



**FW103**

**Ultrahigh-Speed Switching Applications**

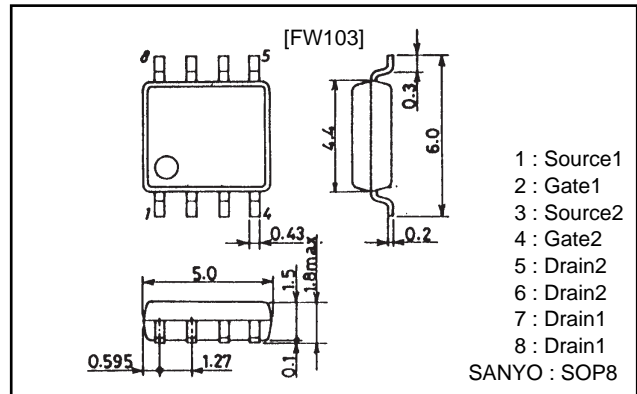
**Features**

- Low ON resistance
- Ultrahigh-speed switching.
- Composite type with two 4V-drive P-channel MOSFETs facilitating high-density mounting.
- Matched pair capability.

**Package Dimensions**

unit: mm

**2129-SOP8**



**Specifications**

**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-3	A
Drain Current (pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-32	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm) 1 unit	1.7	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm)	2.0	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage temperature	T <sub>stg</sub>		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-30			V
Zero-Gate-Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-100	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.0		-2.5	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-3A	2	4		S
Static Drain-to-Source ON-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =-3A, V <sub>GS</sub> =-10V		95	125	mΩ
ON-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =-3A, V <sub>GS</sub> =-4V		150	205	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		550		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		370		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		70		pF

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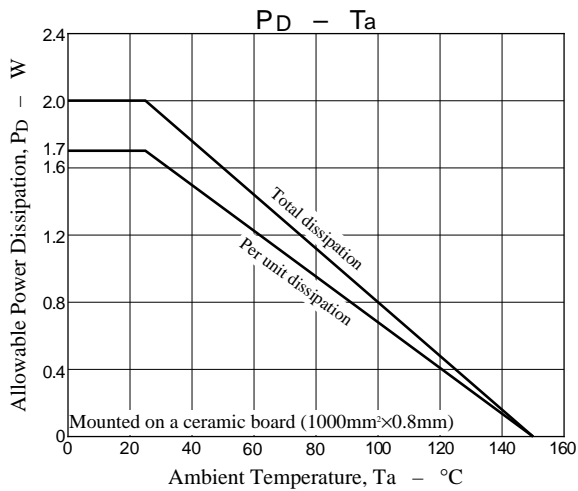
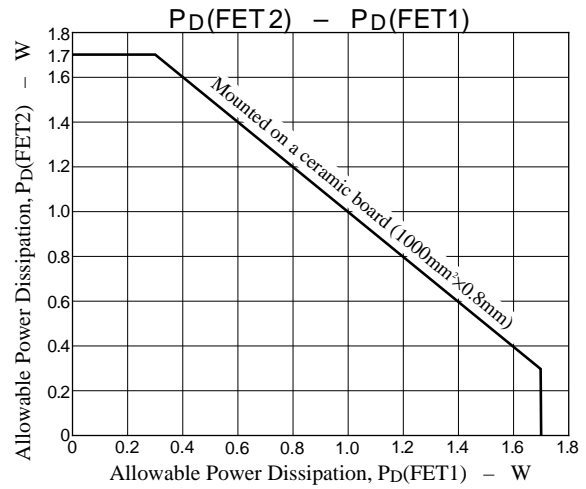
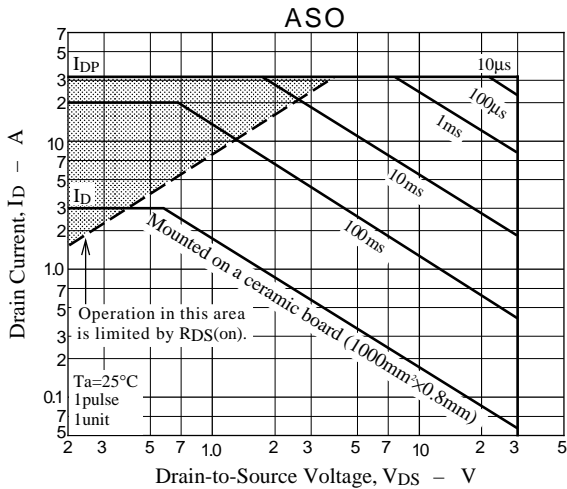
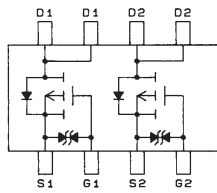
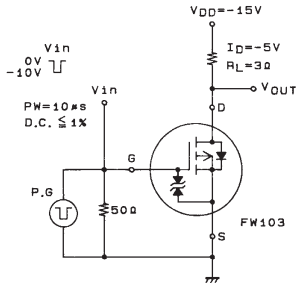
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		20		ns
Rise Time	$t_r$	"		110		ns
Turn-OFF Delay Time	$t_{d(off)}$	"		330		ns
Fall Time	$t_f$	"		170		ns
Diode Forward Voltage	$V_{SD}$	$I_S = -3A, V_{GS} = 0$	-1.0	-1.2		V

**Switching Time Test Circuit**

**Electrical Connection**

(Top view)



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