

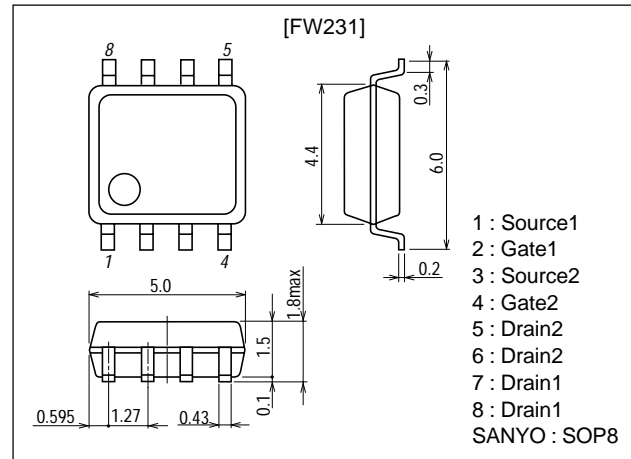
**FW231****Load Switching Applications****Features**

- 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		9	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	52	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm ² ×0.8mm) 1unit	1.7	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm 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	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=±8V, V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	0.4		1.3	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=9A$	16	24		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=9A, V_{GS}=4V$		15	20	mΩ
	$R_{DS(on)2}$	$I_D=2A, V_{GS}=2.5V$		20	27	mΩ

Marking : W231

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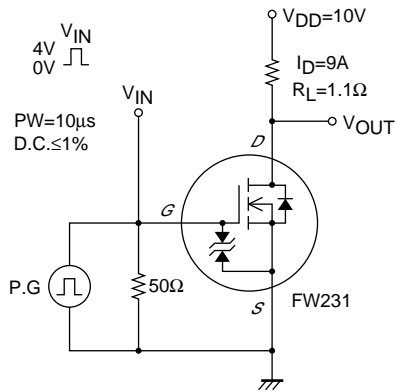
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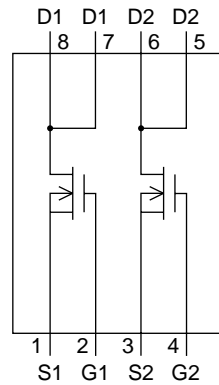
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		1950		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		550		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		370		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		24		ns
Rise Time	t_r	See specified Test Circuit		440		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		200		ns
Fall Time	t_f	See specified Test Circuit		300		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=9A$		60		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=9A$		2.8		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=9A$		10		nC
Diode Forward Voltage	V_{SD}	$I_S=9A, V_{GS}=0$	0.82	1.2		V

Switching Time Test Circuit

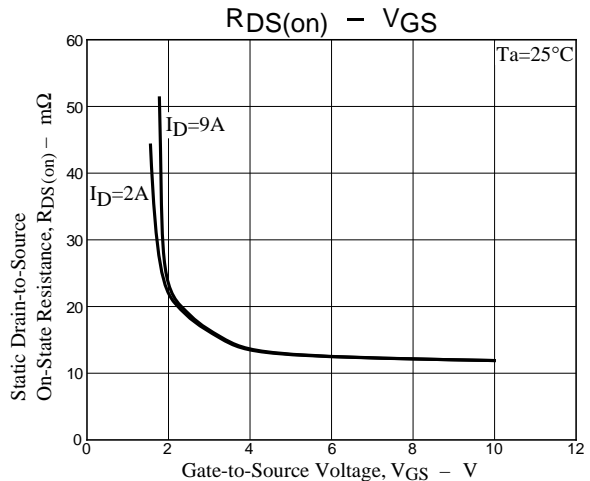
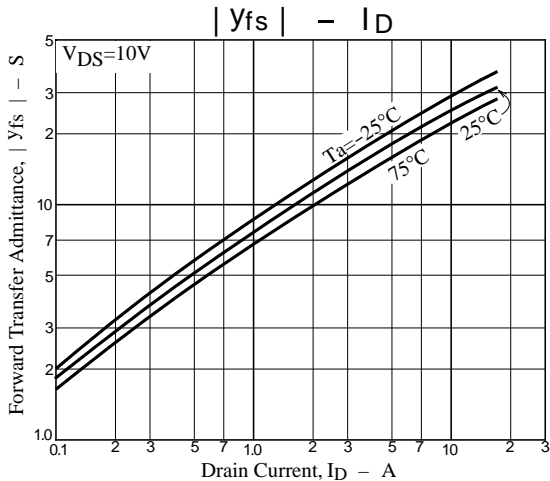
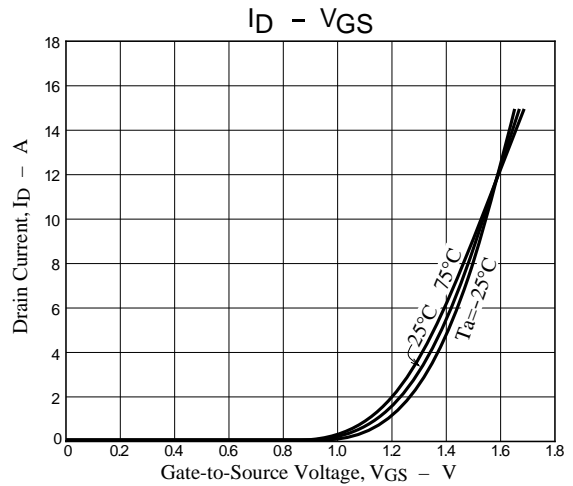
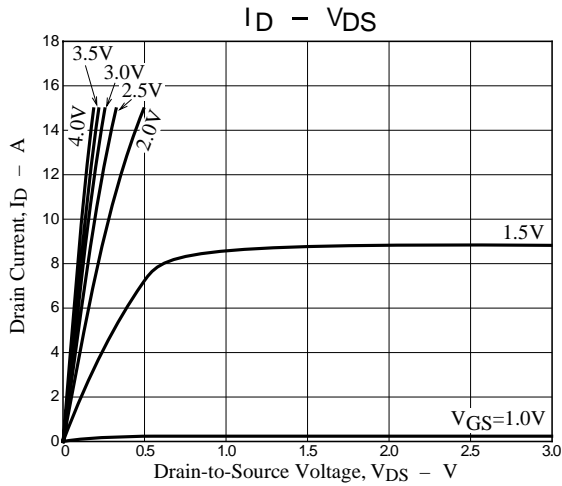


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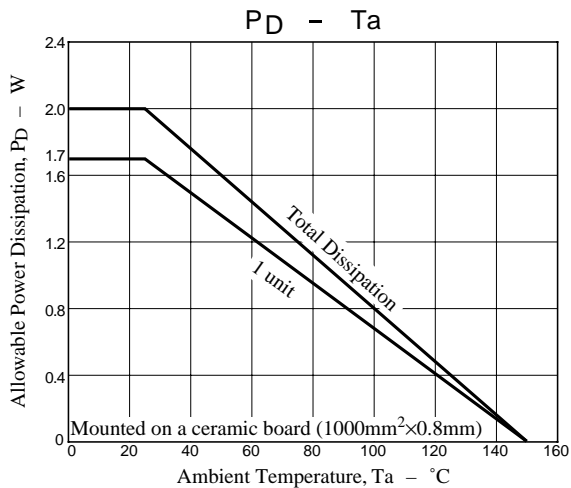
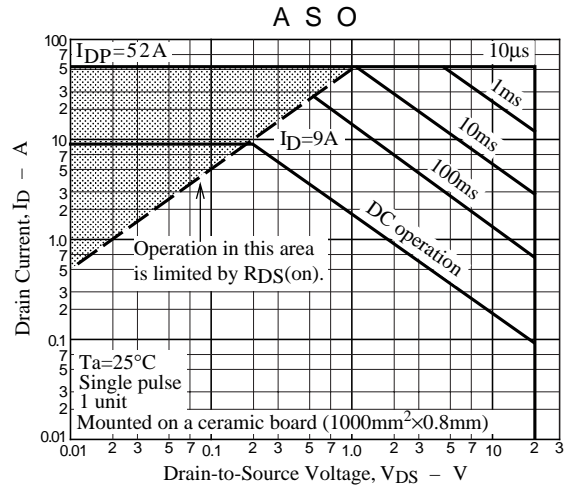
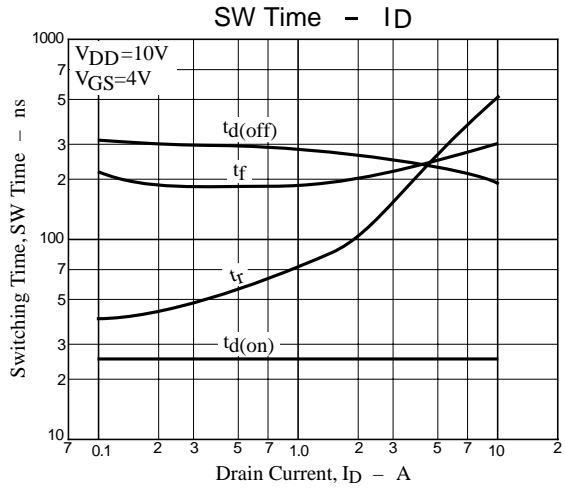
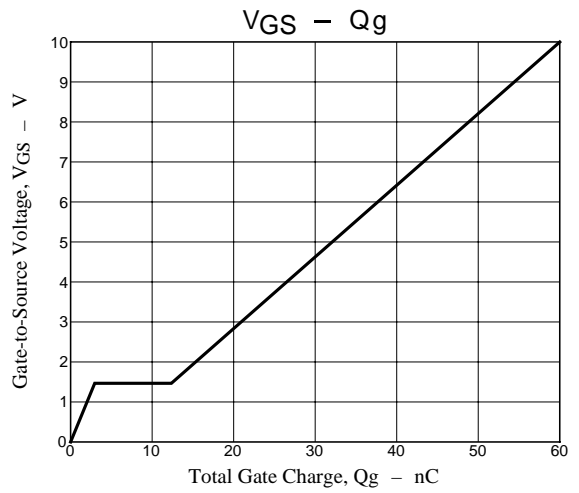
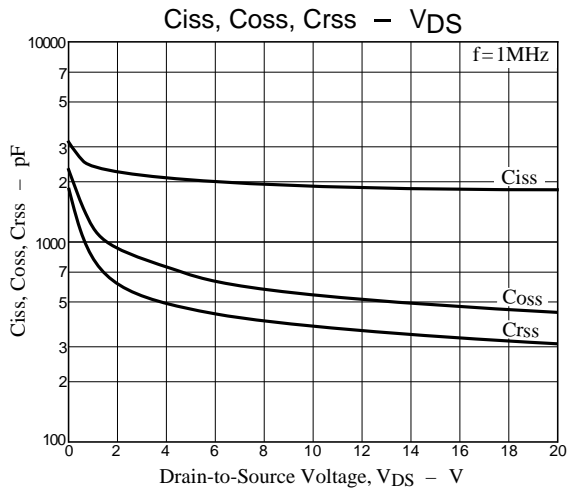
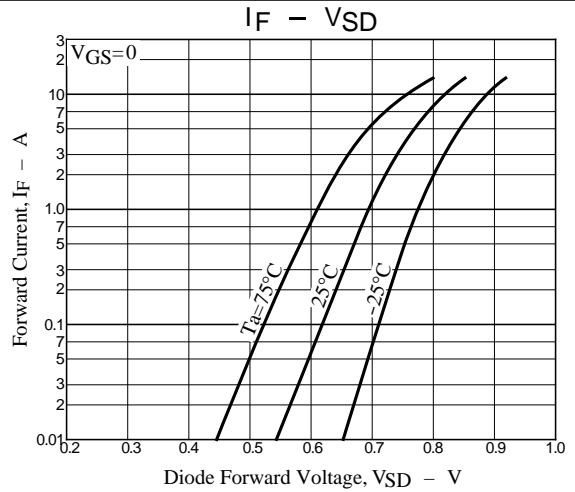
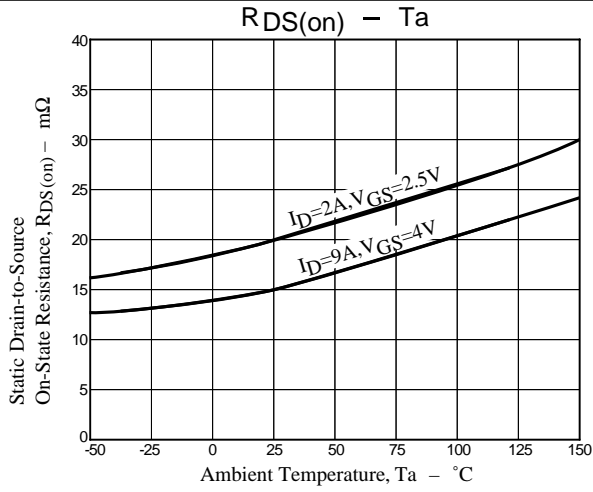
Electrical Connection



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