Ordering number : EN5319A

N-Channel Silicon MOSFET

# FW203

## Ultrahigh-Speed Switching Applications

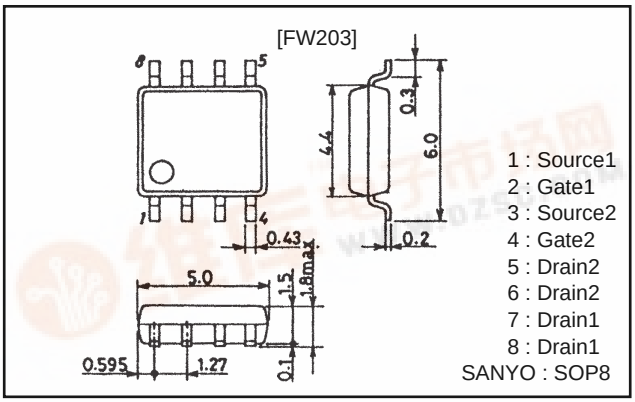
### Features

- Low ON resistance
- Ultrahigh-speed switching.
- Composite type with two 4V-drive N-channel MOSFETs facilitating high-density mounting.
- Matched pair capability.

### Package Dimensions

unit: mm

**2129-SOP8**




### Specifications

### Absolute Maximum Ratings at Ta=25°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) | $I_D$ | | 5 | A |
| Drain Current (pulse) | $I_{DP}$ | PW≤10μs, duty cycle≤1% | 48 | A |
| Allowable Power Dissipation | $P_D$ | Mounted on a ceramic board (1000mm$^2$×0.8mm) 1unit | 1.7 | W |
| Total Dissipation | $P_T$ | Mounted on a ceramic board (1000mm$^2$×0.8mm) | 2.0 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage temperature | Tstg | | –55 to +150 | °C |

### Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| D-S Breakdown Voltage | $V_{(BR)DSS}$ | $I_D$=1mA, $V_{GS}$=0 | 30 | | | V |
| Zero-Gate-Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=30V, $V_{GS}$=0 | | | 100 | μA |
| Gate-to-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±16V, $V_{DS}$=0 | | | ±10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$=10V, $I_D$=1mA | 1.0 | | 2.5 | V |
| Forward Transfer Admittance | $\|y_{fs}\|$ | $V_{DS}$=10V, $I_D$=5A | 5 | 8 | | S |
| Static Drain-to-Source ON-State Resistance | $R_{DS(on)}$ | $I_D$=5A, $V_{GS}$=10V | | 36 | 46 | mΩ |
| | $R_{DS(on)}$ | $I_D$=5A, $V_{GS}$=4V | | 58 | 78 | mΩ |
| Input Capacitance | Ciss | $V_{DS}$=10V, f=1MHz | | 550 | | pF |
| Output Capacitance | Coss | $V_{DS}$=10V, f=1MHz | | 330 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=10V, f=1MHz | | 120 | | pF |

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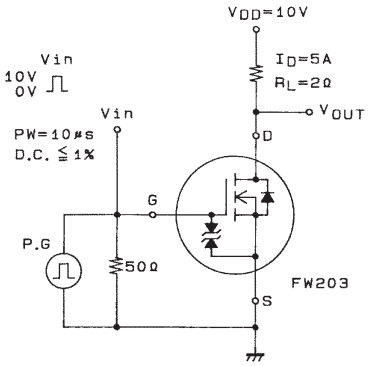
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 15 | | ns |
| Rise Time | $t_r$ | ″ | | 200 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | ″ | | 150 | | ns |
| Fall Time | $t_f$ | ″ | | 160 | | ns |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=5A, $V_{GS}$=0 | | 1.0 | 1.2 | V |

## Switching Time Test Circuit




## Electrical Connection

(Top view)