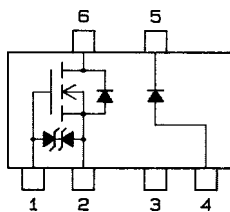


SANYO**FX853**MOSFET:N-Channel Silicon MOSFET
SBD:Schottky Barrier Diode**DC-DC Converter Applications****Features**

- 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

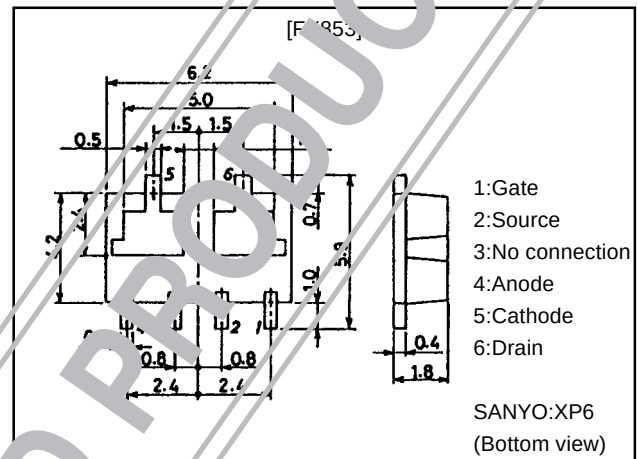
- 1:Gate
2:Source
3:No connection
4:Anode
5:Cathode
6:Drain

(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≤10μs, duty cycle≤1%	8	A
Allowable Power Dissipation	P _D	Tc=25°C	6	W
		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}		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.

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52098HA (KT)/71095TS (KOTO) TA-0118 No.4893-1/4

Continued from preceding page.

Electrical Characteristics at $T_a = 25^\circ\text{C}$

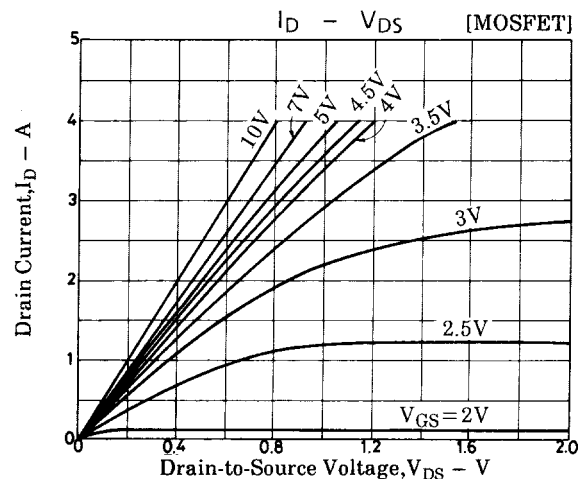
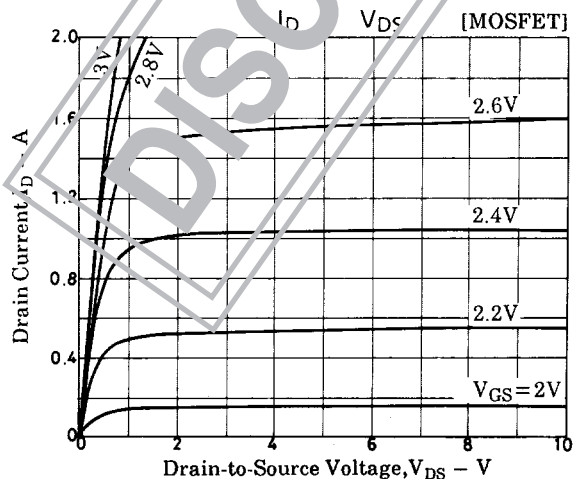
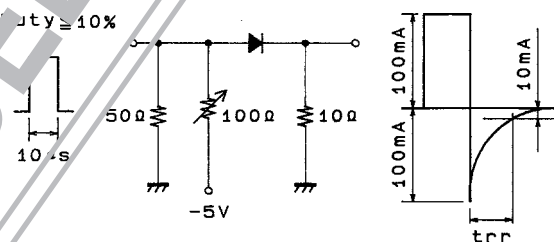
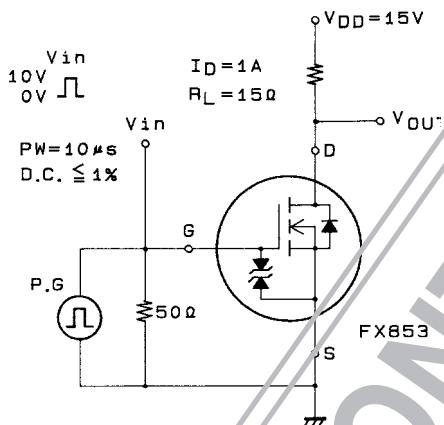
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.0		2.0	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=1A$		2.0		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=1A, V_{GS}=10V$		0.8	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	$I_R=200\mu A$	50			V
Forward Voltage	V_F	$I_F=500mA$			0.55	V
Reverse Current	I_R	$V_R=25V$			50	μA
Interterminal Capacitance	C	$V_R=10V, f=1MHz$ Cy		18		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

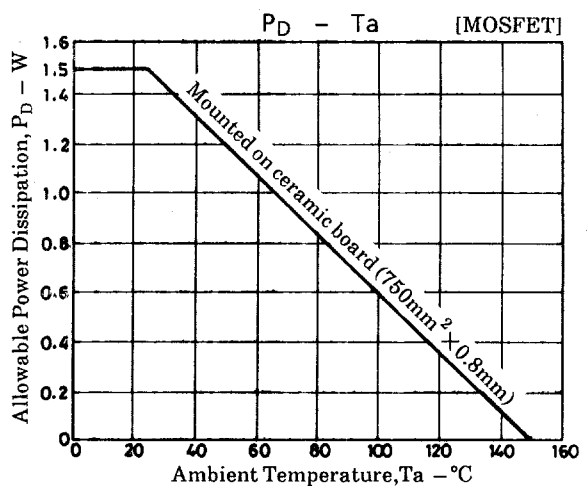
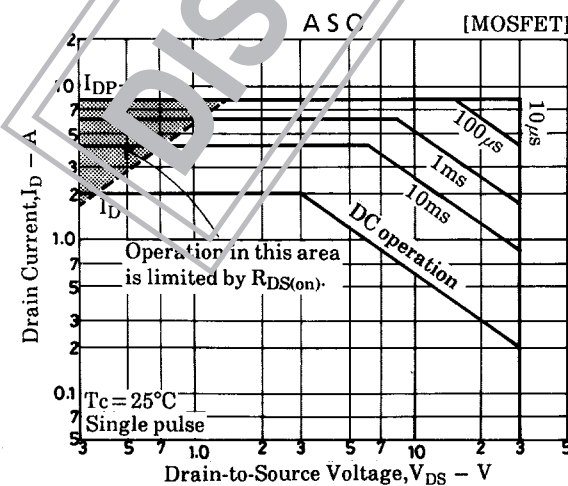
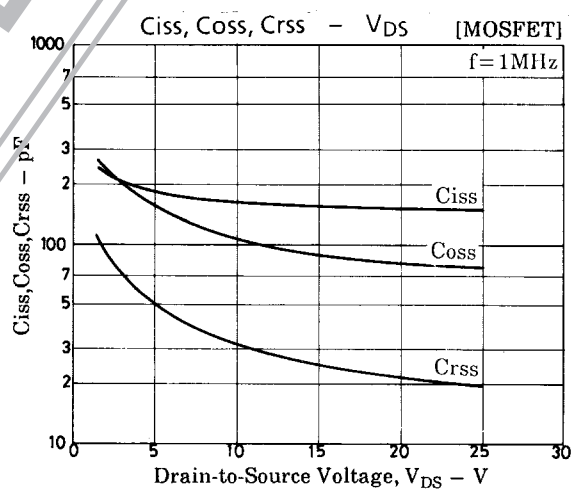
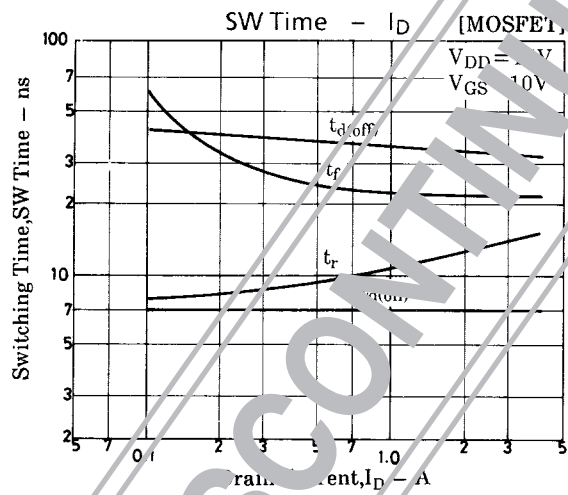
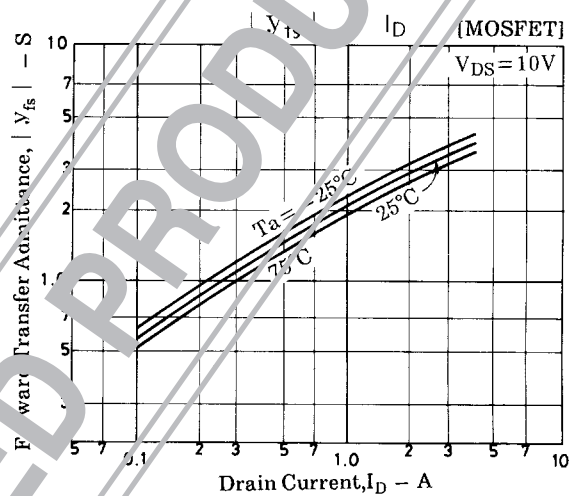
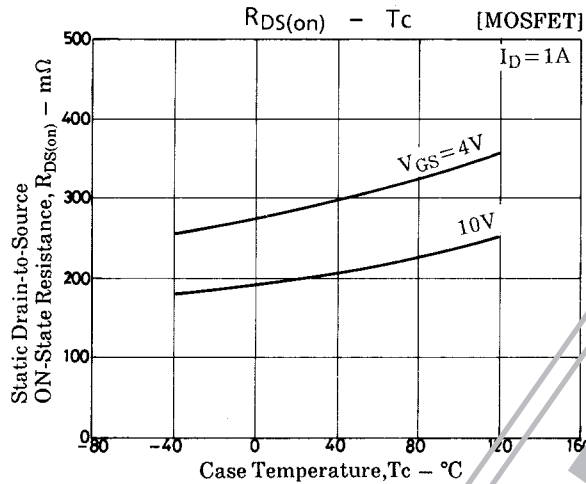
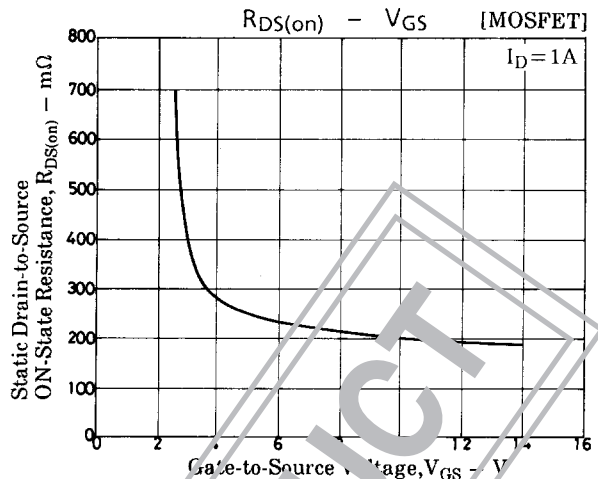
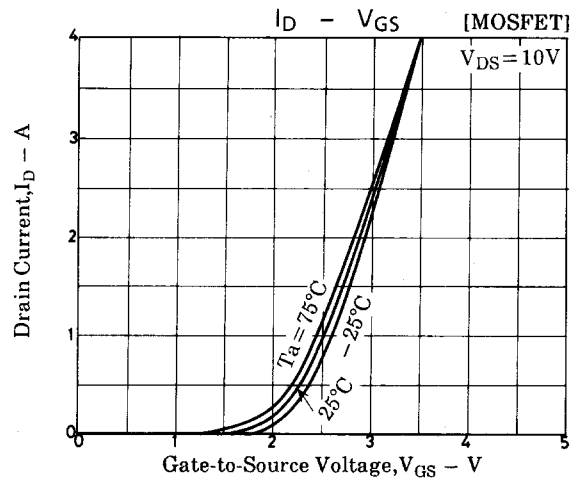
Switching Time Test Circuit

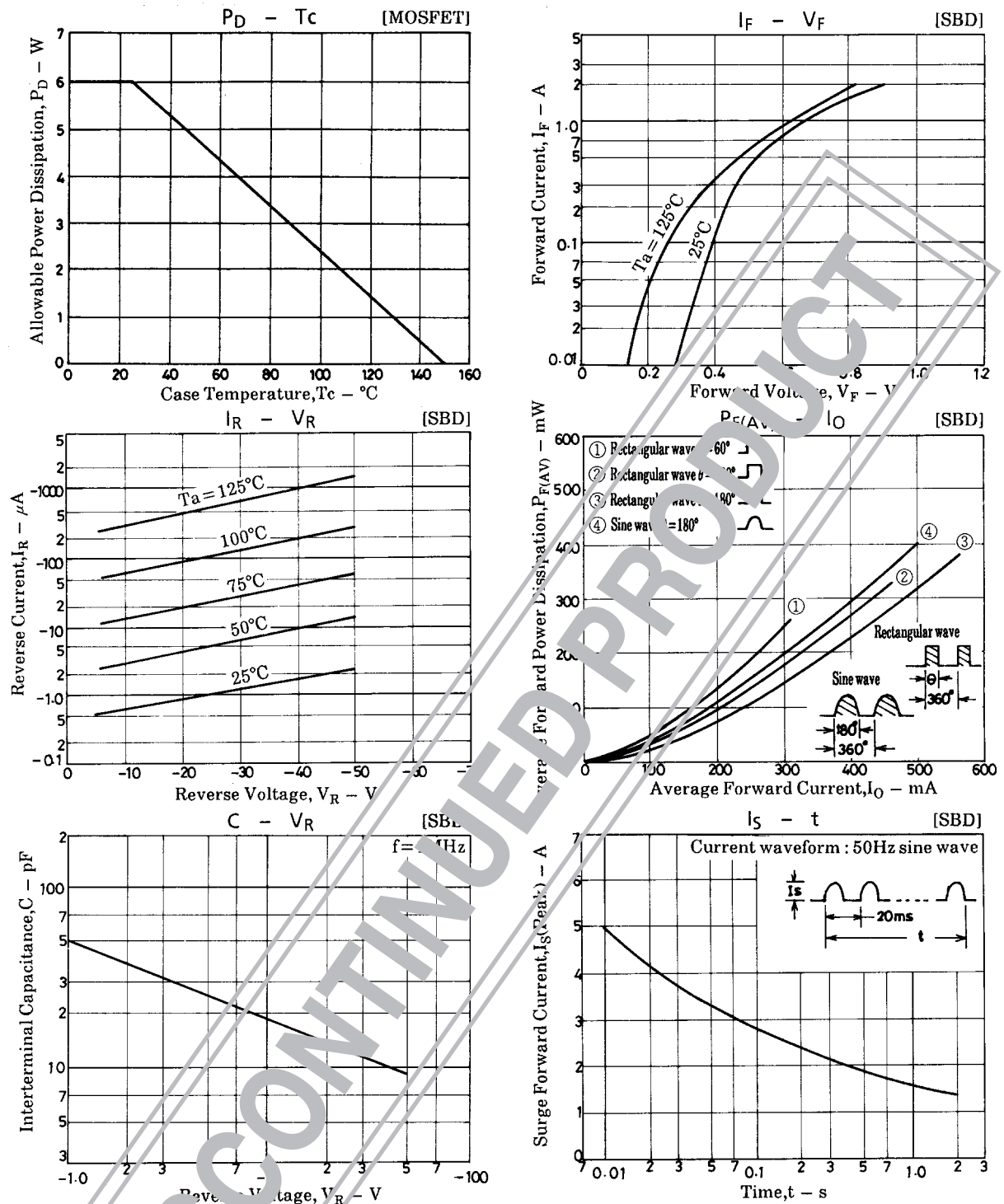
[MOSFET]

Trr Test Circuit

[SBD]







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