

Ordering number:EN5263



FP502

N-Channel Silicon MOSFET
Silicon Schottky Barrier Diode

DC-DC Converter Applications

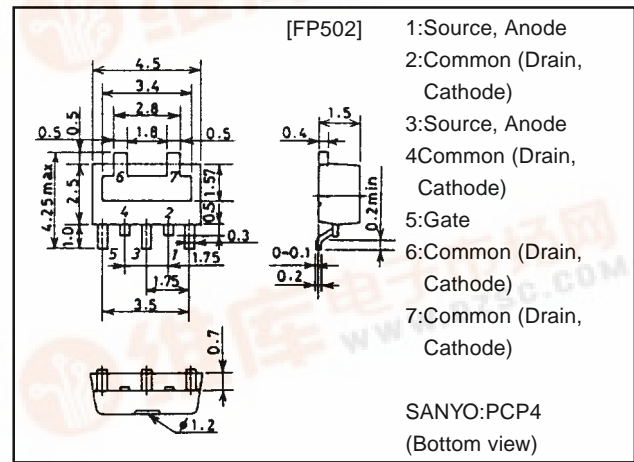
Features

- Composite type with a high-speed N-channel MOSFET and a low-forward voltage Schottky barrier diode contained in the PCP4 package, saving the mount space greatly.

Package Dimensions

unit:mm

2132



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Allowable Power Dissipation	P _D	T _c =25°C, 1 unit	3.5	W
		Mounted on ceramic board (250mm ² ×0.8mm) 1 unit	1.5	W
Storage Temperature	T _{stg}		-55 to +150	°C
[MOS block]				
Drain-to-Source Voltage	V _{DSS}		11	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		2	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle ≤1%	8	A
Channel Temperature	T _{ch}		150	°C
[Diode block]				
Average Rectified Current	I _O		500	mA

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOS block]						
D-S Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0	11			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =10.4V, V _{GS} =0			400	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.0		4.0	V
Forward Transfer Admittance	Y _{fs}	V _{DS} =10V, I _D =1A	1.2	2.2		S
Static Drain-to-Source ON-State Resistance	R _{DS(on)}	I _D =1A, V _{GS} =10V	140	200		mΩ
	R _{DS(on)}	I _D =500mA, V _{GS} =4V	200	320		mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz	150			pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1NHZ		200		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		45		pF

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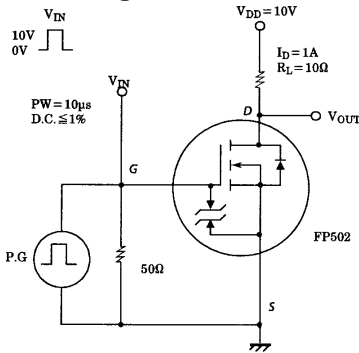


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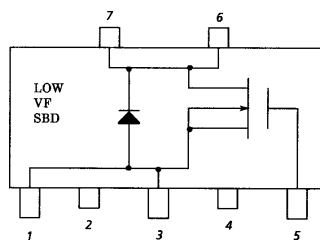
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOS block]						
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	t_r	See specified Test Circuit.		25		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		25		ns
Fall Time	t_f	See specified Test Circuit.		20		ns
[Diode block]						
Forward Voltage	V_F	$I_F=500mA$		0.4	0.45	V
Reverse Recovery Time	t_{rr}	$I_F=500mA, di/dt=50A/\mu s$		20	30	ns

Switching Time Test Circuit

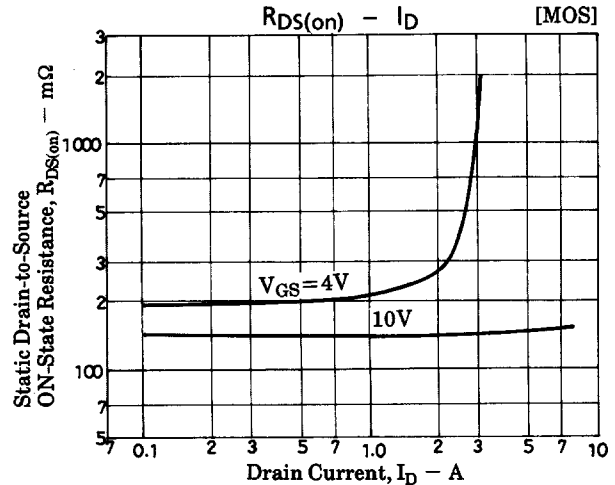
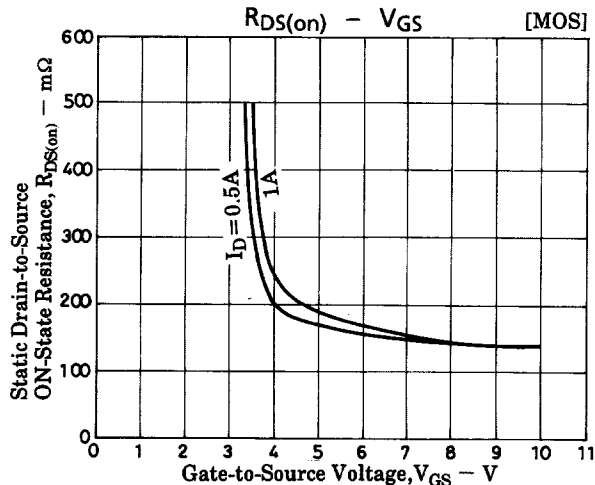
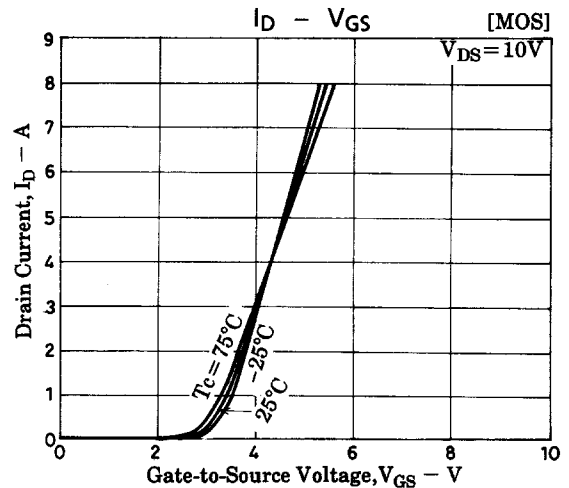
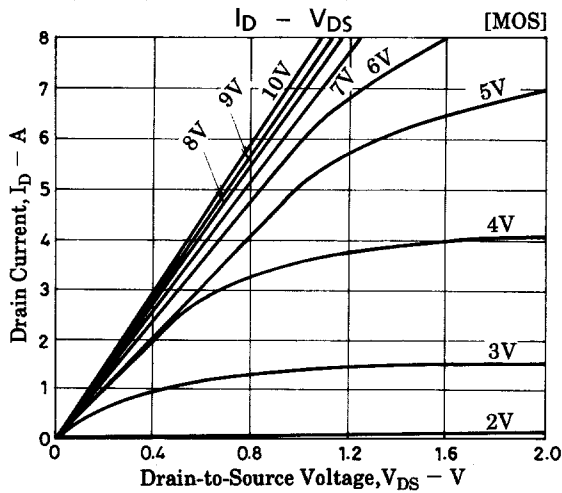


Electrical Connection

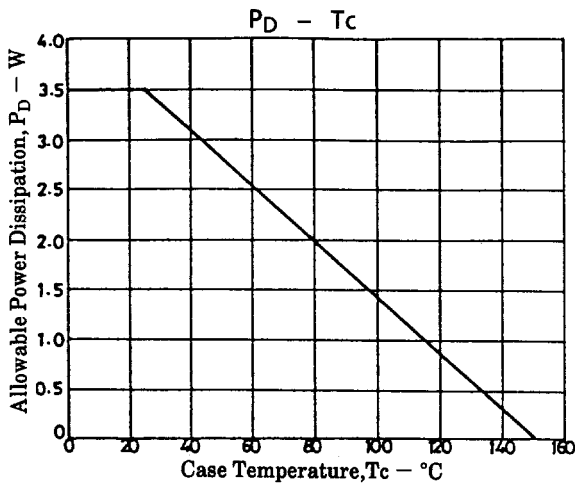
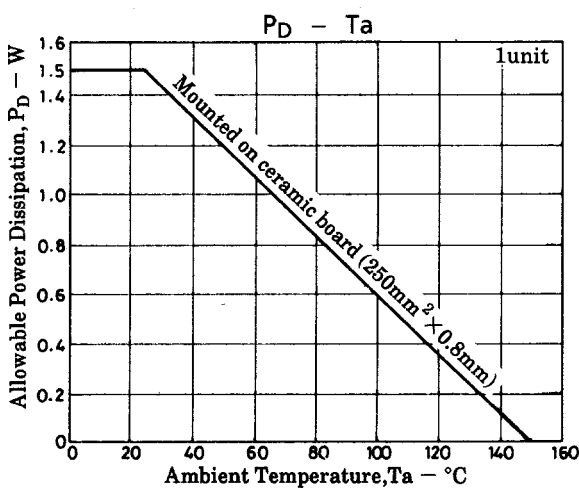
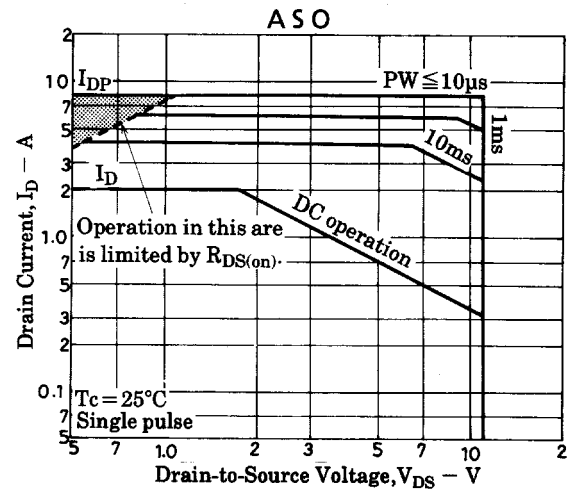
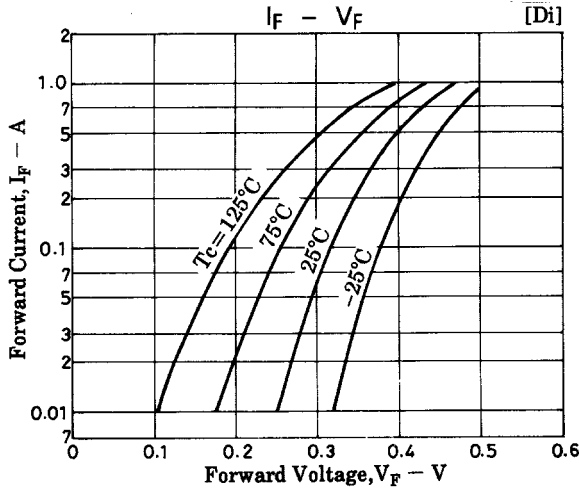
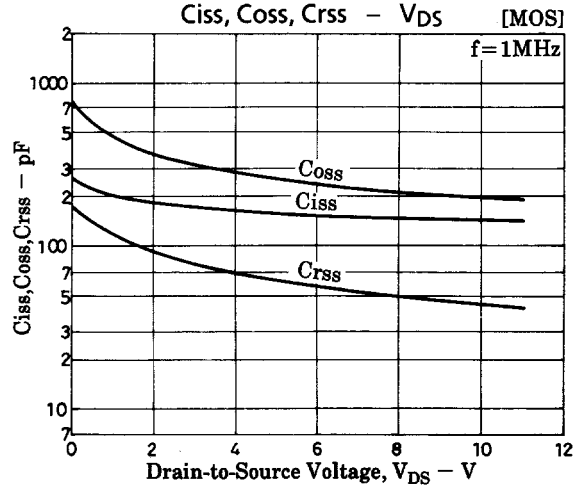
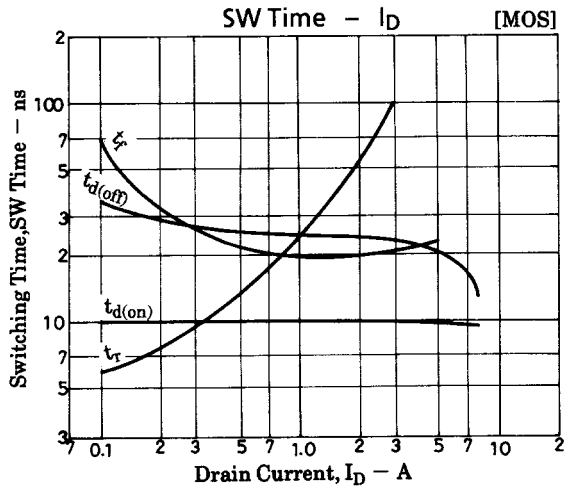
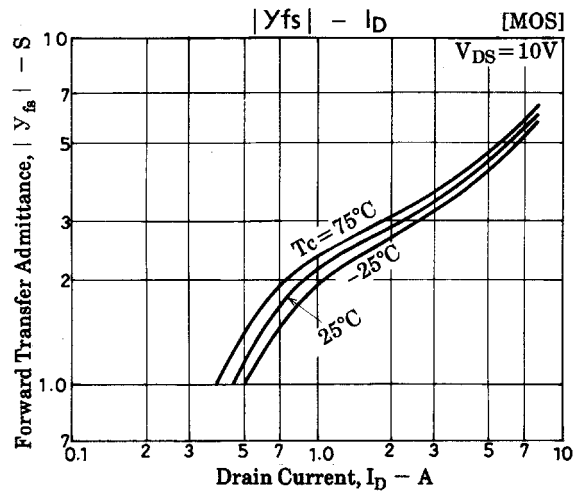
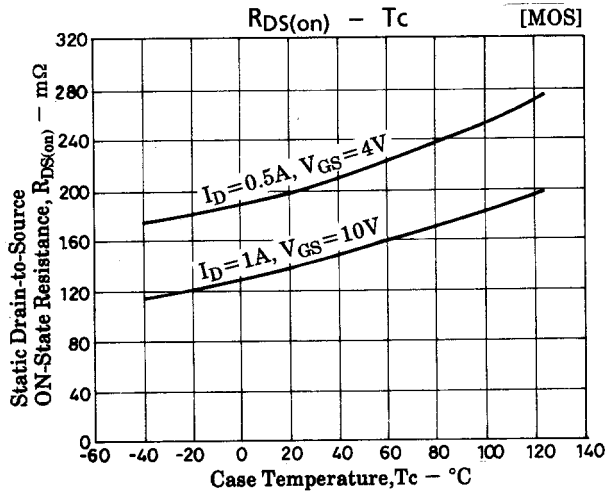


- 1:Source, Anode
- 2:Common (Drain, Cathode)
- 3:Source, Anode
- 4:Common (Drain, Cathode)
- 5:Gate
- 6:Common (Drain, Cathode)
- 7:Common (Drain, Cathode)

(Top view)



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