

SANYO Semiconductors DATA SHEET

MCH3459-

N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- · Low ON-resistance.
- · Ultrahigh-speed switching.
- · 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|--------|--|-------------|------|
| Drain-to-Source Voltage | VDSS | | 30 | V |
| Gate-to-Source Voltage | VGSS | | ±20 | V |
| Drain Current (DC) | ID | | 1.8 | Α |
| Drain Current (Pulse) | IDP | PW≤10μs, duty cycle≤1% | 7.2 | Α |
| Allowable Power Dissipation | PD | Mounted on a ceramic board (900mm ² X0.8mm) | 0.8 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Linit |
|--|-----------------------|---|---------|-----|-----|-------|
| | | | min | typ | max | Unit |
| Drain-to-Source Breakdown Voltage | V(BR)DSS | ID=1mA, VGS=0 | 30 | | | V |
| Zero-Gate Voltage Drain Current | IDSS | V _{DS} =30V, V _{GS} =0 | | | 1 | μΑ |
| Gate-to-Source Leakage Current | IGSS | V _{GS} =±16V, V _{DS} =0 | | | ±10 | μΑ |
| Cutoff Voltage | VGS(off) | VDS=10V, ID=1mA | 1.2 | | 2.6 | V |
| Forward Transfer Admittance | yfs | V _{DS} =10V, I _D =1A | 0.78 | 1.3 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS} (on)1 | I _D =1A, V _G S=10V | | 150 | 195 | mΩ |
| | RDS(on)2 | ID=0.5A, VGS=4V | | 290 | 410 | mΩ |
| Input Capacitance | Ciss | V _{DS} =10V, f=1MHz | | 95 | | pF |
| Output Capacitance | Coss | V _{DS} =10V, f=1MHz | | 22 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =10V, f=1MHz | | 16 | | pF |
| Turn-ON Delay Time | t _d (on) | See specified Test Circuit. | | 6.2 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 4.5 | | ns |
| Turn-OFF Delay Time | t _d (off) | See specified Test Circuit. | | 13 | | ns |
| Fall Time | tf | See specified Test Circuit. | | 6.4 | | ns |

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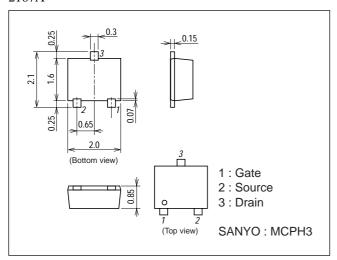
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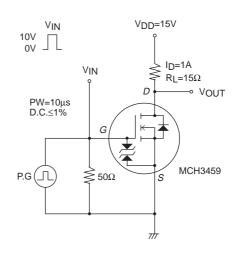
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------|--|---------|------|-----|-------|
| | | | min | typ | max | O III |
| Total Gate Charge | Qg | V _{DS} =10V, V _{GS} =10V, I _D =1.8A | | 3.2 | | nC |
| Gate-to-Source Charge | Qgs | V _{DS} =10V, V _{GS} =10V, I _D =1.8A | | 0.74 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | V _{DS} =10V, V _{GS} =10V, I _D =1.8A | | 0.42 | | nC |
| Diode Forward Voltage | VSD | IS=1.8A, VGS=0 | | 0.93 | 1.2 | V |

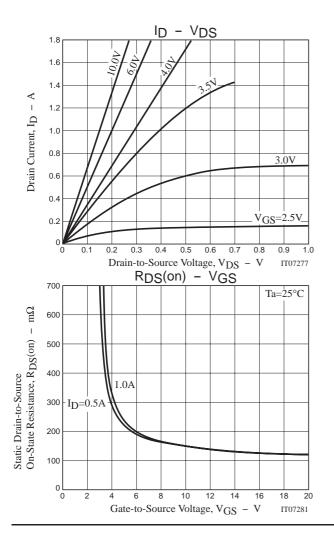
Package Dimensions

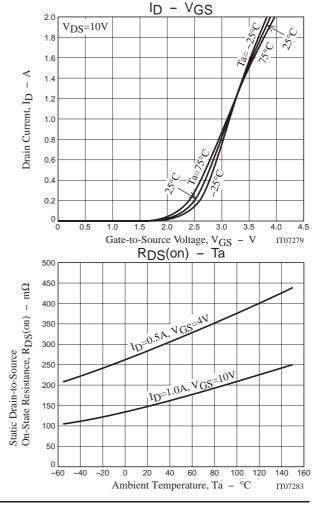
unit : mm 2167A

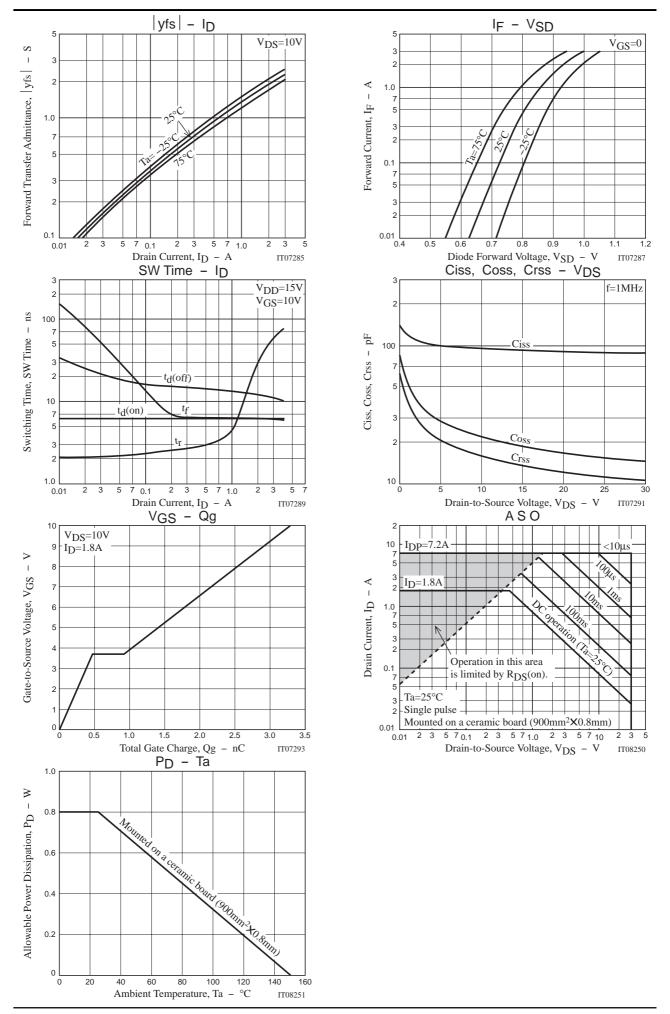


Switching Time Test Circuit









Note on usage: Since the MCH3459 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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