



# FSS250

## DC/DC Converter Applications

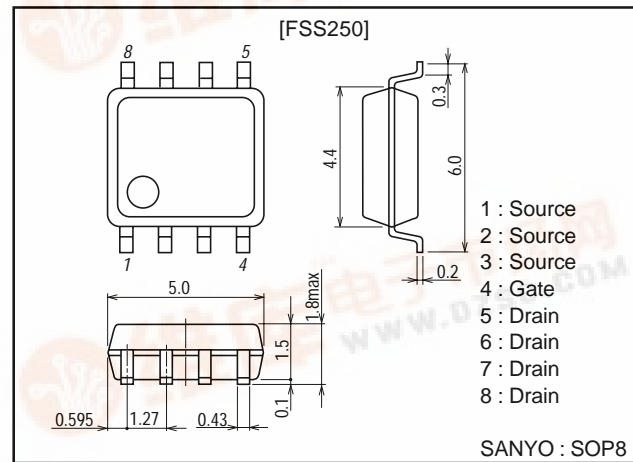
### Features

- Low ON resistance.
- 4V drive.
- Ultrahigh-speed switching.

### Package Dimensions

unit:mm

2116



### Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		30	V
Gate-to-Source Voltage	$V_{GS}$		±20	V
Drain Current (DC)	$I_D$		7	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	52	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm)	1.8	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.0		2.4	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=7A$	7	10		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=7A, V_{GS}=10V$		25	33	mΩ
	$R_{DS(on)2}$	$I_D=4A, V_{GS}=4.5V$		38	54	mΩ
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		530		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		170		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		90		pF

Marking : S250

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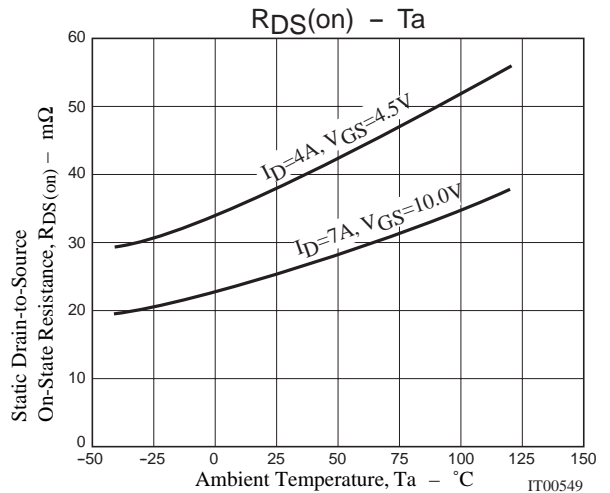
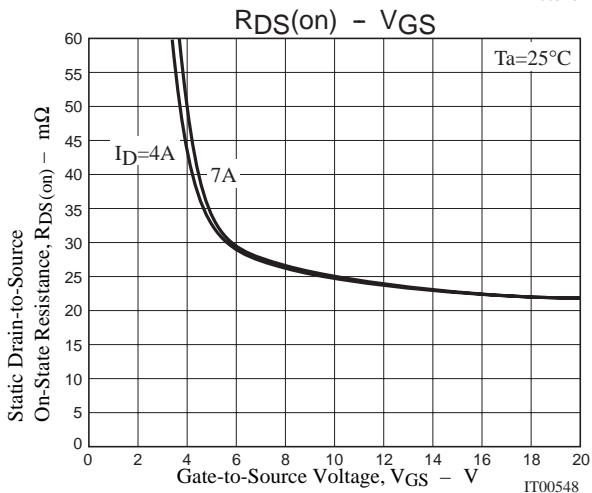
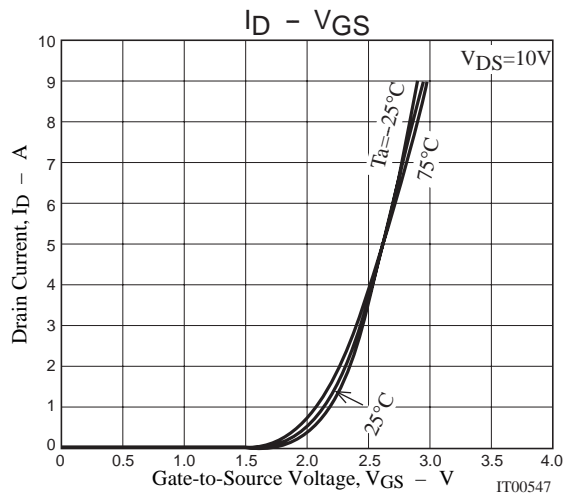
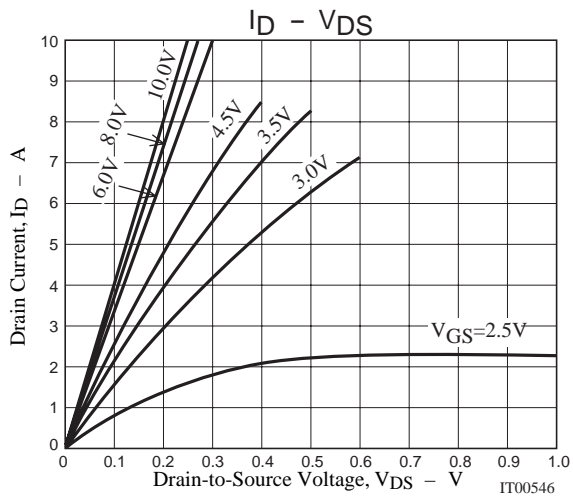
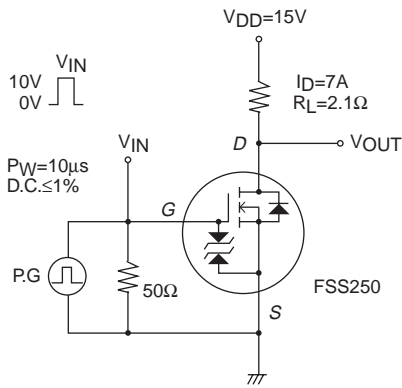


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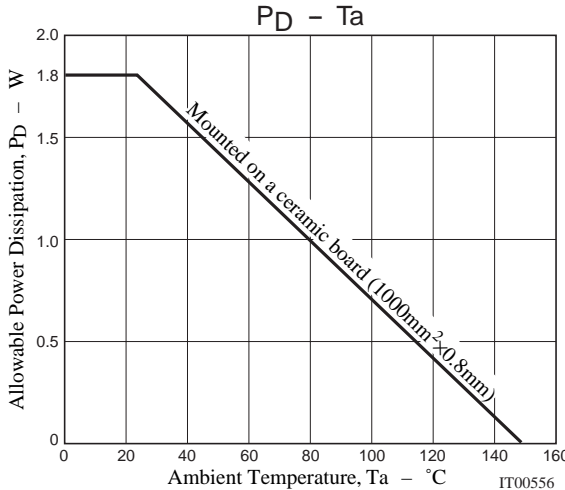
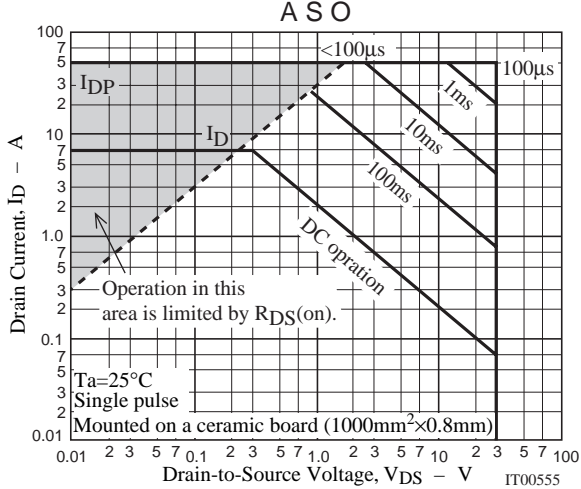
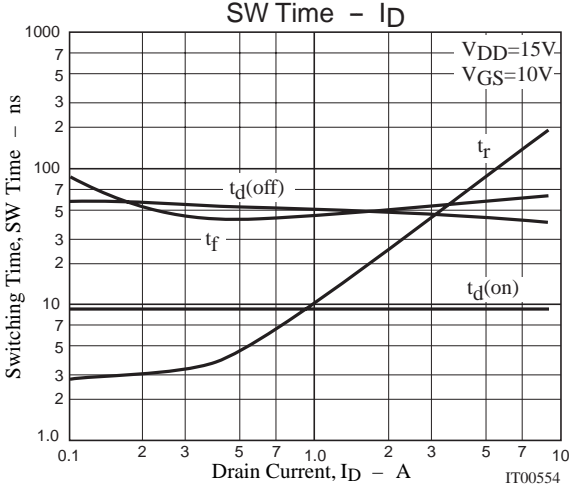
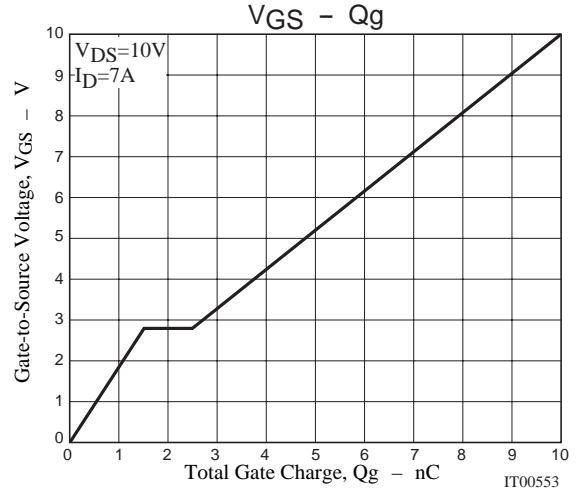
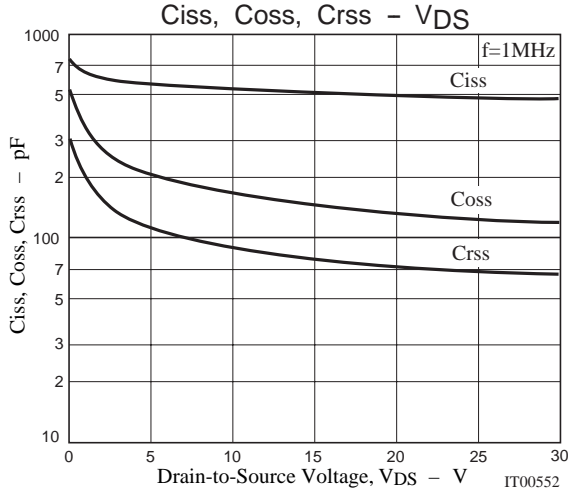
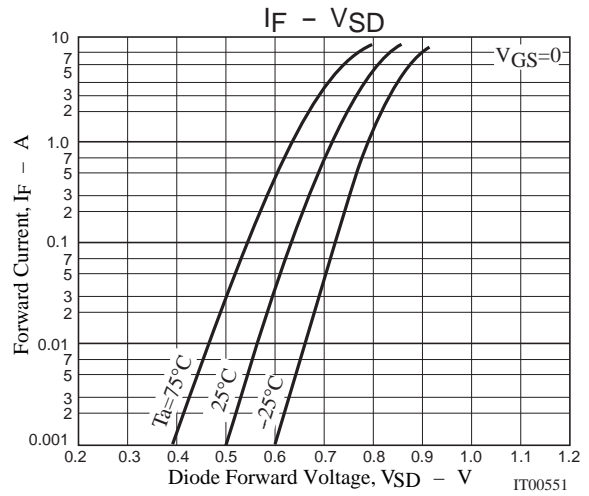
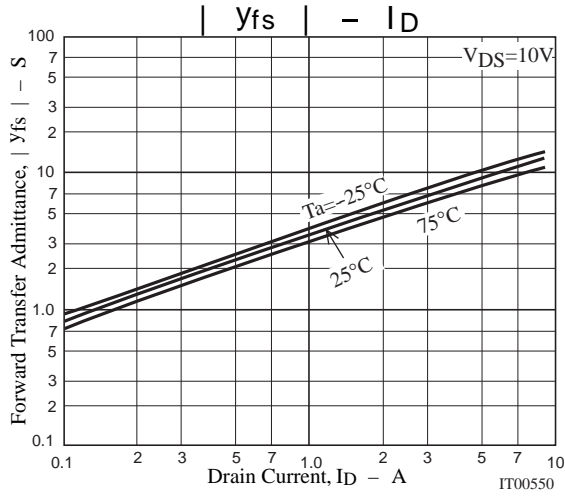
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		9		ns
Rise Time	$t_r$	See specified Test Circuit		130		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		40		ns
Fall Time	$t_f$	See specified Test Circuit		60		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=7A$		10		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=7A$		1.5		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=7A$		1.0		nC
Diode Forward Voltage	VSD	$I_S=7A, V_{GS}=0$		0.82	1.2	V

## Switching Time Test Circuit



# FSS250



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