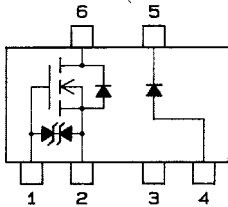


**FX852**MOSFET:N-Channel Silicon MOSFET
SBD:Schottky Barrier Diode**DC-DC Converter Applications****Features**

- Composite type composed of a low ON-resistance N-channel MOSFET for ultrahigh-speed switching and low-voltage driving and a fast-recovery, low forward-voltage Schottky barrier diode. Facilitates high-density mounting.
- The FX852 is formed with 2 chips, one being equivalent to the 2SK1467 and the other the SB07-03P, placed in one package.

Electrical Connection

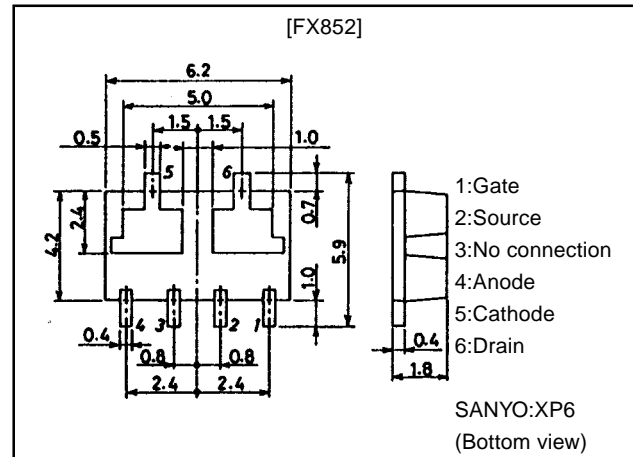
- 1:Gate
- 2:Source
- 3:No connection
- 4:Anode
- 5:Cathode
- 6:Drain

(Top view)

Package Dimensions

unit:mm

2119

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|-----------|---|-------------|------|
| [MOSFET] | | | | |
| Drain-to-Source Voltage | V_{DSS} | | 30 | V |
| Gate-to-Source Voltage | V_{GSS} | | ± 15 | V |
| Drain Current (DC) | I_D | | 2 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu s$, duty cycle $\leq 1\%$ | 8 | A |
| Allowable Power Dissipation | P_D | $T_c = 25^\circ C$ | 6 | W |
| | P_D | Mounted on ceramic board (750mm ² × 0.8mm) | 1.5 | W |
| Channel Temperature | T_{ch} | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |
| [SBD] | | | | |
| Repetitive Peak Reverse Voltage | V_{RRM} | | 30 | V |
| Non-repetitive Peak Reverse Surge Voltage | V_{RSM} | | 35 | V |
| Average Rectified Current | I_O | | 700 | mA |
| Surge Forward Current | I_{FSM} | 50Hz sine wave, 1 cycle | 5 | A |
| Junction Temperature | T_j | | -55 to +125 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

· Marking:852

Continued on next page.

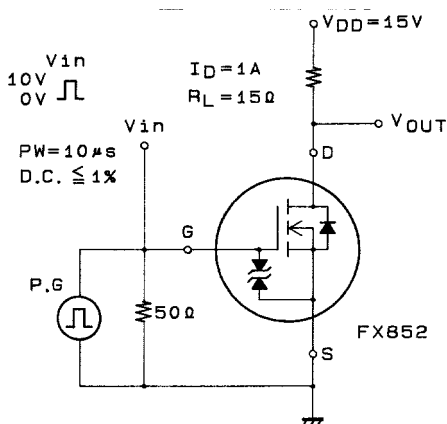
FX852

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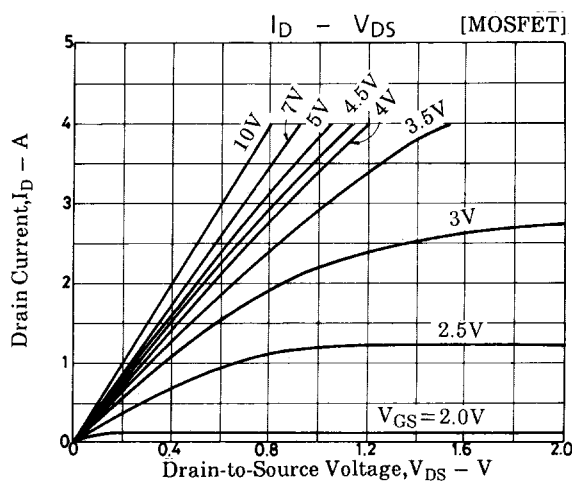
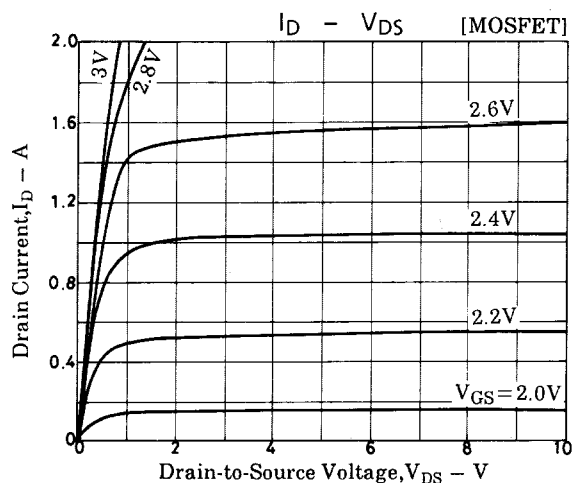
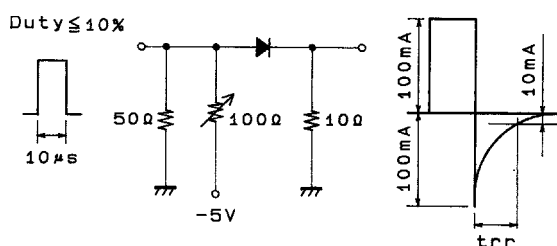
Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--|---------|------|----------|----------|
| | | | min | typ | max | |
| [MOSFET] | | | | | | |
| 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} | $V_{GS}=\pm 12V, V_{DS}=0$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$ | 1.0 | | 2.0 | V |
| Forward Transfer Admittance | $ Y_{fs} $ | $V_{DS}=10V, I_D=1A$ | 1.2 | 2.0 | | S |
| Static Drain-to-Source ON-State Resistance | $R_{DS(on)}$ | $I_D=1A, V_{GS}=10V$ | | 0.18 | 0.25 | Ω |
| | $R_{DS(on)}$ | $I_D=1A, V_{GS}=4V$ | | 0.25 | 0.38 | Ω |
| Input Capacitance | C_{iss} | $V_{DS}=10V, f=1MHz$ | | 170 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10V, f=1MHz$ | | 100 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=10V, f=1MHz$ | | 30 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit | | 7 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 11 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit | | 35 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 25 | | ns |
| Diode Forward Voltage | V_{SD} | $I_S=2A, V_{GS}=0$ | | 1.0 | | V |
| [SBD] | | | | | | |
| Reverse Voltage | V_R | $I_R=300\mu A$ | 30 | | | V |
| Forward Voltage | V_F | $I_F=700mA$ | | | 0.55 | V |
| Reverse Current | I_R | $V_R=15V$ | | | 80 | μA |
| Interterminal Capacitance | C | $V_R=10V, f=1MHz$ Cycle | | 26 | | pF |
| Reverse Recovery Time | t_{rr} | $I_F=I_R=100mA$, See specified Test Circuit | | | 10 | ns |
| Thermal Resistance | R_{thj-a} | Mounted on ceramic board (750mm ² ×0.8mm) | | 100 | | °C/W |

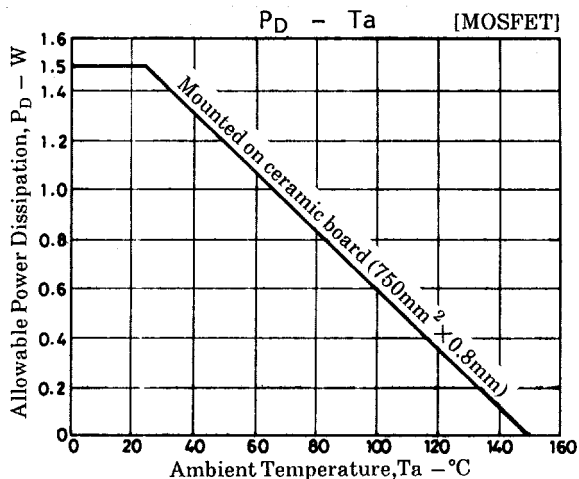
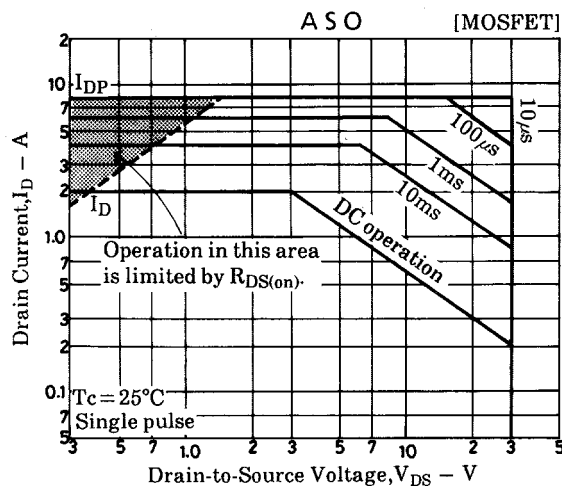
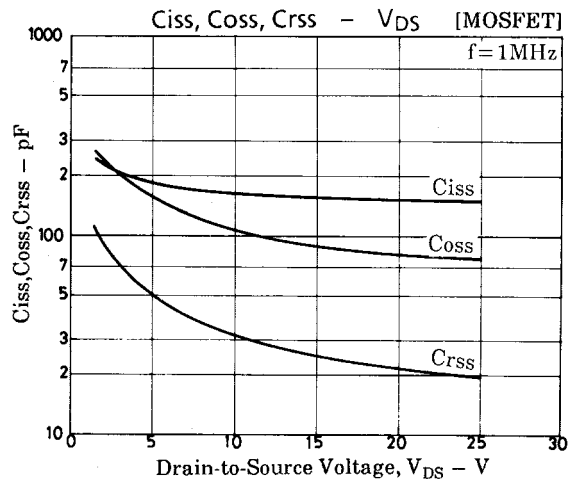
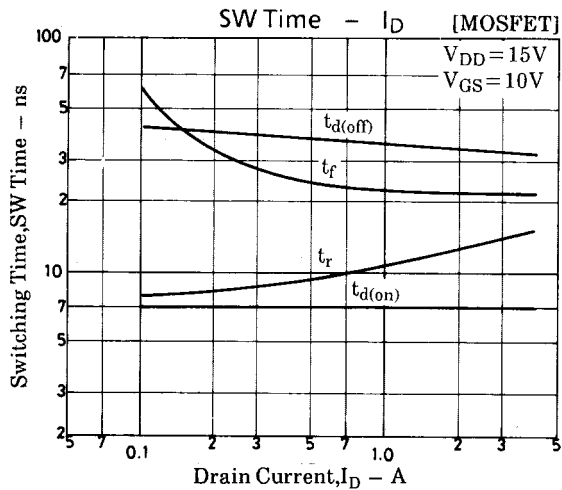
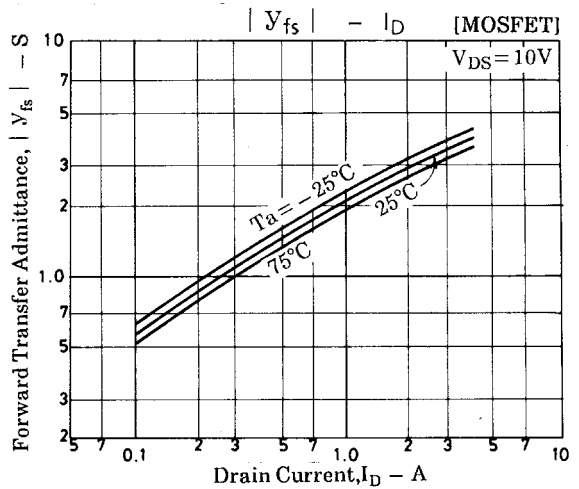
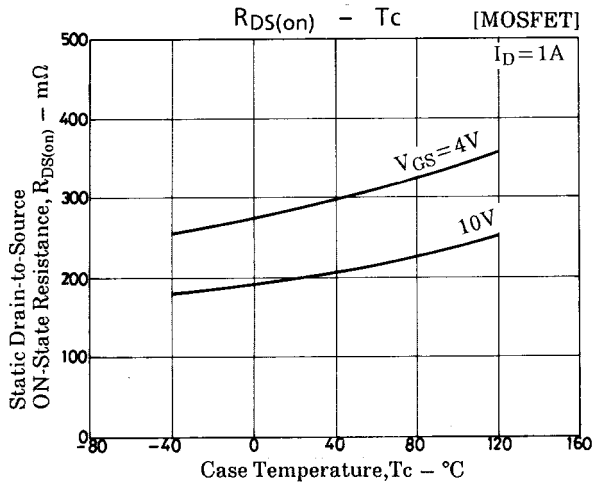
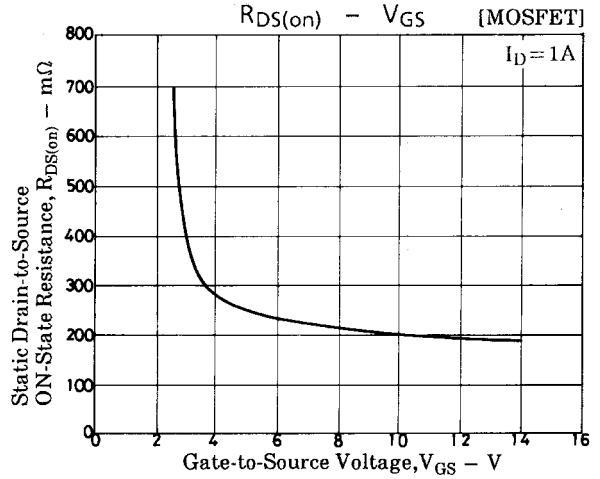
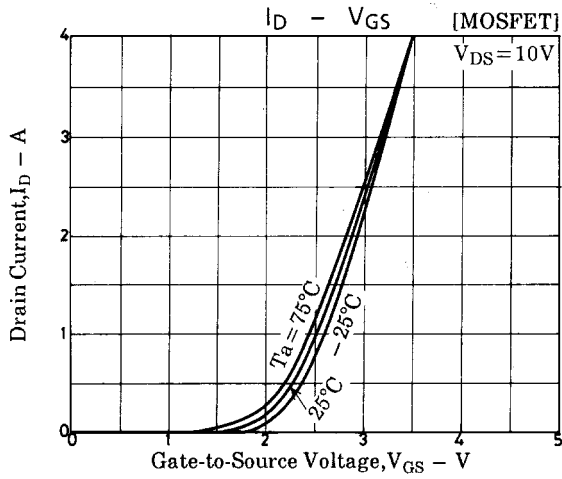
Switching Time Test Circuit [MOSFET]



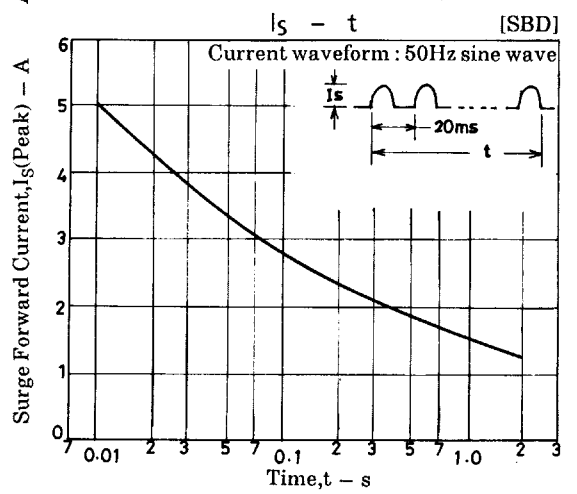
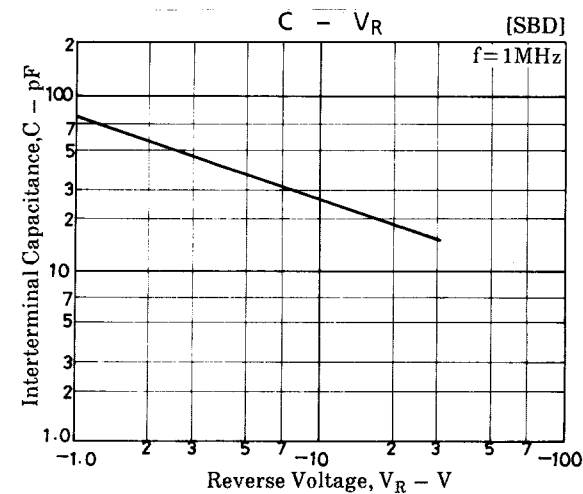
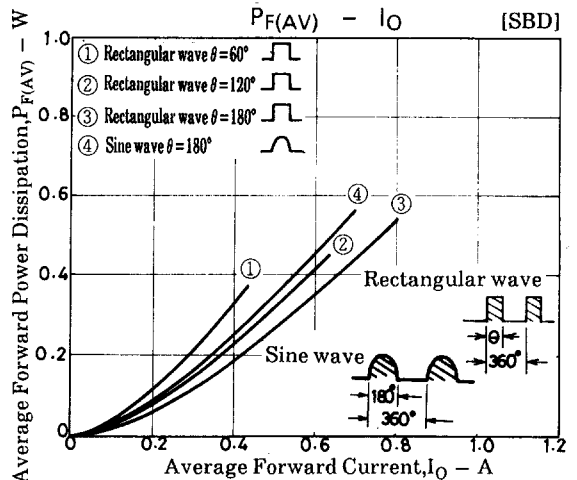
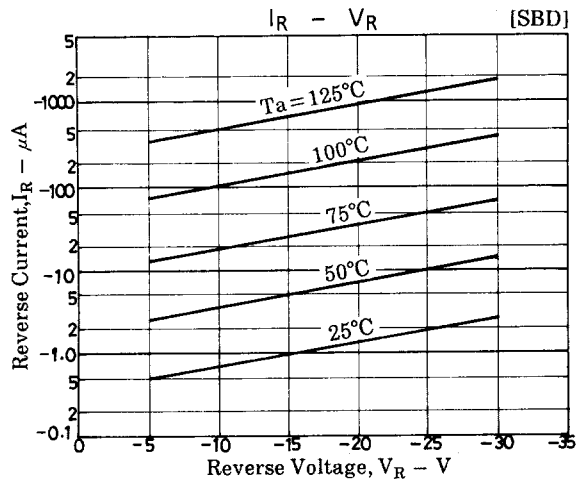
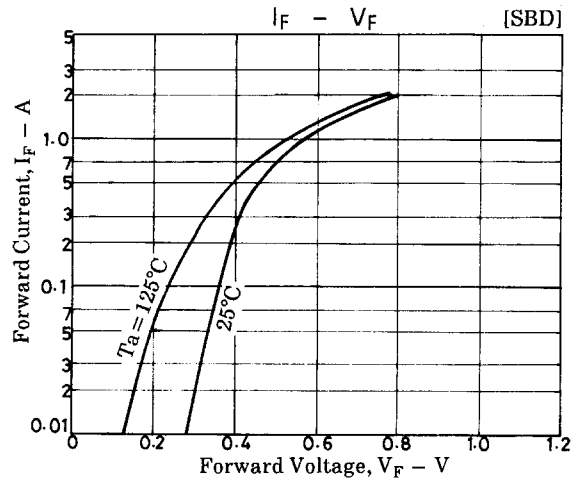
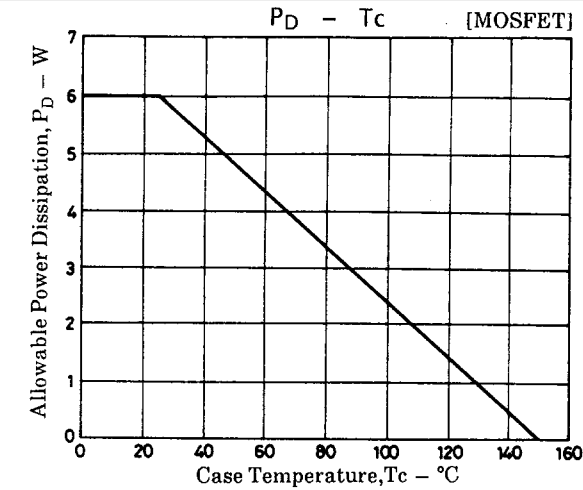
Trr Test Circuit [SBD]



FX852



FX852



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