

Load Switching Applications

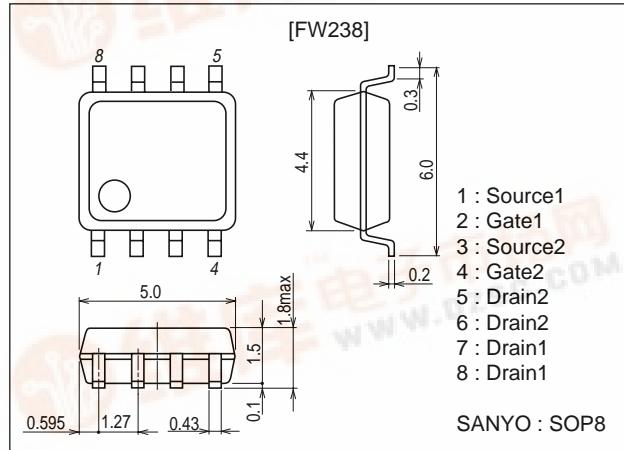
Features

- Low ON-resistance.
- 4V drive.

Package Dimensions

unit : mm

2129



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 | | 5 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 52 | A |
| Allowable Power Dissipation | P _D | Mounted on a ceramic board (1500mm ² ×0.8mm) 1unit | 1.7 | W |
| Total Dissipation | P _T | Mounted on a ceramic board (1500mm ² ×0.8mm) | 2.0 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °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 | $V_{GS(\text{off})}$ | $V_{DS}=-10\text{V}$, $I_D=1\text{mA}$ | 1.0 | | 2.4 | V | |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10\text{V}$, $I_D=5\text{A}$ | 4.9 | 7.0 | | S | |
| Static Drain-to-Source On-State Resistance | $R_{DS(\text{on})1}$ | $I_D=5\text{A}$, $V_{GS}=10\text{V}$ | | | 37 | 49 | $\text{m}\Omega$ |
| | $R_{DS(\text{on})2}$ | $I_D=4\text{A}$, $V_{GS}=4\text{V}$ | | | 52 | 73 | $\text{m}\Omega$ |

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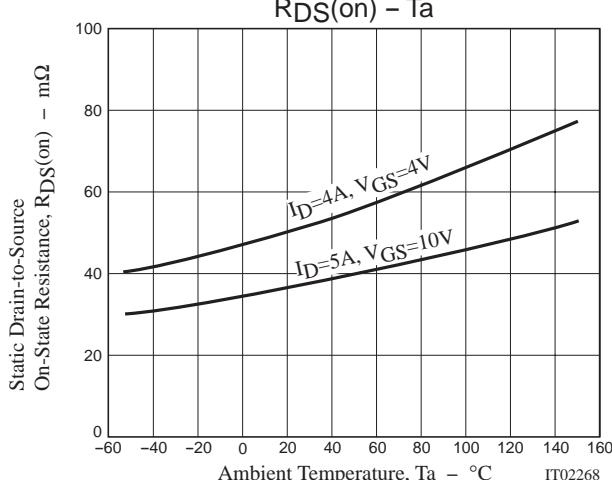
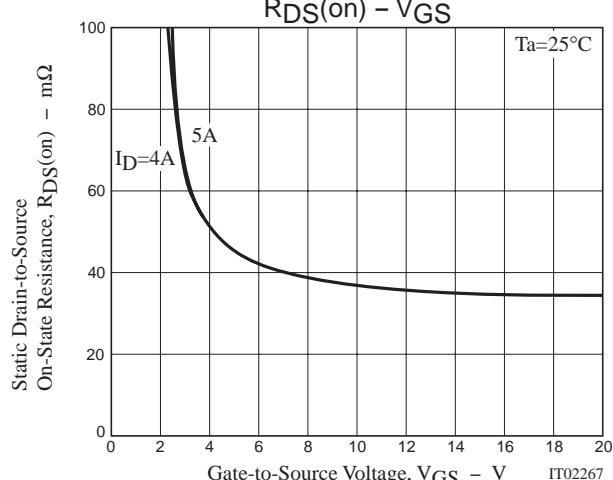
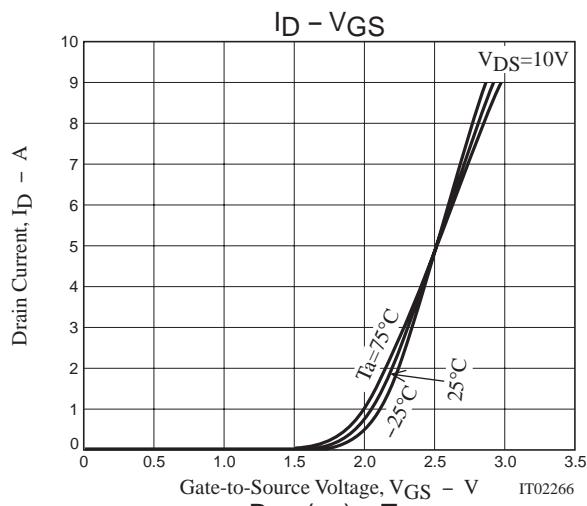
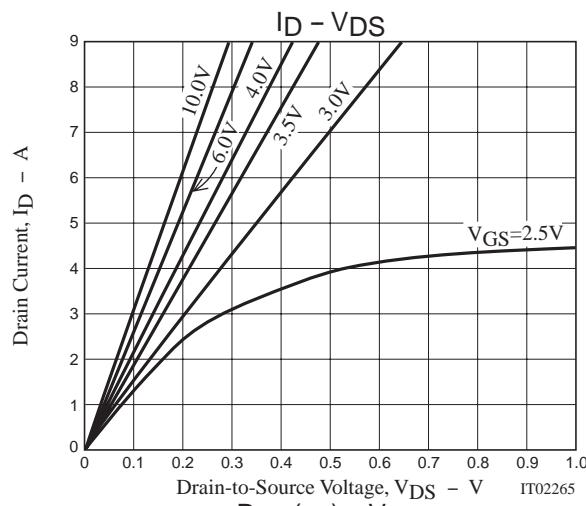
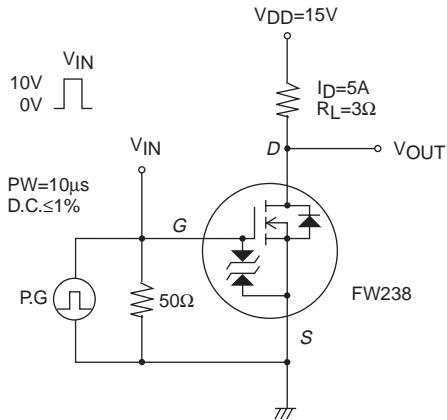
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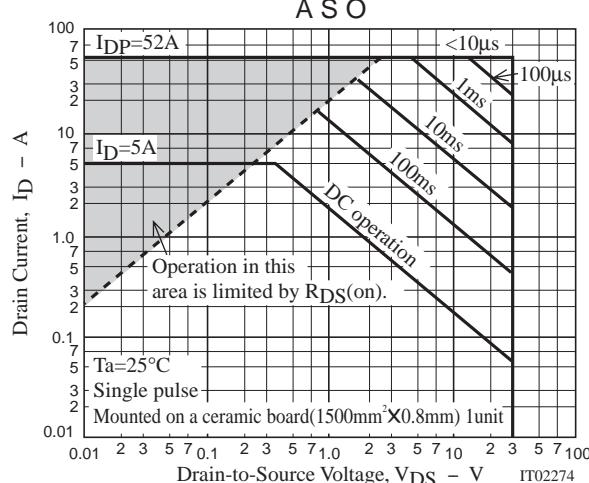
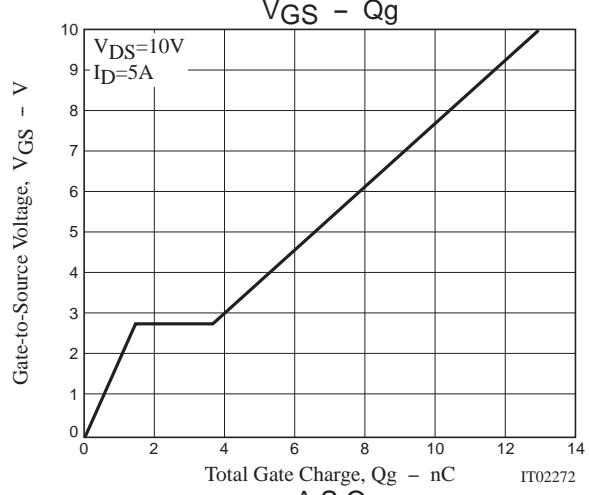
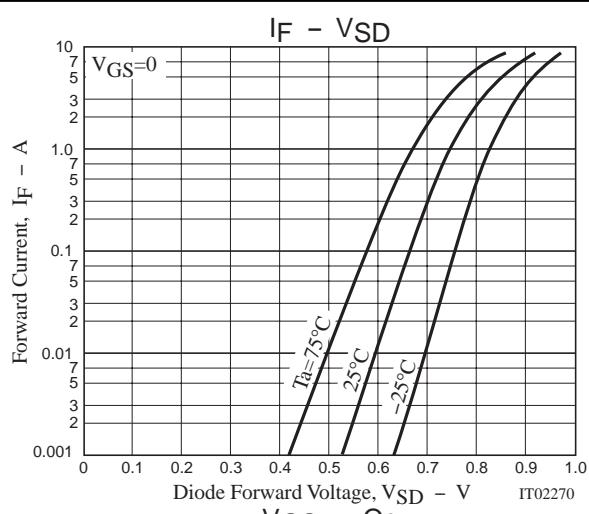
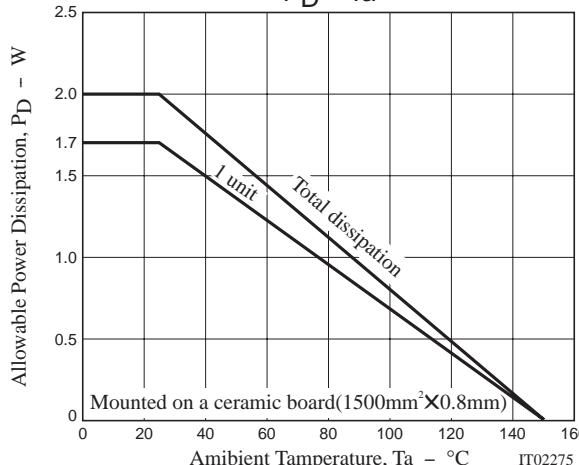
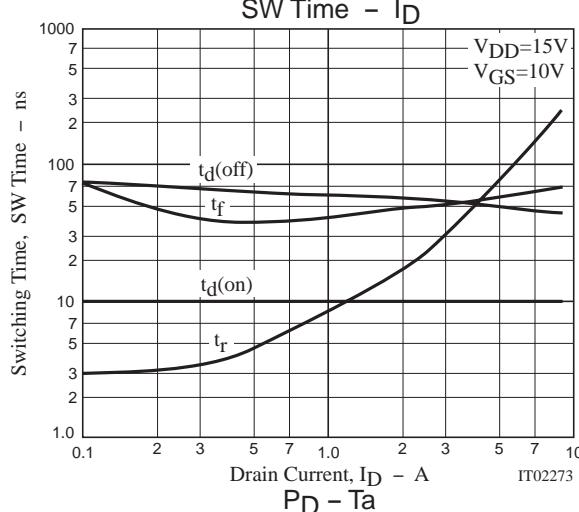
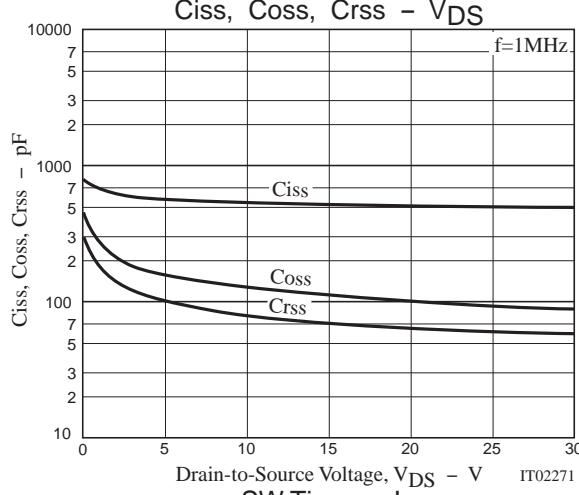
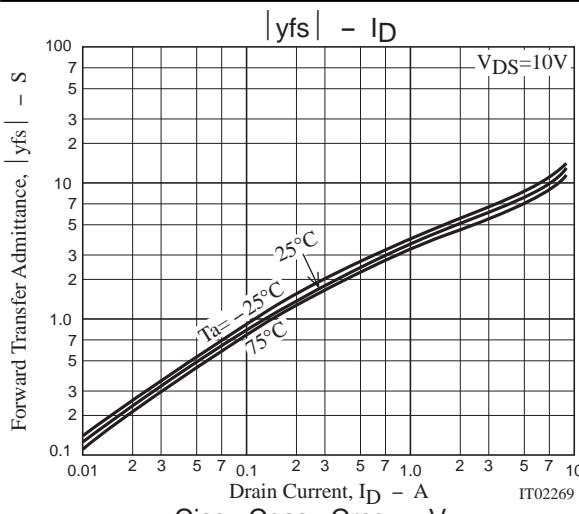
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------------|----------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Input Capacitance | C_{iss} | $V_{DS}=10V, f=1MHz$ | | 550 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10V, f=1MHz$ | | 130 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=10V, f=1MHz$ | | 80 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit | | 10 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 95 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit | | 55 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 50 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=10V, V_{GS}=10V, I_D=5A$ | | 13 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=10V, V_{GS}=10V, I_D=5A$ | | 1.5 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=10V, V_{GS}=10V, I_D=5A$ | | 2.2 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=5A, V_{GS}=0$ | | 0.85 | 1.2 | V |

Marking : W238

Switching Time Test Circuit



FW238



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