



# **Ultrahigh-Speed Switching Applications**

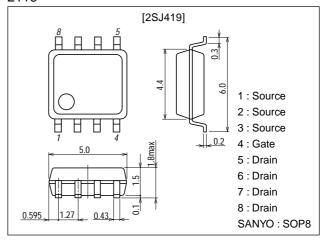
## **Features**

- · Low ON-resistance.
- · Ultrahigh-speed switching.
- · 2.5V drive.

## **Package Dimensions**

unit:mm

2116



# **Specifications**

## Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-12	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-4	Α
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-32	Α
Allowable Power Dissipation	PD	Mounted on ceramic board (1200mm <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	O III
Drain-to-Source Breakdown Voltage	V(BR)DSS	$I_D=-1$ mA, $V_{GS}=0$	-12			V
Zero-Gate Voltage Drain Current	IDSS	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0			-100	μA
Gate-to-Source Leakage Current	IGSS	$V_{GS}=\pm 8V$ , $V_{DS}=0$			±10	μΑ
Cutoff Voltage	V <sub>GS(off)</sub>	$V_{DS}=-6V$ , $I_{D}=-1mA$	-0.4		-1.4	V
Forward Transfer Admittance	yfs	V <sub>DS</sub> =-6V, I <sub>D</sub> =-4A	6	8		S
Static Drain-to-Source ON-State Resistance	R <sub>DS(on)</sub> 1	I <sub>D</sub> =-4A, V <sub>GS</sub> =-4V		65	82	mΩ
	R <sub>DS(on)</sub> 2	I <sub>D</sub> =-2A, V <sub>GS</sub> =-2.5V		90	144	mΩ

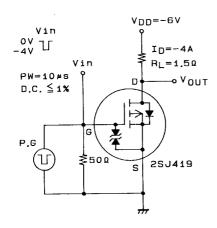
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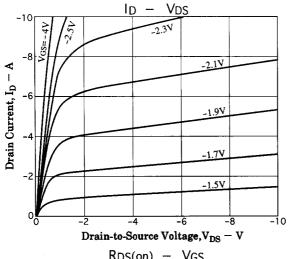
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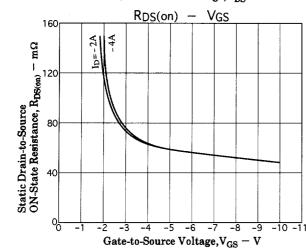
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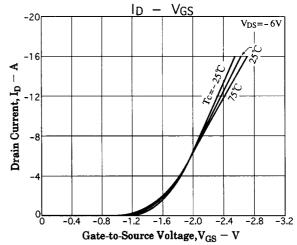
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Onit
Input Capacitance	Ciss	V <sub>DS</sub> =-6V, f=1MHz		1000		pF
Output Capacitance	Coss	V <sub>DS</sub> =-6V, f=1MHz		800		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-6V, f=1MHz		420		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		25		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		170		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit		180		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		270		ns
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-4A, V <sub>GS</sub> =0		-1.0	-1.2	V

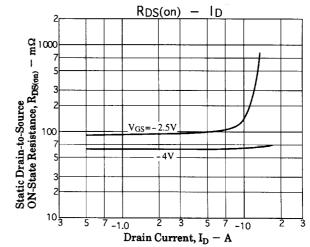
# **Switching Time Test Circuit**

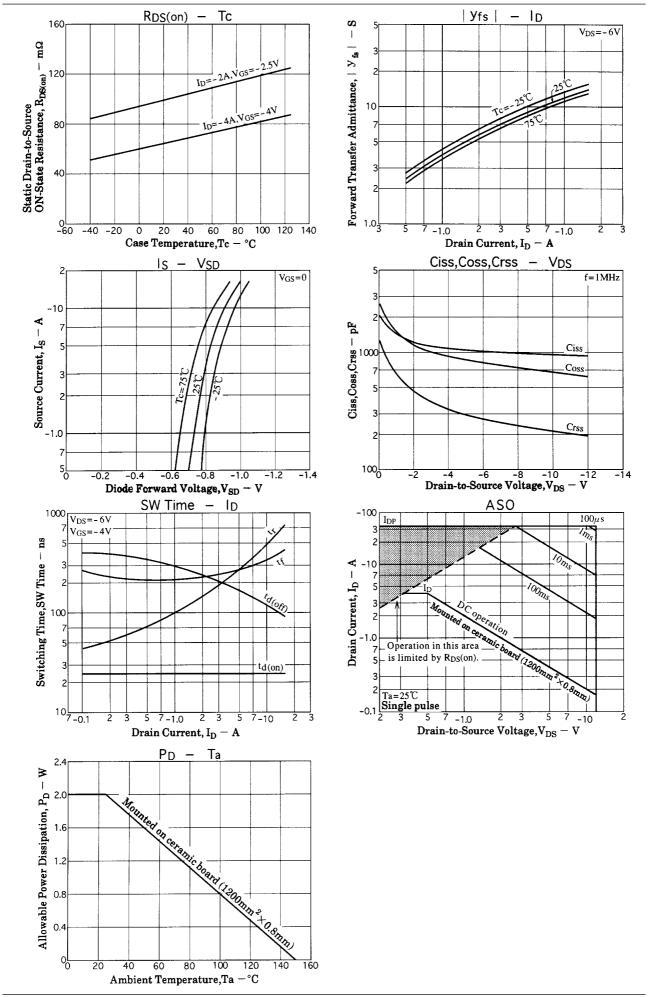












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