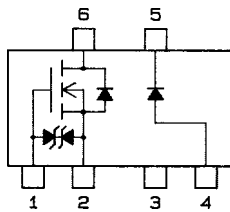


**FX853**MOSFET:N-Channel Silicon MOSFET  
SBD:Schottky Barrier Diode**DC-DC Converter Applications****Features**

- 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 FX853 is formed with 2 chips, one being equivalent to the 2SK1467 and the other the SB05-05P, placed in one package.

**Electrical Connection**

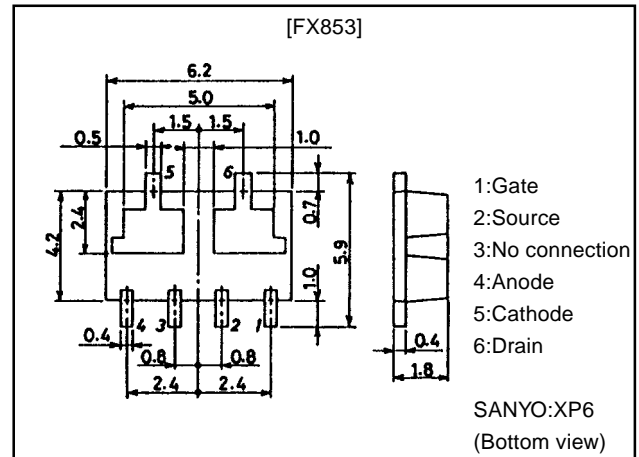
- 1:Gate
- 2:Source
- 3:No connection
- 4:Anode
- 5:Cathode
- 6:Drain

(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 <sup>2</sup> ×0.8mm)	1.5	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C
[SBD]				
Repetitive Peak Reverse Voltage	$V_{RRM}$		50	V
Non-repetitive Peak Reverse Surge Voltage	$V_{RSM}$		55	V
Average Rectified Current	$I_O$		500	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:853

Continued on next page.

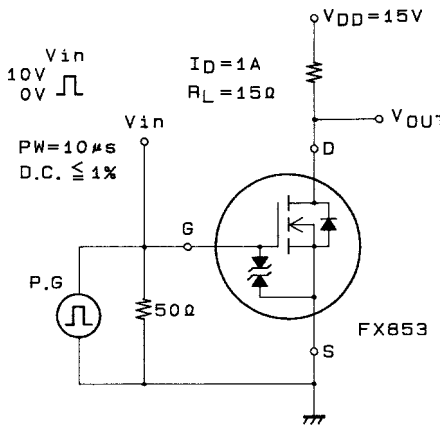
# FX853

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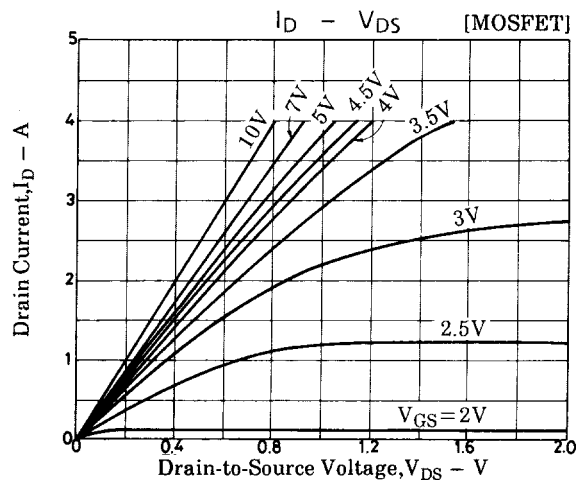
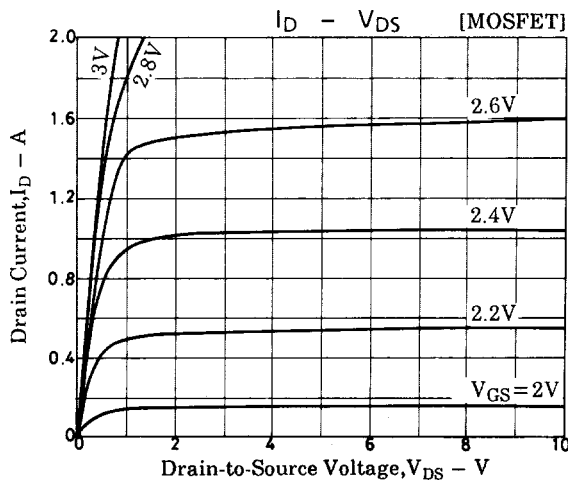
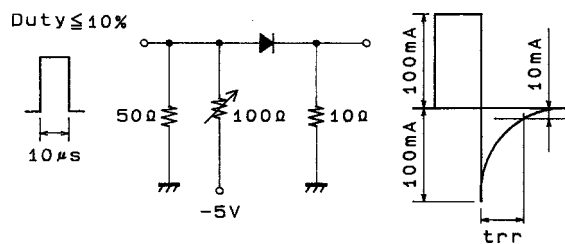
## Electrical Characteristics at Ta = 25°C

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	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 12V, V_{DS}=0$			$\pm 10$	$\mu A$
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	$\Omega$
	$R_{DS(on)}$	$I_D=1A, V_{GS}=4V$		0.25	0.38	$\Omega$
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	$V_R$	$I_R=200\mu A$	50			V
Forward Voltage	$V_F$	$I_F=500mA$			0.55	V
Reverse Current	$I_R$	$V_R=25V$			50	$\mu A$
Interterminal Capacitance	$C$	$V_R=10V, f=1MHz$ Cycle		18		pF
Reverse Recovery Time	$t_{rr}$	$I_F=I_R=100mA$ , See specified Test Circuit			10	ns
Thermal Resistance	$R_{th-a}$	Mounted on ceramic board (750mm <sup>2</sup> ×0.8mm)		100		°C/W

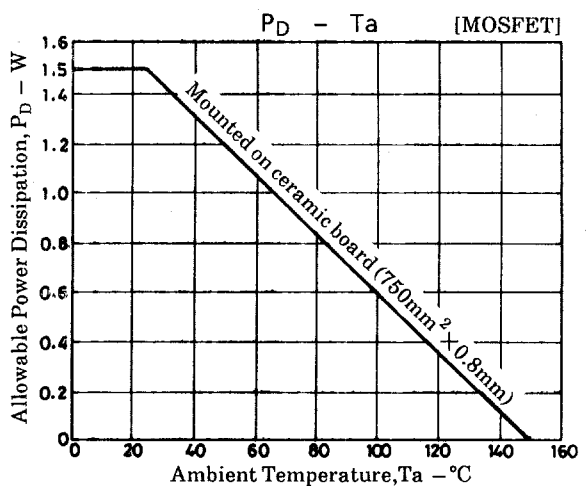
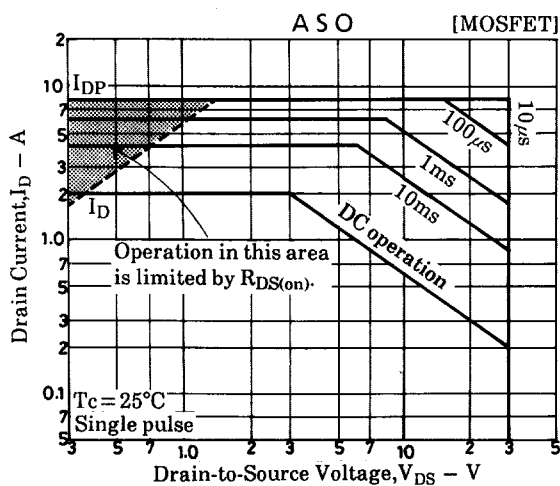
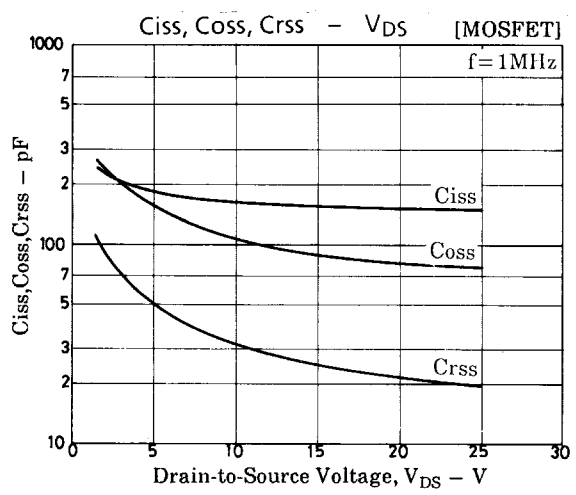
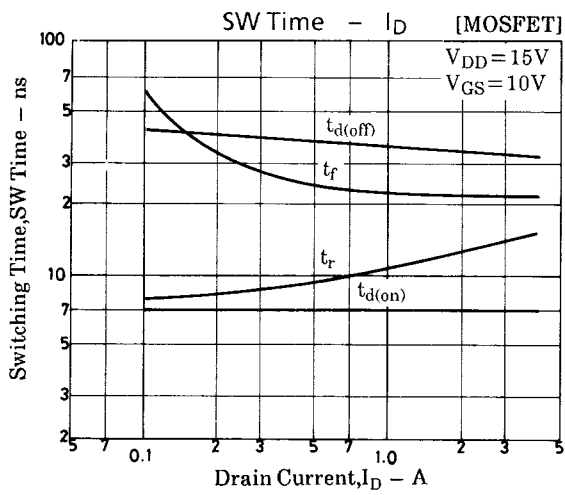
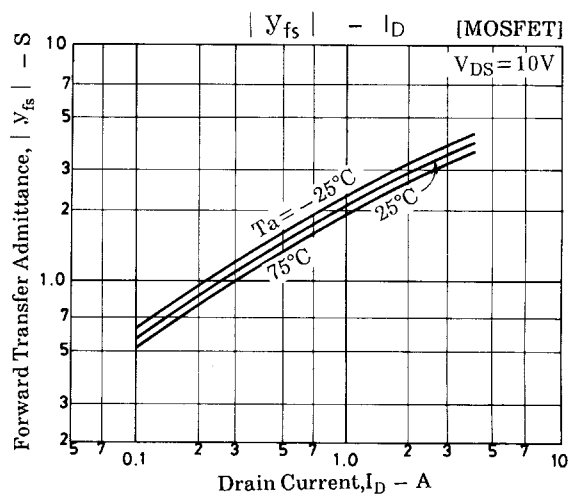
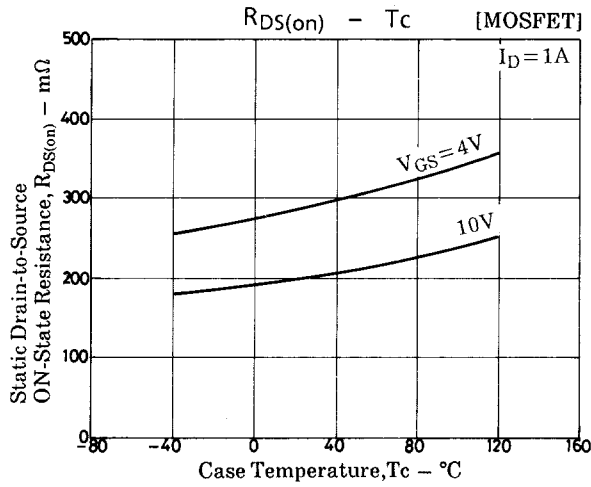
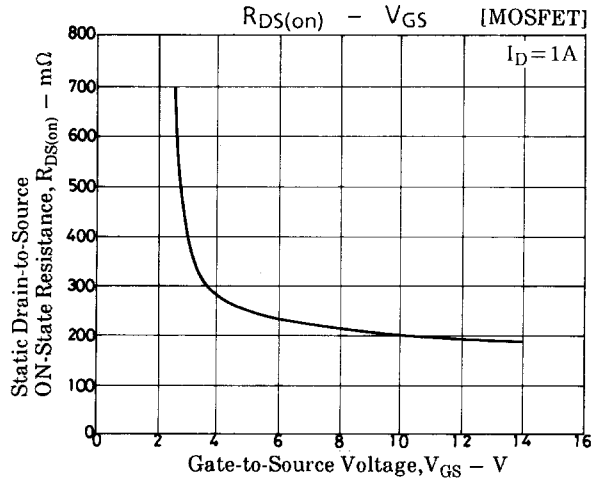
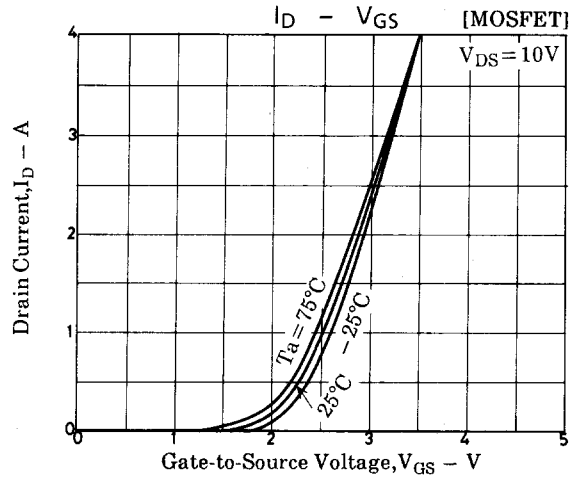
### Switching Time Test Circuit [MOSFET]



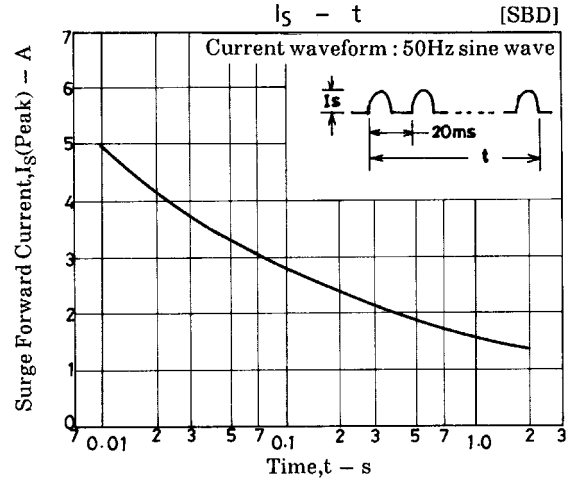
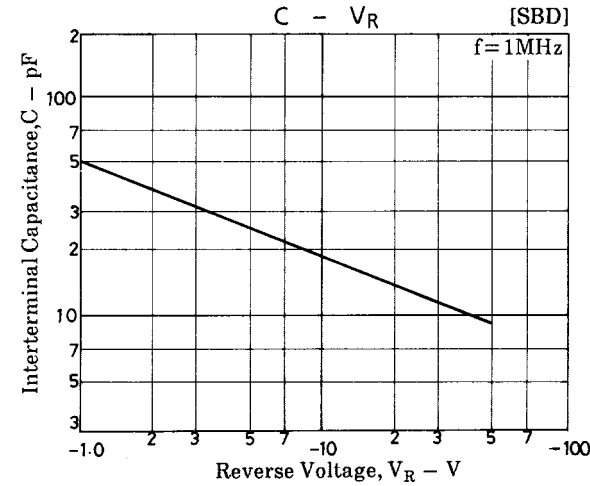
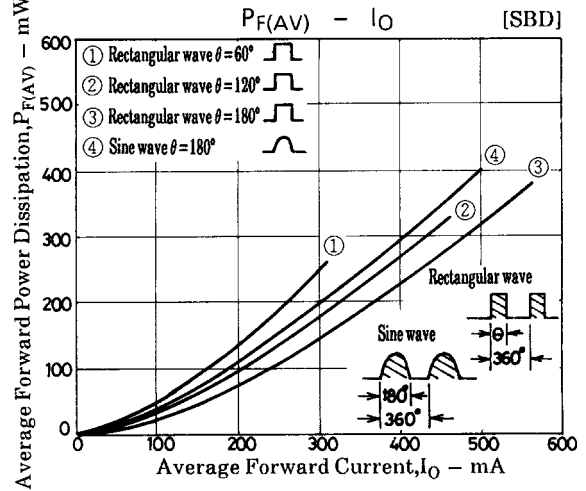
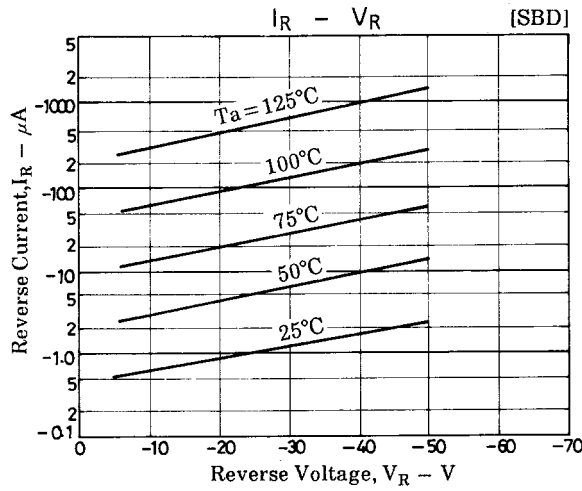
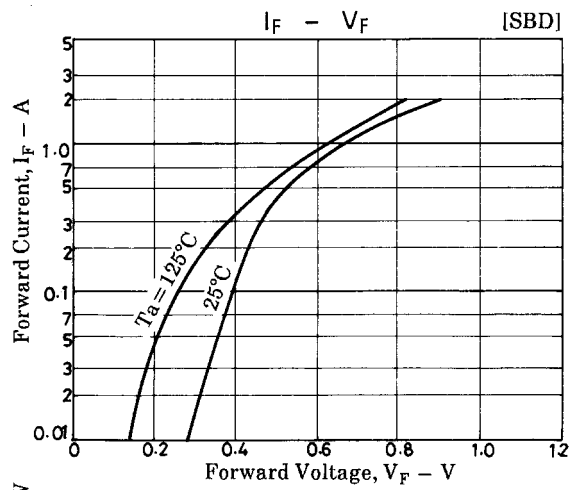
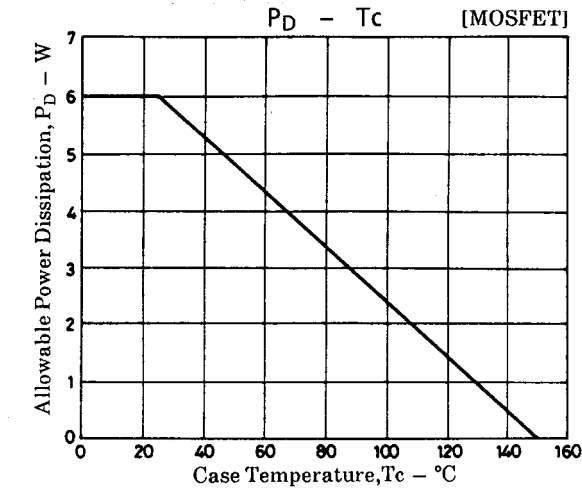
### Trr Test Circuit [SBD]



# FX853



# FX853



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