



# **Ultrahigh-Speed Switching Applications**

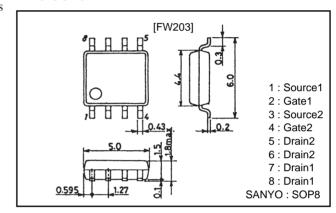
#### **Features**

- Low ON resistance
- Ultrahigh-speed switching.
- Composite type with two 4V-drive N-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	VDSS		30	V
Gate-to-Source Voltage	VGSS		±20	V
Drain Current (DC)	ID		5	Α
Drain Current (pulse)	IDP	PW≤10µs, duty cycle≤1%	48	Α
Allowable Power Dissipation	PD	Mounted on a ceramic board (1000mm <sup>2</sup> ×0.8mm) 1unit	1.7	W
Total Dissipation	PT	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	Uill
D-S Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>G</sub> S=0	30			V
Zero-Gate-Voltage Drain Current	IDSS	V <sub>DS</sub> =30V, V <sub>GS</sub> =0			100	μA
Gate-to-Source Leakage Current	IGSS	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μΑ
Cutoff Voltage	VGS(off)	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.0		2.5	V
Forward Transfer Admittance	lyfs	V <sub>DS</sub> =10V, I <sub>D</sub> =5A	5	8		S
Static Drain-to-Source	R <sub>DS(on)</sub>	I <sub>D</sub> =5A, V <sub>GS</sub> =10V		36	46	mΩ
ON-State Resistance	RDS(on)	I <sub>D</sub> =5A, V <sub>G</sub> S=4V		58	78	mΩ
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		550		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		330		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		120		pF

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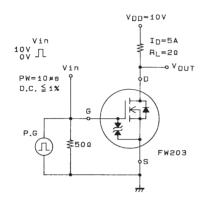
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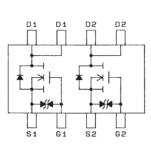
Parameter	Symbol	Conditions	Ratings			- Unit
	Symbol		min	typ	max	
Turn-ON Delay Time	td(on)	See specified Test Circuit.		15		ns
Rise Time	t <sub>r</sub>	"		200		ns
Turn-OFF Delay Time	td(off)	"		150		ns
Fall Time	tf	"		160		ns
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =5A, V <sub>GS</sub> =0		1.0	1.2	V

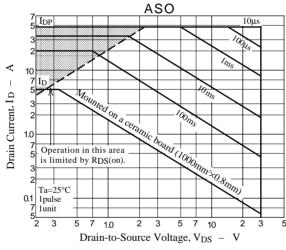
# **Switching Time Test Circuit**

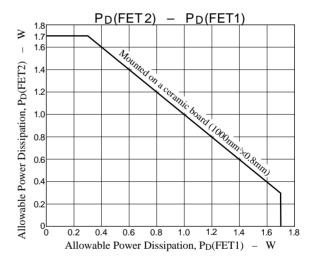
### **Electrical Connection**

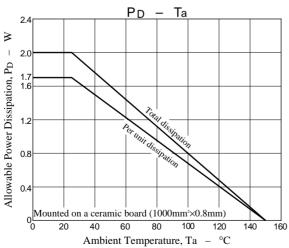
(Top view)











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