

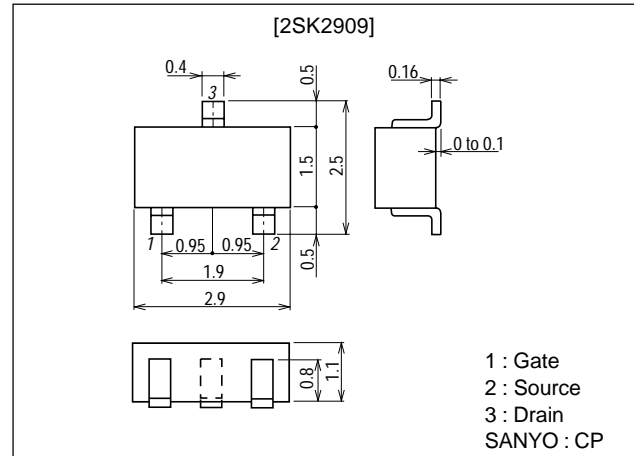
**2SK2909****Ultrahigh-Speed Switching Applications****Features**

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

**Package Dimensions**

unit:mm

2091A

**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)	$I_D$		0.8	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10 \mu s$ , duty cycle $\leq 1\%$	3.2	A
Allowable Power Dissipation	$P_D$		0.25	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-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	$I_{DSS}$	$V_{DS}=20V$ , $V_{GS}=0$			10	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8V$ , $V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$ , $I_D=1mA$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$ , $I_D=400mA$	1.4	2		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=400mA$ , $V_{GS}=4V$		200	300	mΩ
	$R_{DS(on)2}$	$I_D=100mA$ , $V_{GS}=2.5V$		300	480	mΩ

Marking : DK

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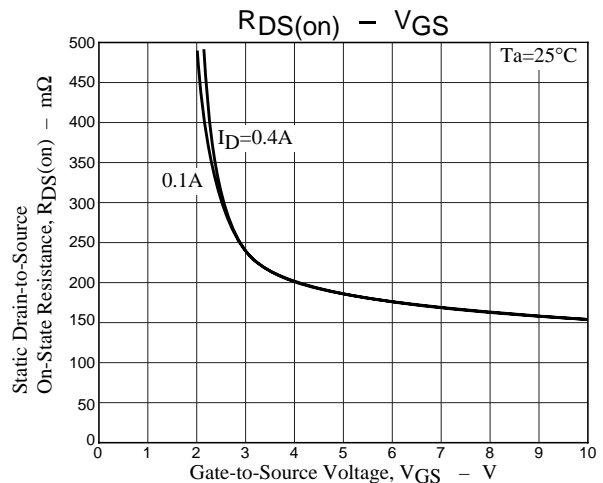
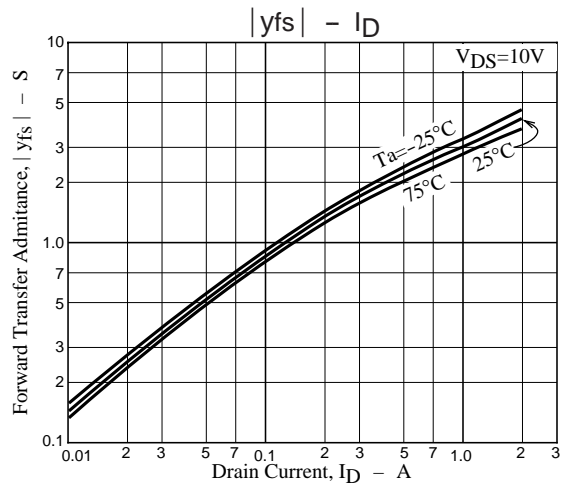
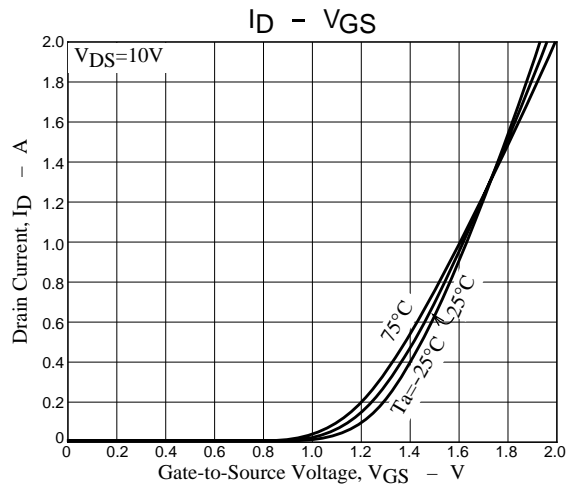
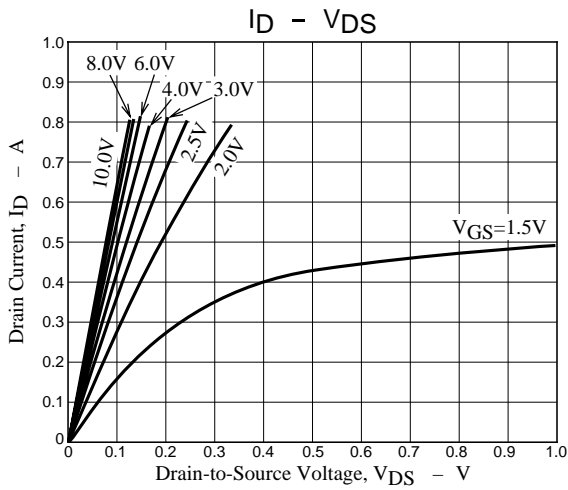
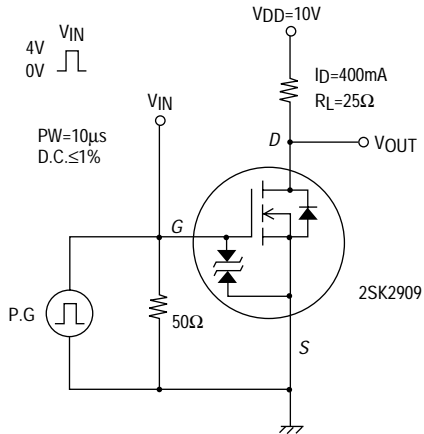
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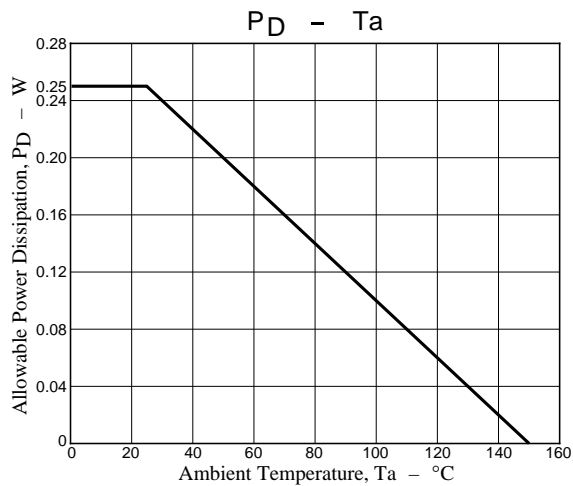
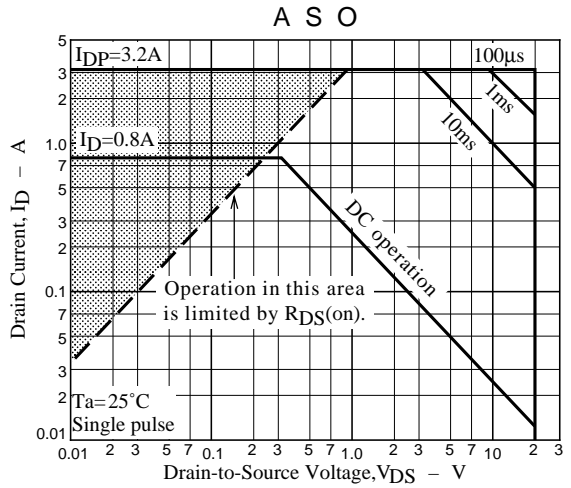
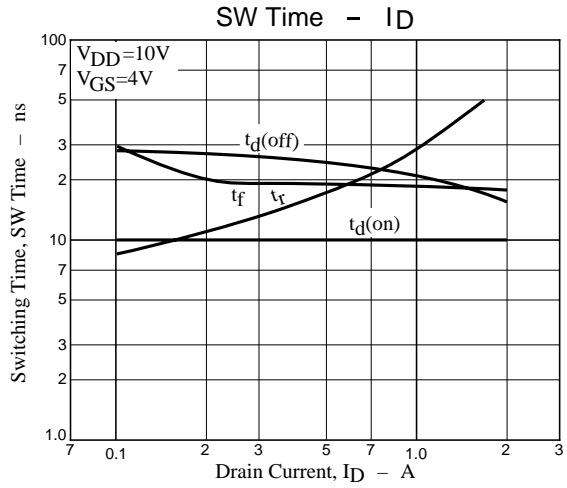
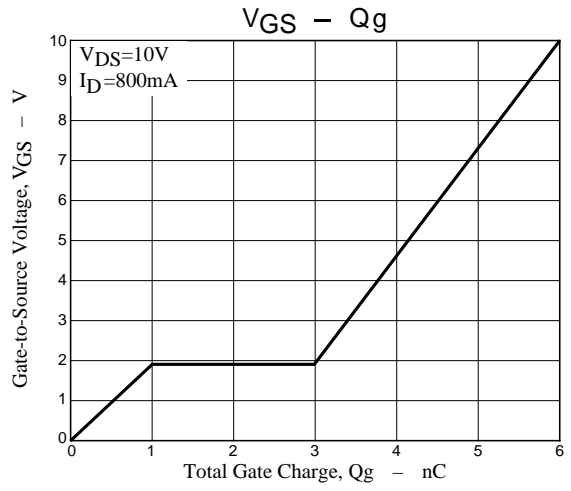
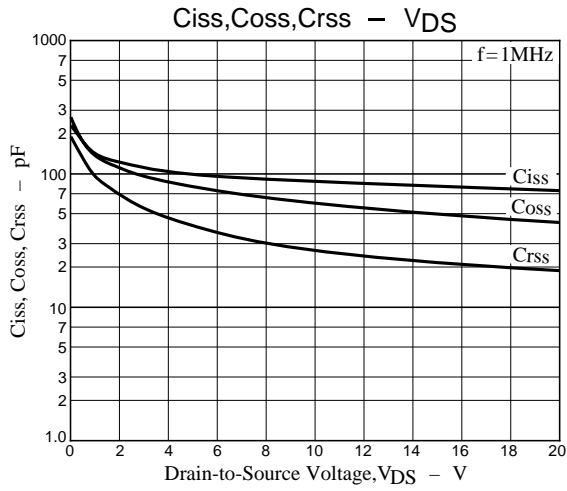
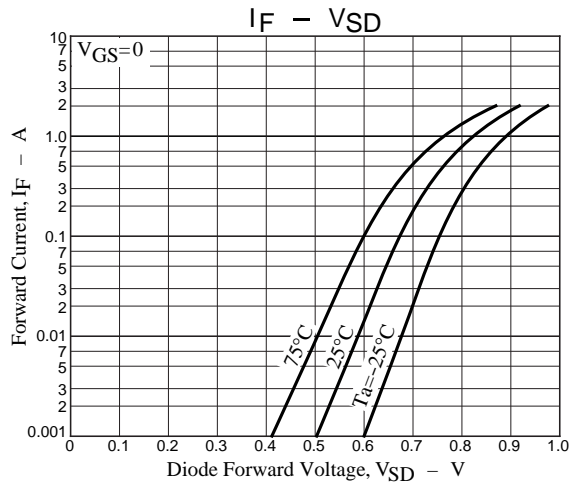
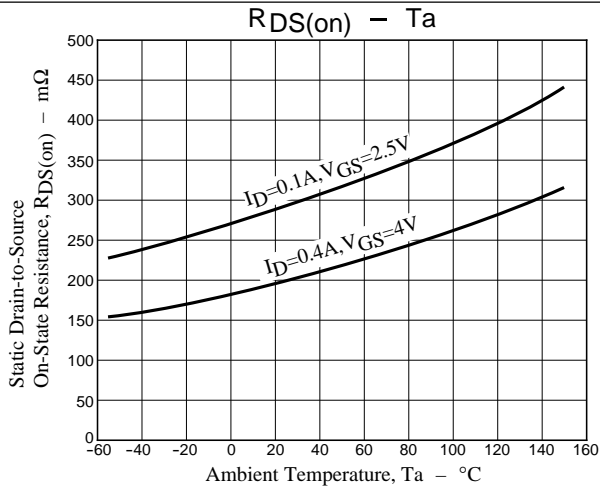
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		90		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10V, f=1MHz$		60		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10V, f=1MHz$		28		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	$t_r$	See specified Test Circuit		15		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		25		ns
Fall Time	$t_f$	See specified Test Circuit		20		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=800mA$		6		nC
Gate-to-Source Charge	$Q_{gs}$			1		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			2		nC
Diode Forward Voltage	$V_{SD}$	$I_S=800mA, V_{GS}=0$		0.8	1.2	V

## Switching Time Test Circuit



# 2SK2909



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