

**FW214**

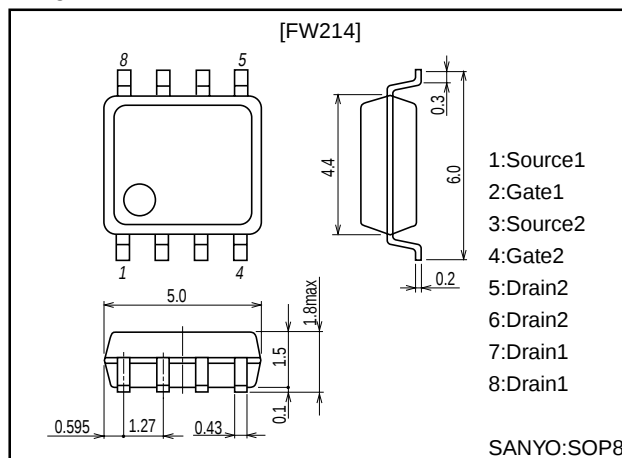
Ultrahigh-Speed Switching Applications

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}		±10	V
Drain Current (DC)	I_D		5	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤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	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

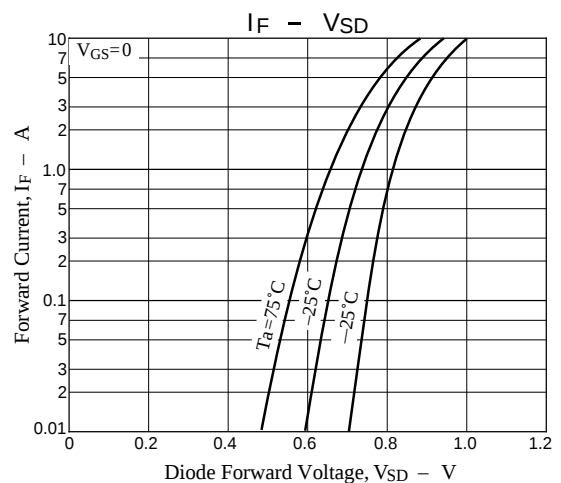
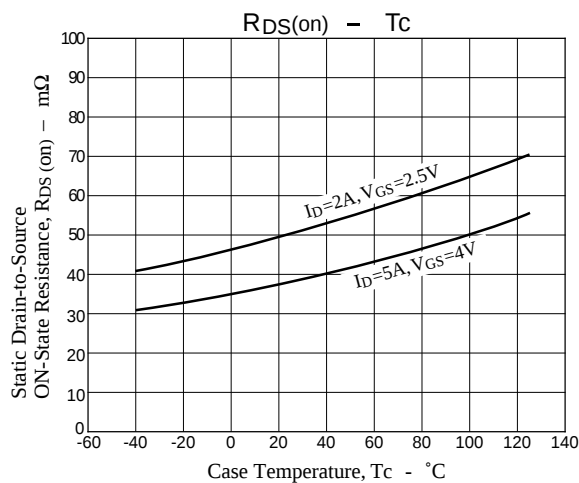
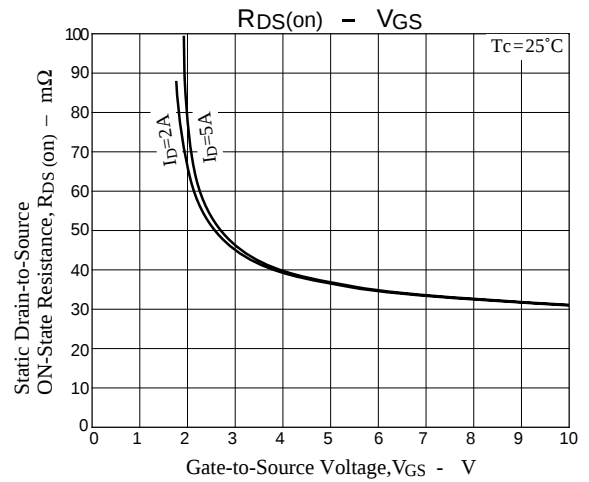
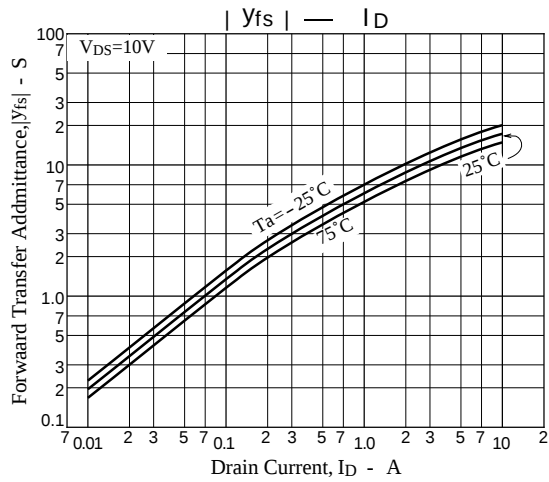
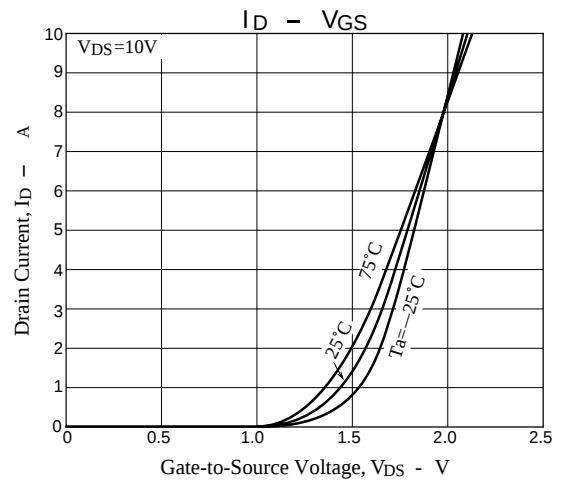
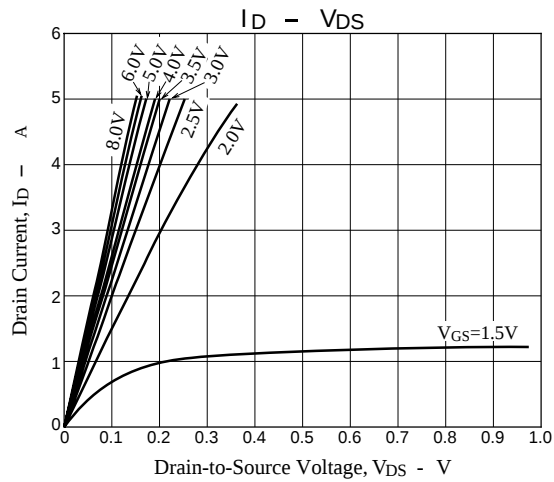
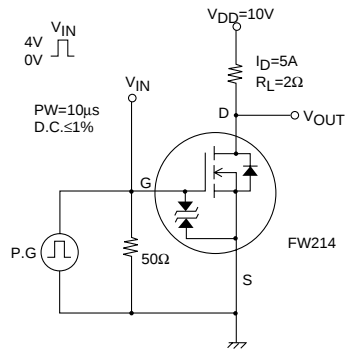
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0$			100	μA
Gate-to-Source Leak Current	I_{GSS}	$V_{GS}=±8V, V_{DS}=0$			±10	μA
Cutoff Current	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	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	mΩ
	$R_{DS(on)2}$	$I_D=2A, V_{GS}=2.5V$		50	70	mΩ
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		500		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		280		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		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	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		22		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		3		nC
Gate-to-Drain ("Miller") Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		3		nC
Diode Forward Voltage	V _{SD}	$I_S=5A, V_{GS}=0$		1.0	1.2	V

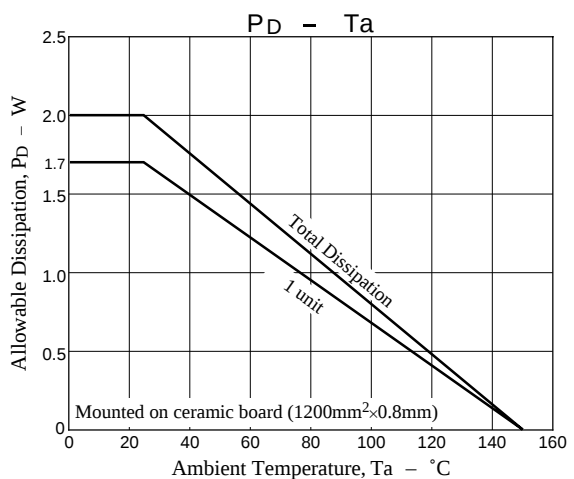
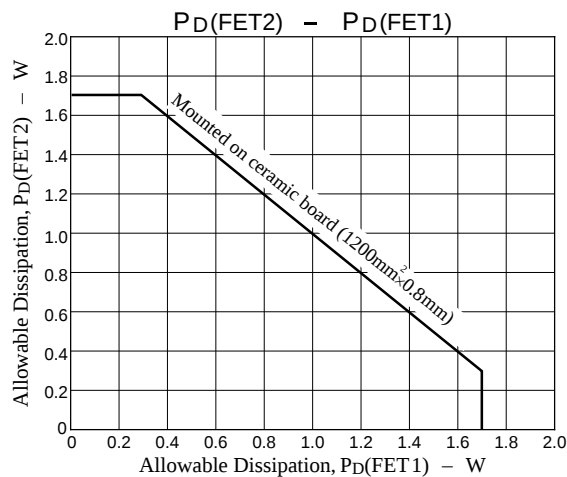
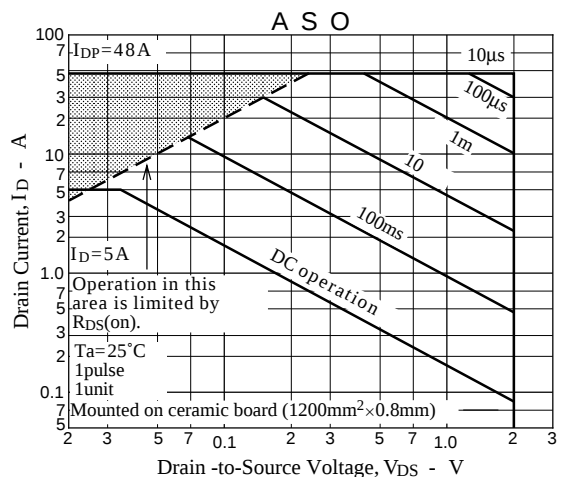
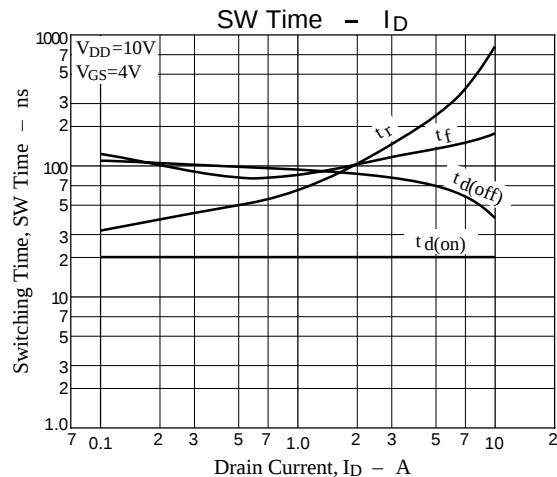
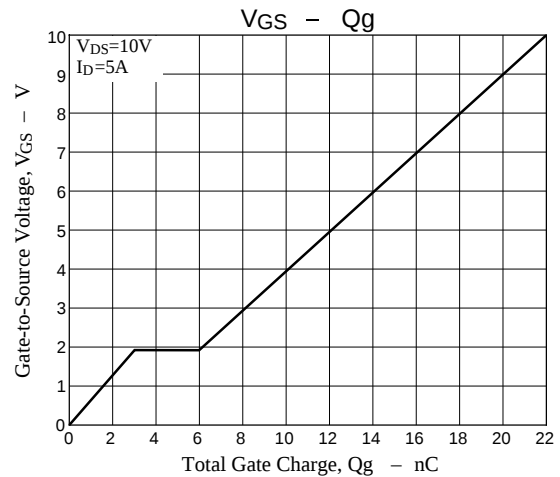
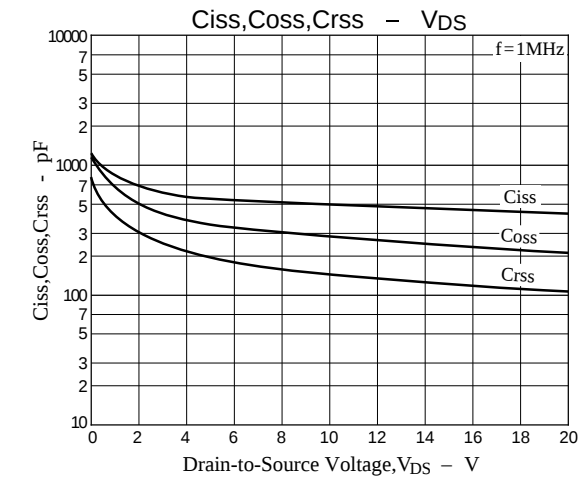
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Switching Time Test Circuit





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