

Ordering number:EN4894



FX854

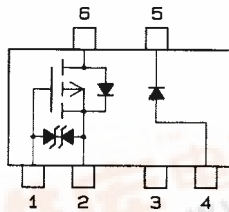
MOSFET:P-Channel Silicon MOSFET
SBD:Schottky Barrier Diode

DC-DC Converter Applications

Features

- Composite type composed of a low ON-resistance P-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 FX854 is formed with 2 chips, one being equivalent to the 2SJ190 and the other the SB05-05P, placed in one package.

Electrical Connection



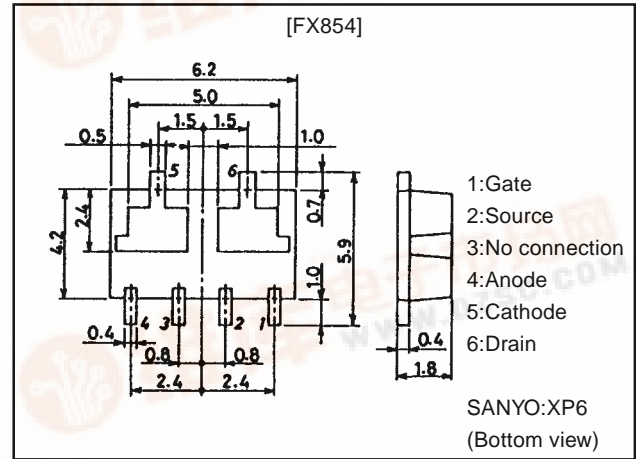
- 1:Gate
- 2:Source
- 3:No connection
- 4:Anode
- 5:Cathode
- 6:Drain

(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}		-60	V
Gate-to-Source Voltage	V_{GSS}		± 15	V
Drain Current (DC)	I_D		-1	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-4	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}		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, 1cycle	5	A
Junction Temperature	T_J		-55 to +125	°C
Storage Temperature	T_{stg}		-55 to +125	°C

· Marking:854

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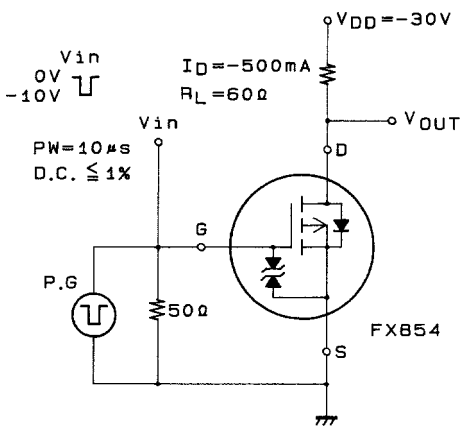
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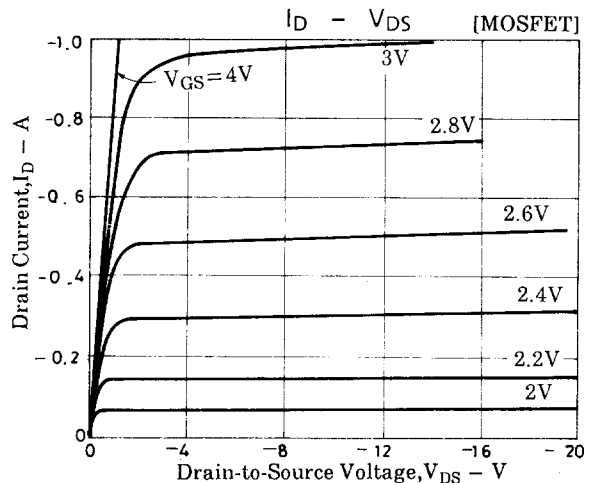
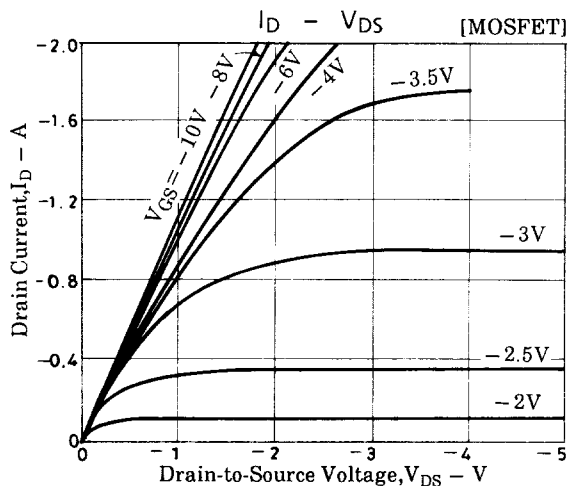
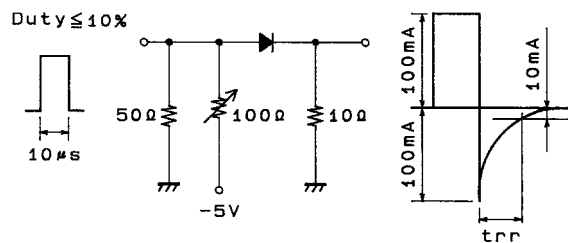
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0$	-60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -60V, V_{GS} = 0$			-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} $	$V_{DS} = -10V, I_D = -500mA$	0.6	1.0		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = -500mA, V_{GS} = -10V$		0.9	1.2	Ω
	$R_{DS(on)}$	$I_D = -500mA, V_{GS} = -4V$		1.2	1.6	Ω
Input Capacitance	C_{iss}	$V_{DS} = -20V, f = 1MHz$		160		pF
Output Capacitance	C_{oss}	$V_{DS} = -20V, f = 1MHz$		60		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -20V, f = 1MHz$		10		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		13		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		70		ns
Fall Time	t_f	See specified Test Circuit		30		ns
Diode Forward Voltage	V_{SD}	$I_S = -1A, V_{GS} = 0$		-0.9		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	$V_R = 10V, f = 1MHz$ Cycle		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

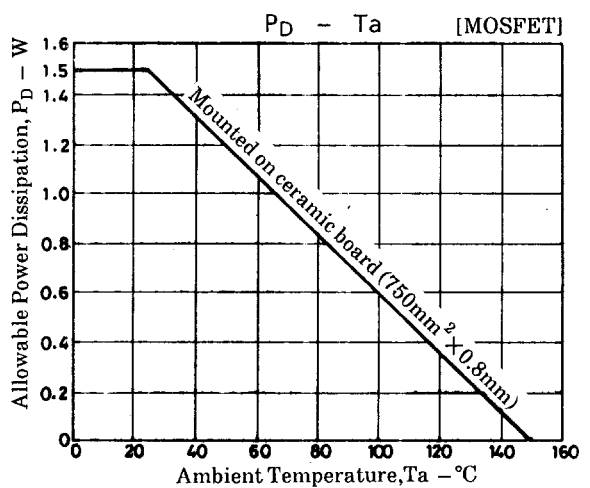
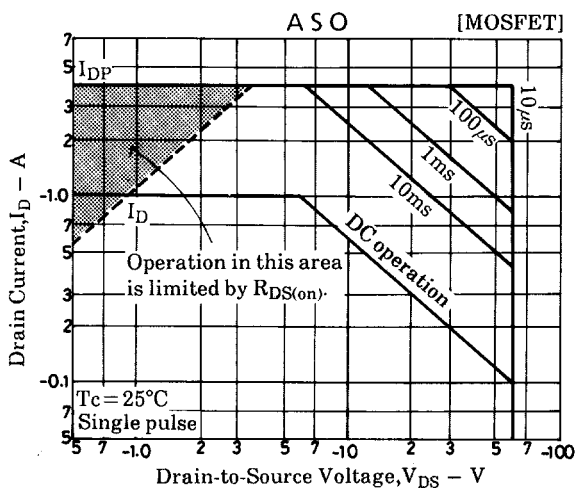
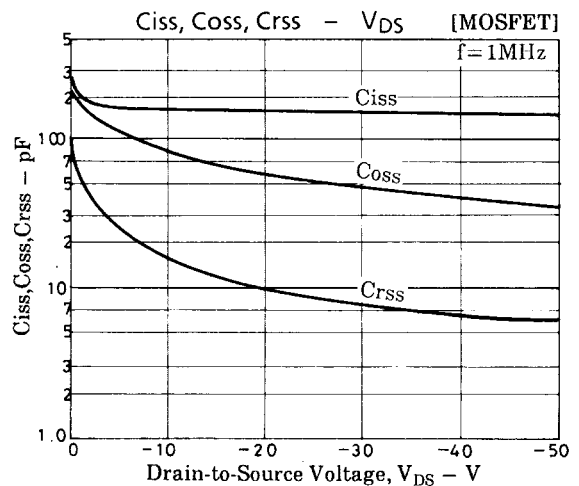
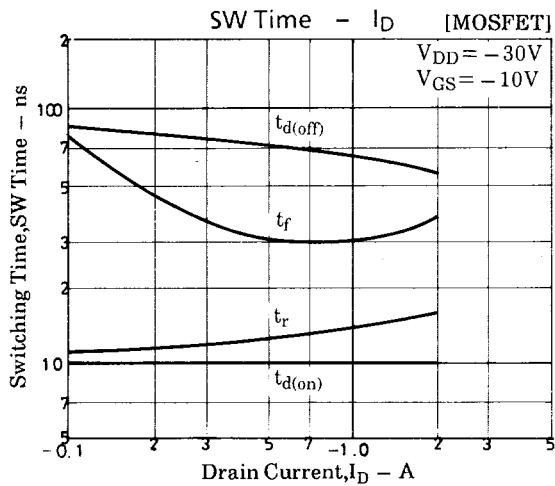
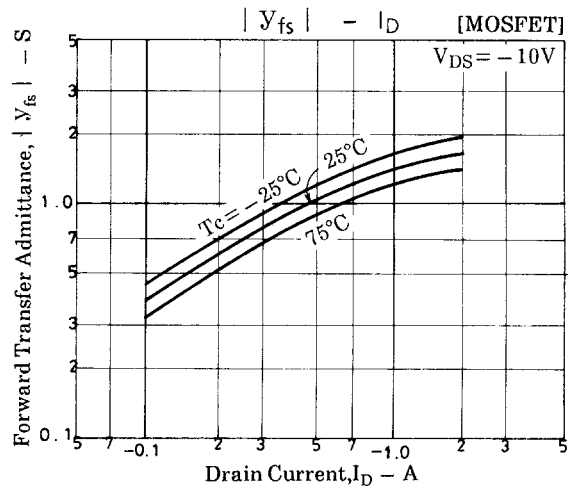
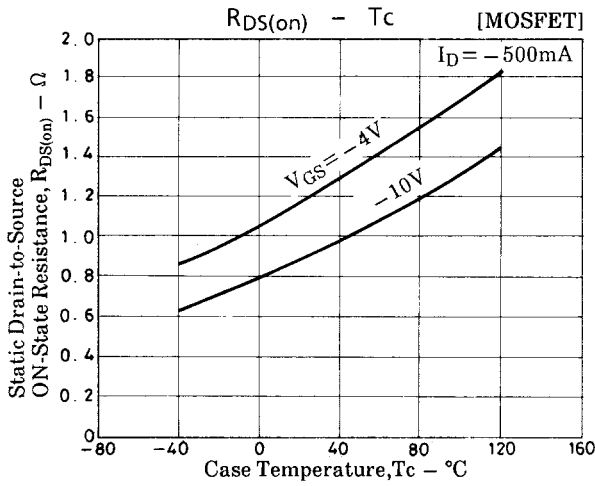
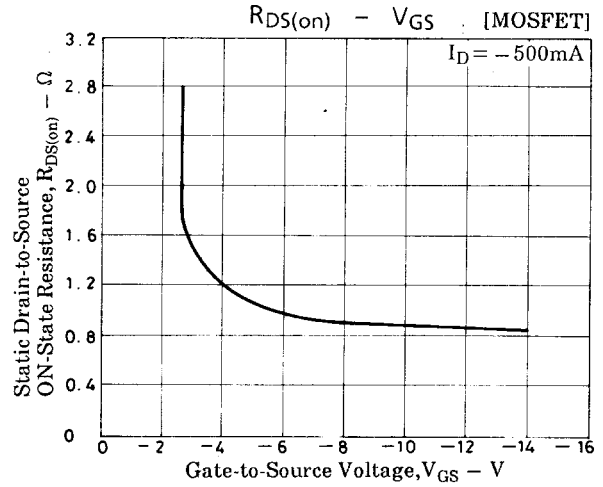
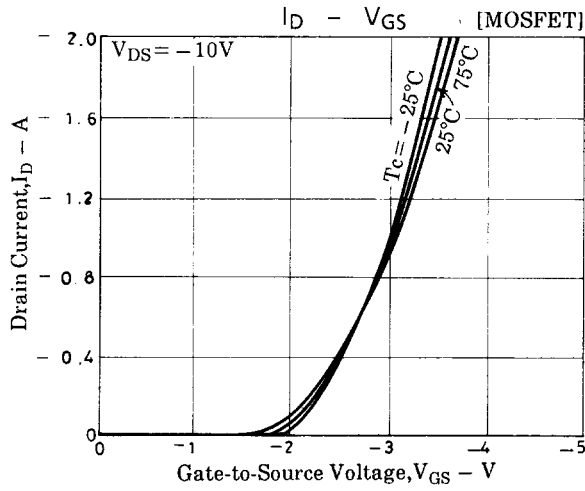
Switching Time Test Circuit [MOSFET]



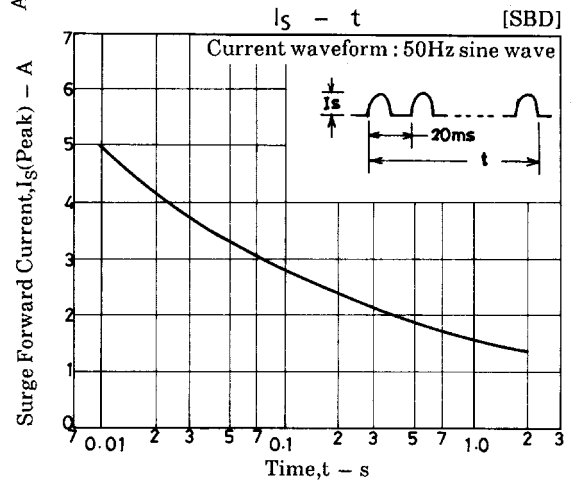
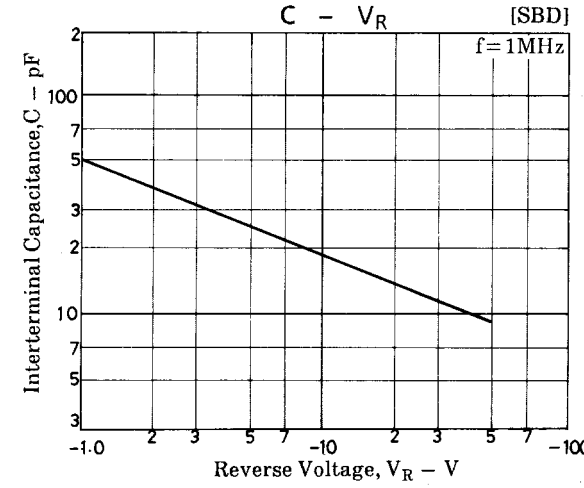
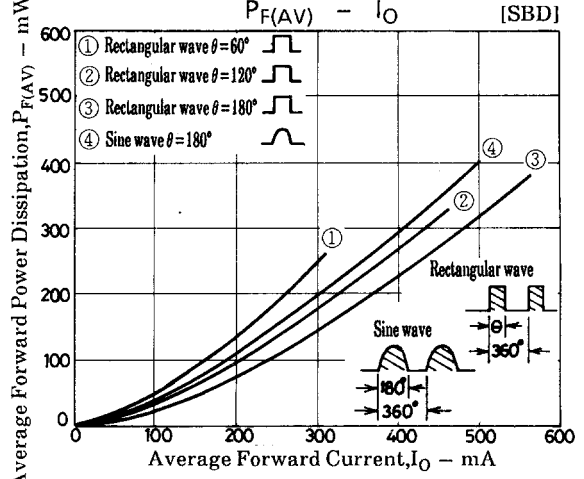
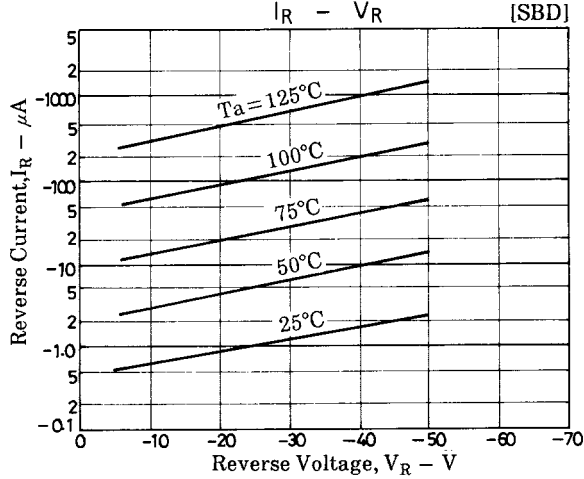
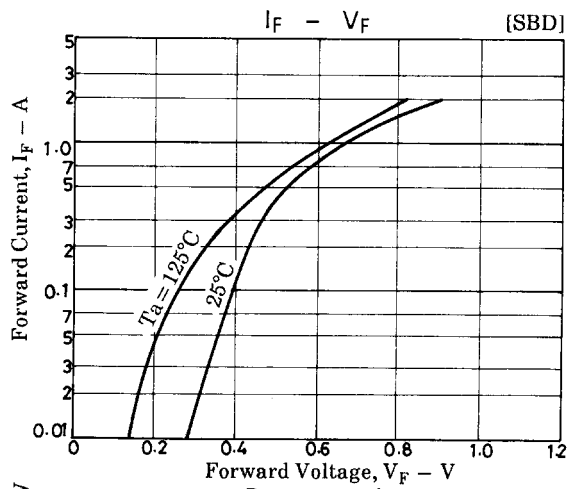
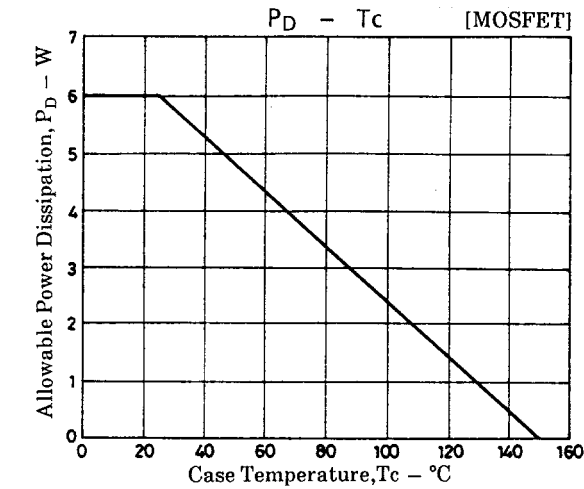
Trr Test Circuit [SBD]



FX854



FX854



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