



## Ultrahigh-Speed Switching Applications

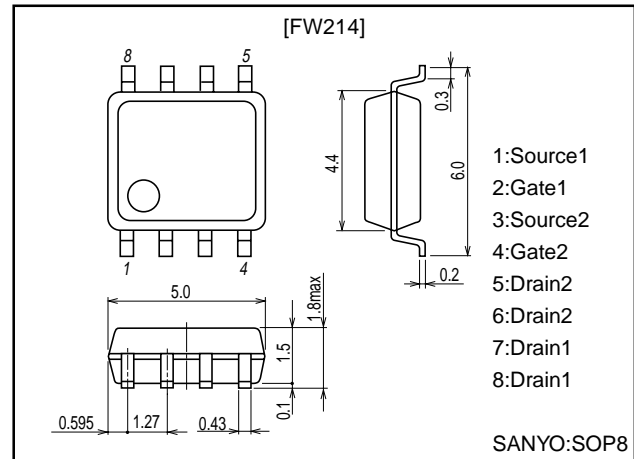
### Features

- 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	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		5	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	48	A
Allowable Power Dissipation	$P_D$	Mounted on ceramic board (1200mm $^2$ ×0.8mm) 1unit	1.7	W
Total Dissipation	$P_T$	Mounted on ceramic board (1200mm $^2$ ×0.8mm)	2.0	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

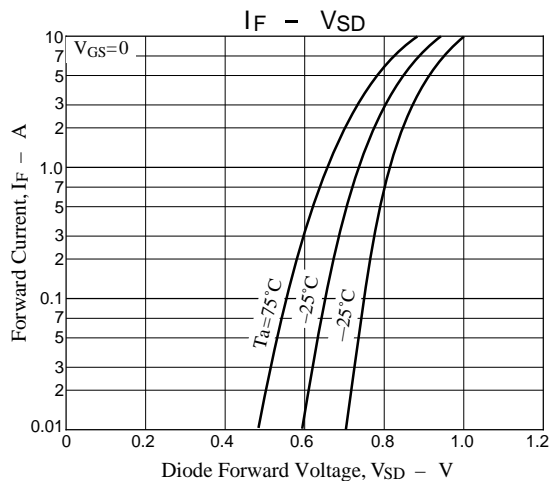
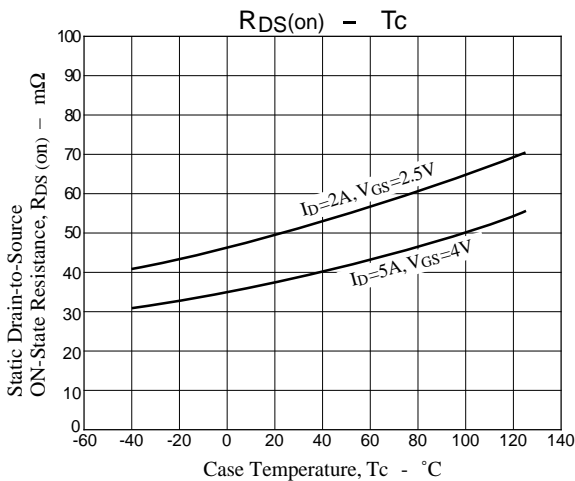
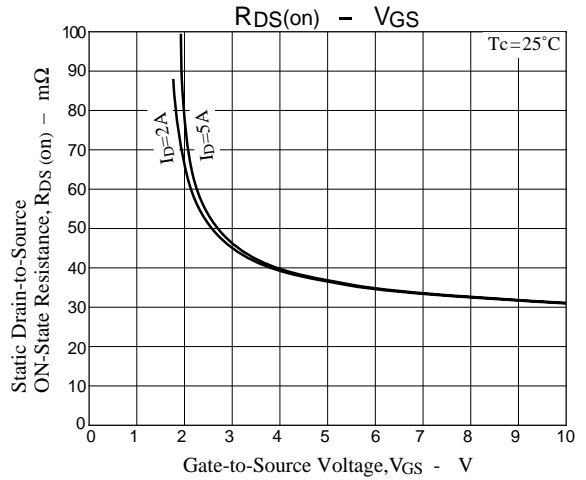
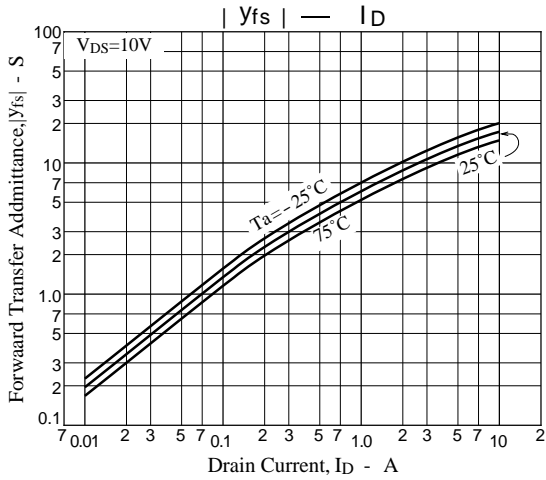
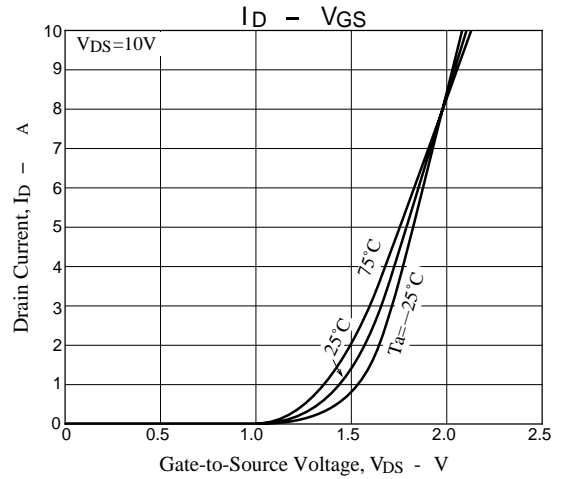
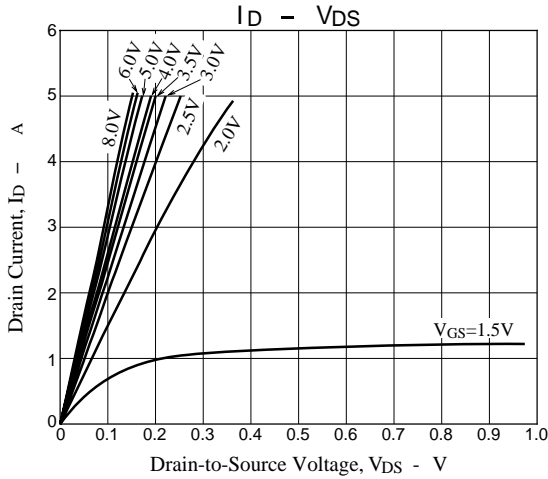
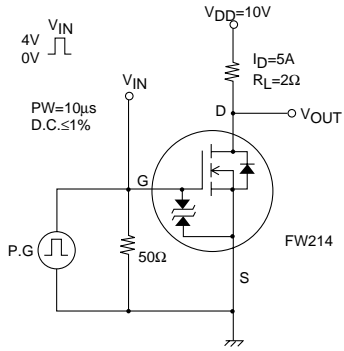
#### Electrical Characteristics at Ta = 25°C

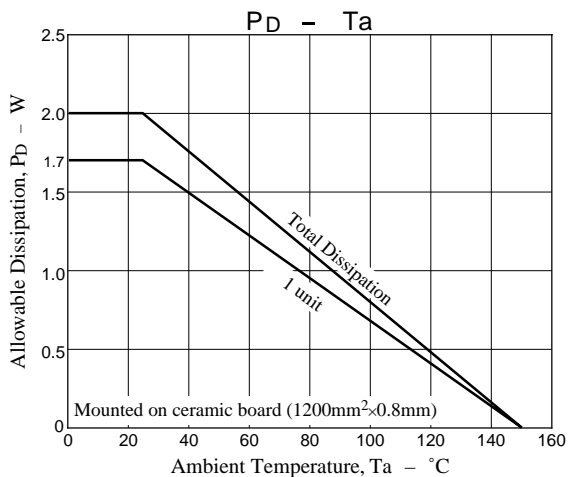
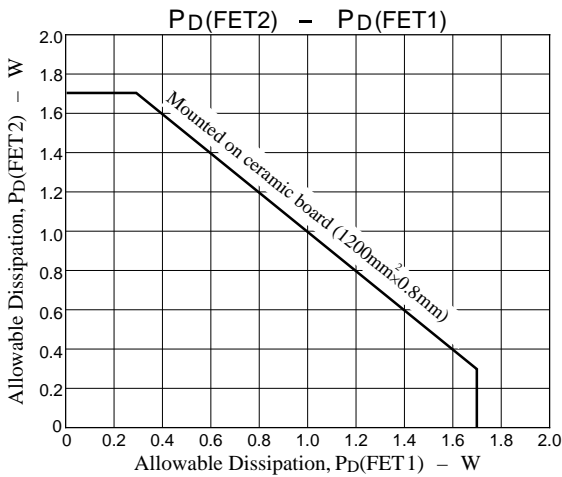
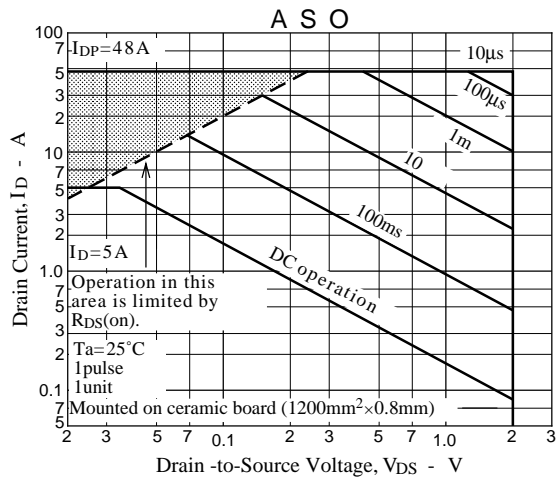
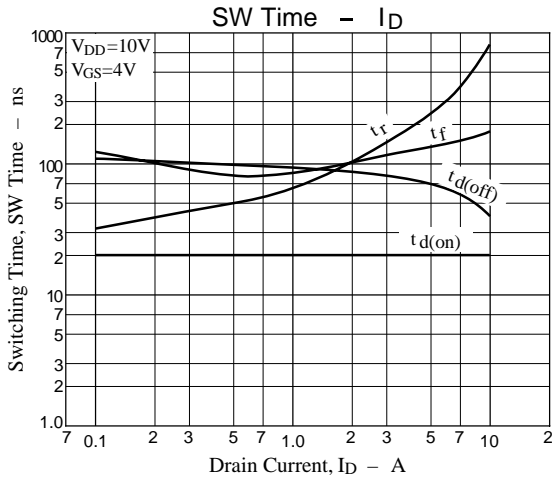
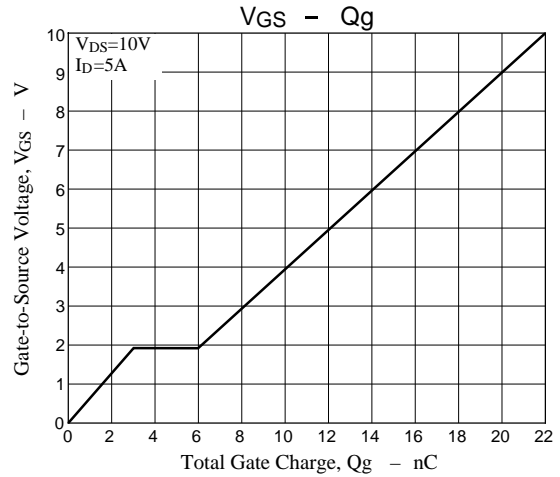
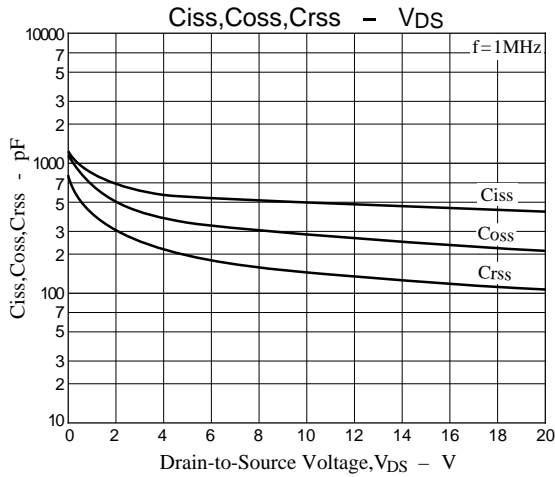
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA$ , $V_{GS}=0$	20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V$ , $V_{GS}=0$			100	$\mu A$
Gate-to-Source Leak Current	$I_{GSS}$	$V_{GS}=\pm 8V$ , $V_{DS}=0$			$\pm 10$	$\mu A$
Cutoff Current	$V_{GS(off)}$	$V_{DS}=10V$ , $I_D=1mA$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$ , $I_D=5A$	8	13		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)1}$	$I_D=5A$ , $V_{GS}=4V$		38	50	m $\Omega$
	$R_{DS(on)2}$	$I_D=2A$ , $V_{GS}=2.5V$		50	70	m $\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10V$ , $f=1MHz$		500		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10V$ , $f=1MHz$		280		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10V$ , $f=1MHz$		150		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		20		ns
Rise Time	$t_r$	See specified Test Circuit		250		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		70		ns
Fall Time	$t_f$	See specified Test Circuit		130		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V$ , $V_{GS}=10V$ , $I_D=5A$		22		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=10V$ , $V_{GS}=10V$ , $I_D=5A$		3		nC
Gate-to-Drain ("Miller") Charge	$Q_{gd}$	$V_{DS}=10V$ , $V_{GS}=10V$ , $I_D=5A$		3		nC
Diode Forward Voltage	$V_{SD}$	$I_S=5A$ , $V_{GS}=0$	1.0	1.2		V

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Switching Time Test Circuit





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