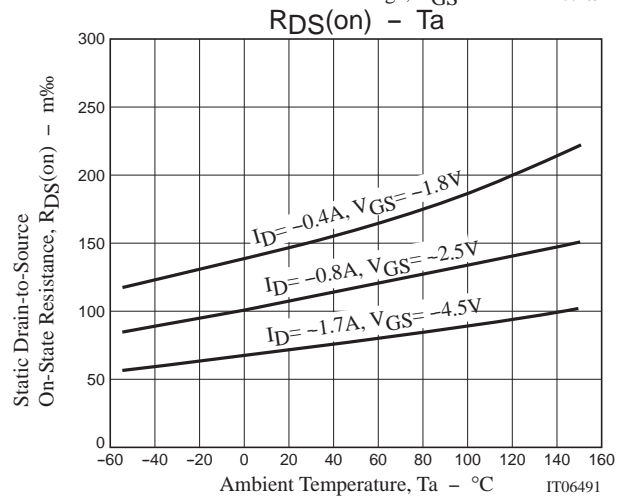
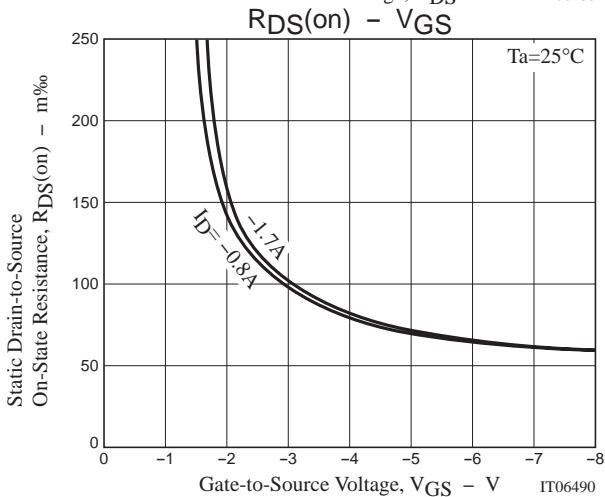
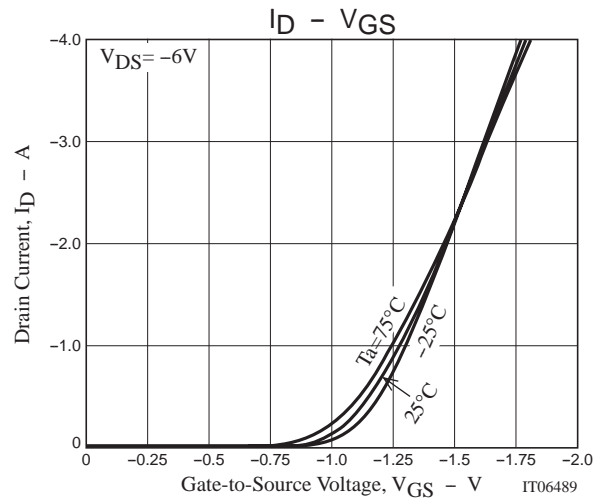
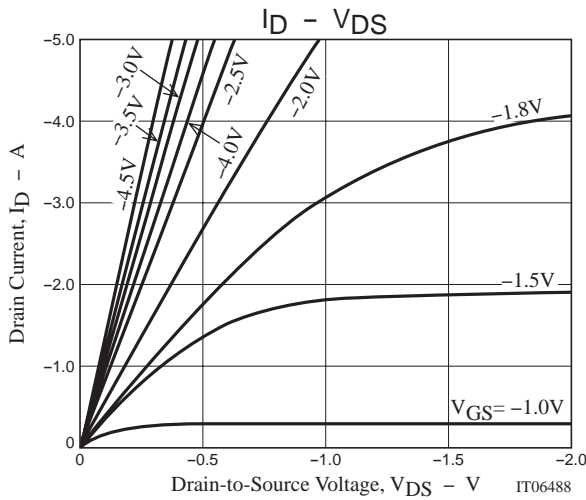
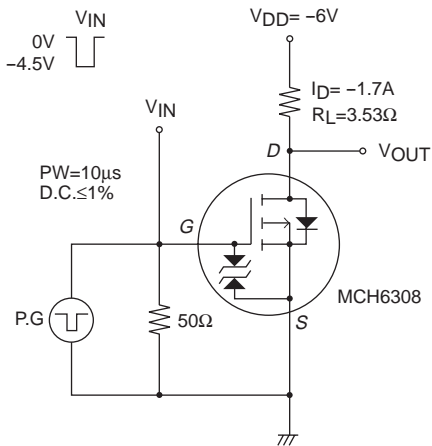
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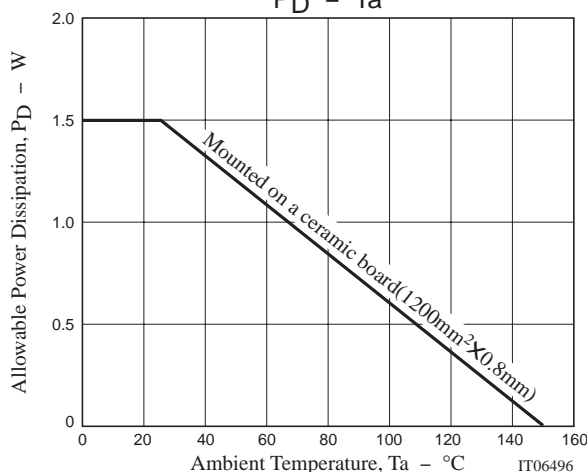
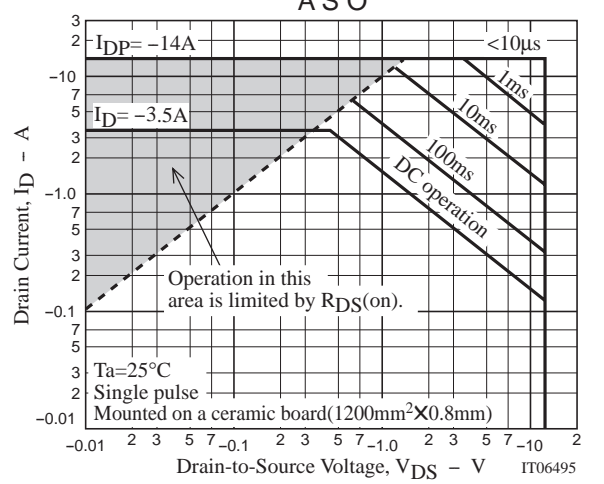
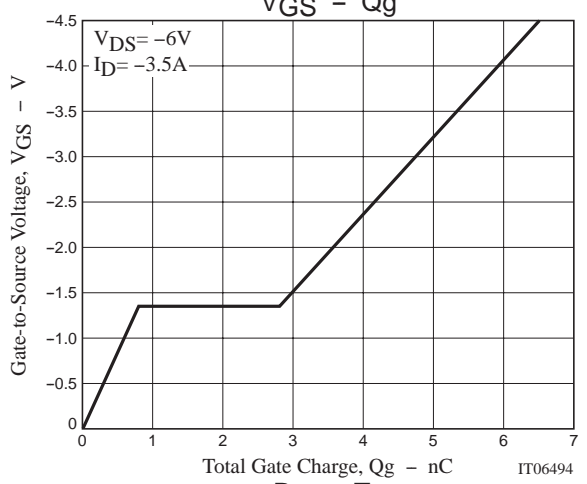
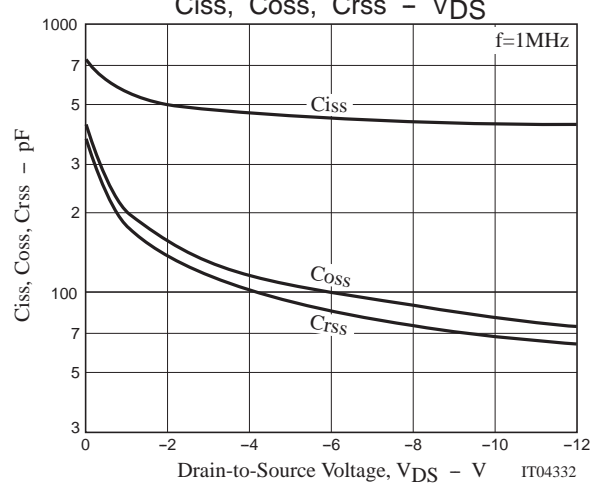
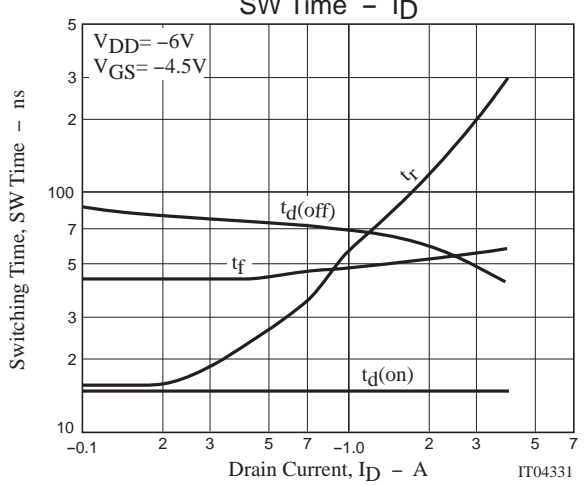
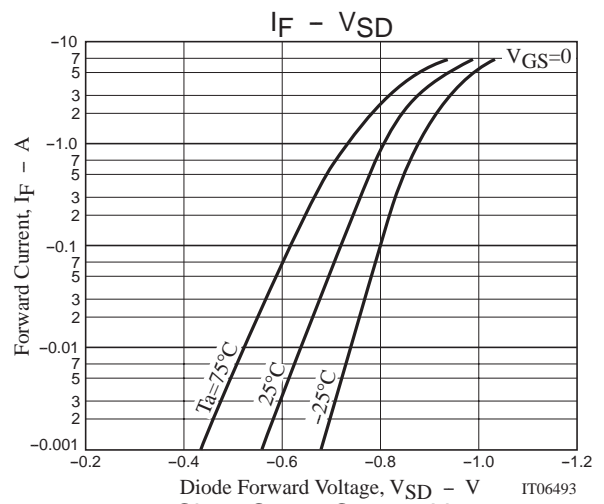
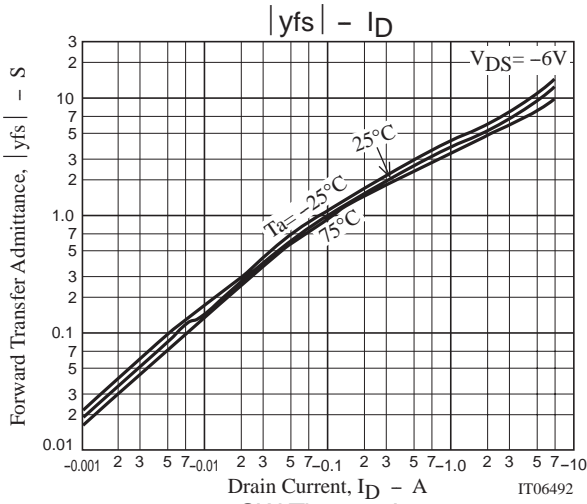
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|---------------------|---|---------|-----|------|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | V _{DS} =-6V, f=1MHz | | 450 | | pF |
| Output Capacitance | Coss | V _{DS} =-6V, f=1MHz | | 100 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =-6V, f=1MHz | | 85 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 15 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 90 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit. | | 62 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 50 | | ns |
| Total Gate Charge | Q _g | V _{DS} =-6V, V _{GS} =-4.5V, I _D =-3.5A | | 6.5 | | nC |
| Gate-to-Source Charge | Q _{gs} | V _{DS} =-6V, V _{GS} =-4.5V, I _D =-3.5A | | 0.8 | | nC |
| Gate-to-Drain "Miller" Charge | Q _{gd} | V _{DS} =-6V, V _{GS} =-4.5V, I _D =-3.5A | | 2.0 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =-3.5A, V _{GS} =0 | -0.9 | | -1.5 | V |

Switching Time Test Circuit



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