



## DC-DC Converter Applications

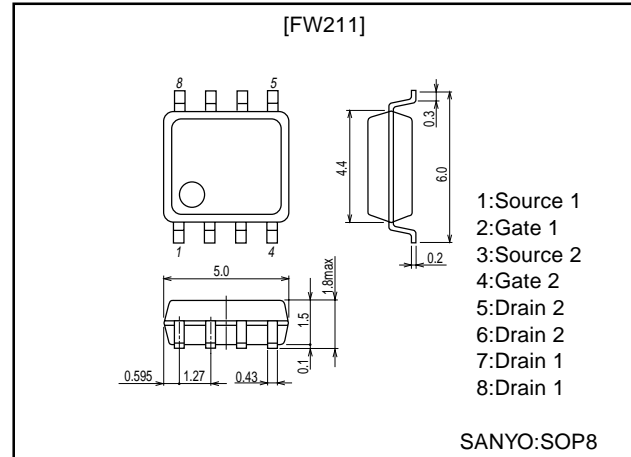
### Features

- Low ON resistance.
- 2.5V drive.

### Package Dimensions

unit:mm

2129



### Specifications

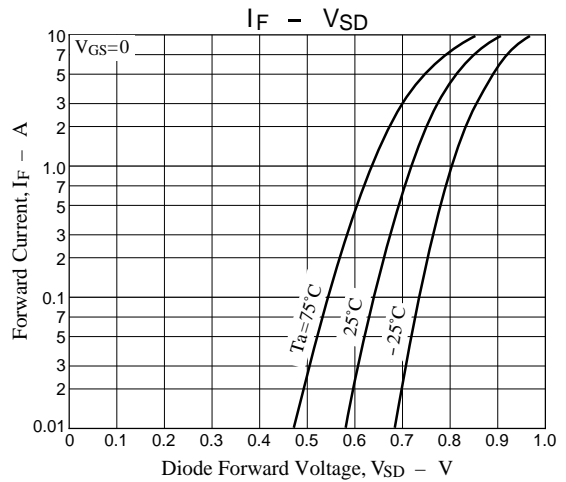
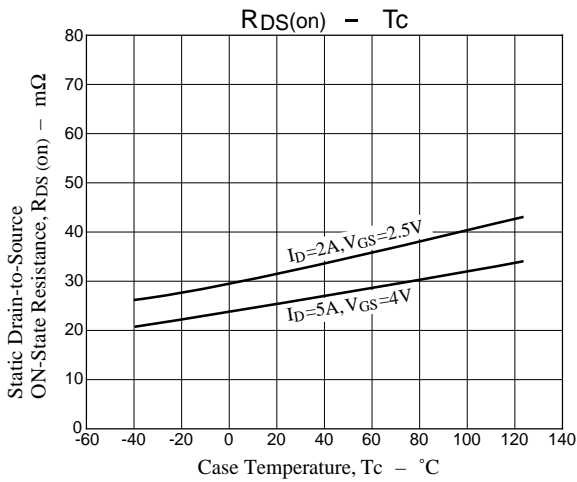
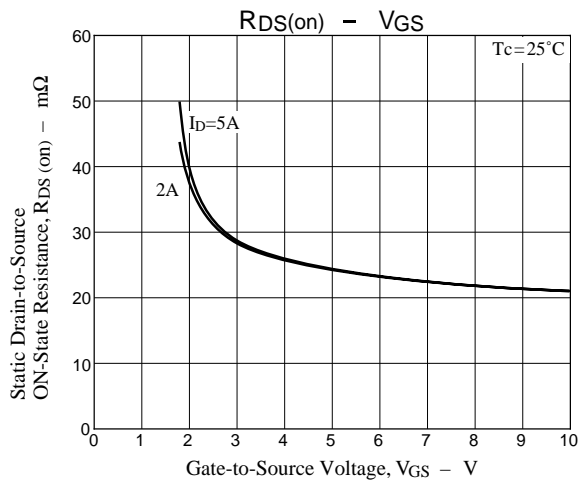
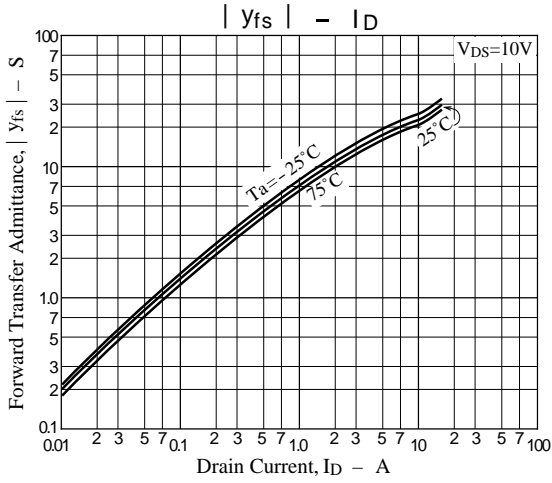
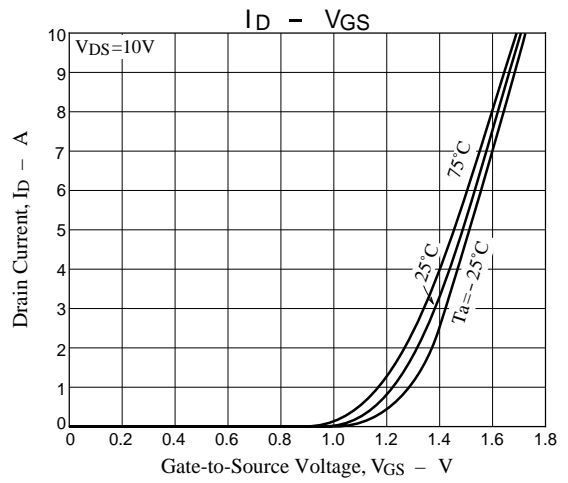
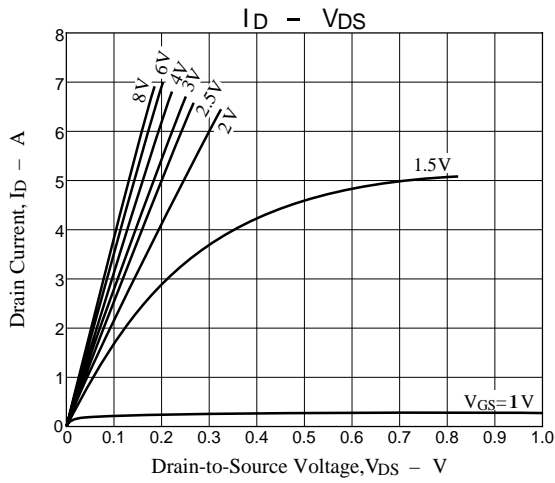
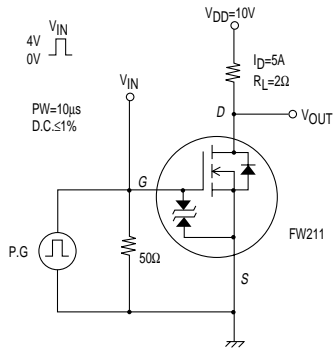
Absolute Maximum Ratings at Ta = 25°C

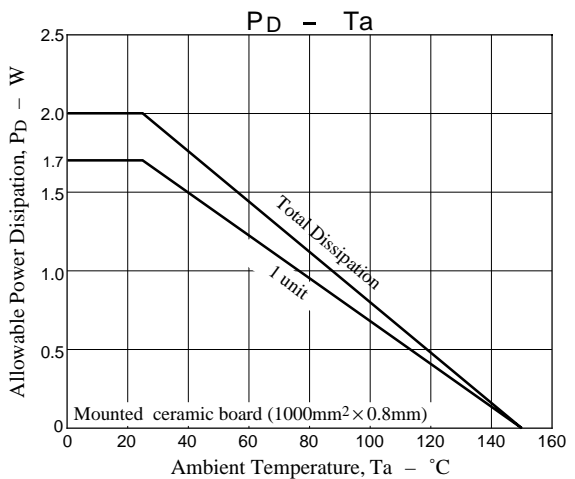
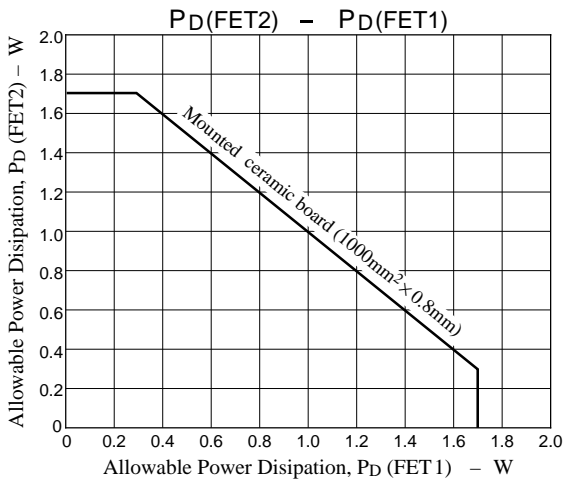
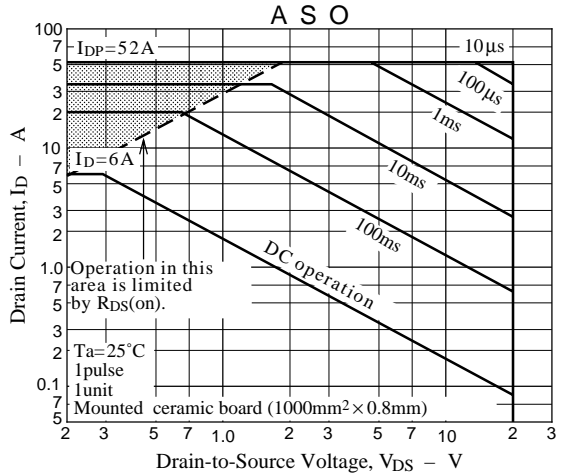
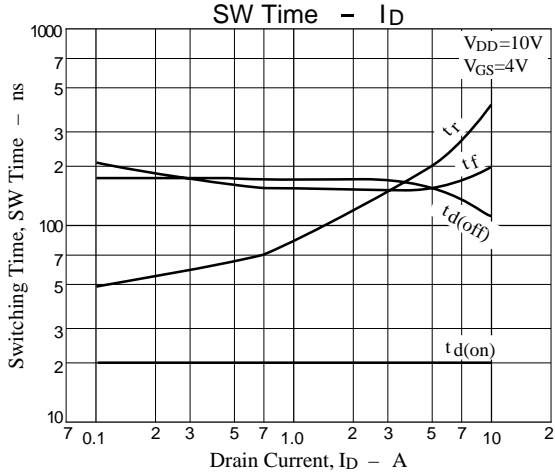
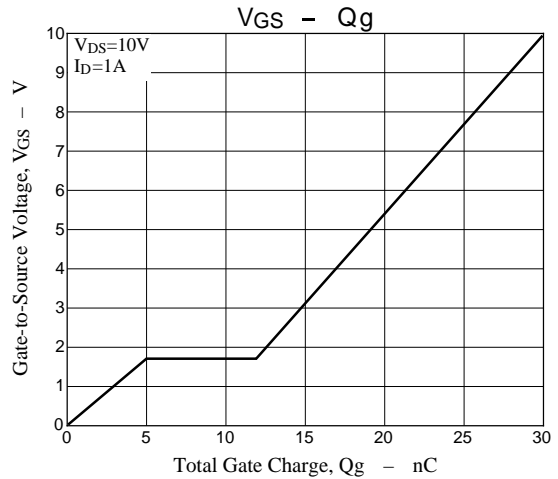
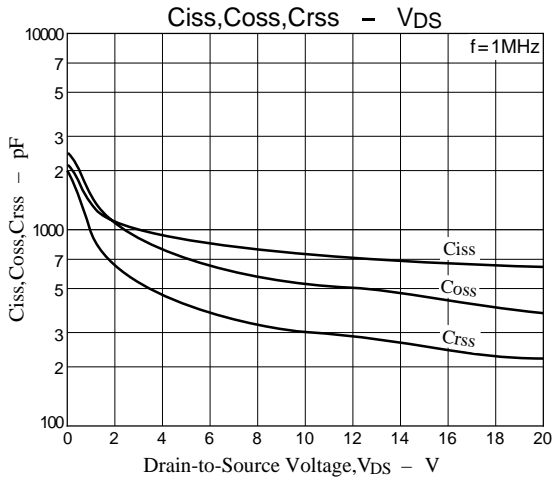
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		20	V
Gate-to-Source Voltage	$V_{GSS}$		±10	V
Drain Current (DC)	$I_D$		6	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	52	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm) 1unit	1.7	W
Total Dissipation	$P_T$	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm)	2.0	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	$V_{(BR)DSS}$	$I_D=1mA$ , $V_{GS}=0$	20			V	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V$ , $V_{GS}=0$			100	μA	
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8V$ , $V_{DS}=0$			±10	μA	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$ , $I_D=1mA$	0.4		1.3	V	
Forward Transfer Admittance	yfs	$V_{DS}=10V$ , $I_D=5A$		9	15	S	
Static Drain-to-Source ON-State Resistance	$R_{DS(on)1}$	$I_D=5A$ , $V_{GS}=4V$			27	35	mΩ
	$R_{DS(on)2}$	$I_D=2A$ , $V_{GS}=2.5V$			35	48	mΩ
Input Capacitance	Ciss	$V_{DS}=10V$ , f=1MHz			750	pF	
Output Capacitance	Coss	$V_{DS}=10V$ , f=1MHz			520	pF	
Reverse Transfer Capacitance	Crss	$V_{DS}=10V$ , f=1MHz			300	pF	
Turn-ON Delay Time	$t_{d(on)}$	See Specified Test Circuit			20	ns	
Rise Time	$t_r$	See Specified Test Circuit			200	ns	
Turn-OFF Delay Time	$t_{d(off)}$	See Specified Test Circuit			150	ns	
Fall Time	$t_f$	See Specified Test Circuit			150	ns	
Total Gate Charge	Qg	$V_{DS}=10V$ , $V_{GS}=10V$ , $I_D=1A$			30	nC	
Gate-to-Source Charge	Qgs				5	nC	
Gate-to-Drain "Miller" Charge	Qgd				7	nC	
Diode Forward Voltage	$V_{SD}$		$I_S=5A$ , $V_{GS}=0$	1.0	1.2	V	

Switching Time Test Circuit





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