

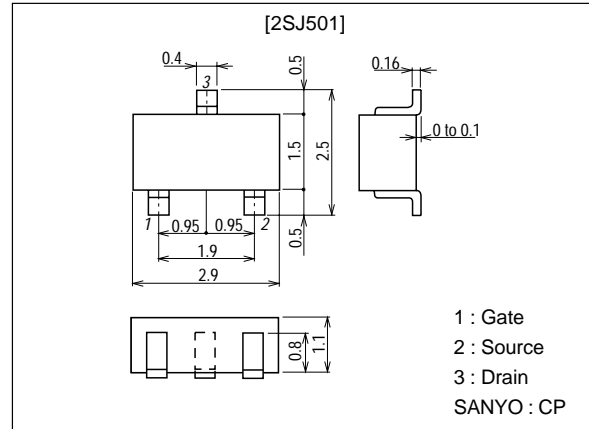
**2SJ501****Ultrahigh-Speed Switching Applications****Features**

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

Package Dimensions

unit:mm

2091A

**Specifications****Absolute Maximum Ratings** at $T_a = 25^\circ\text{C}$

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		-0.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-2.0	A
Allowable Power Dissipation	P_D		0.25	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20\text{V}$, $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-0.5		-1.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -300\text{mA}$	0.2	1.0		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -300\text{mA}$, $V_{GS} = -4\text{V}$		420	600	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -50\text{mA}$, $V_{GS} = -2.5\text{V}$		630	1000	$\text{m}\Omega$

Marking : EM

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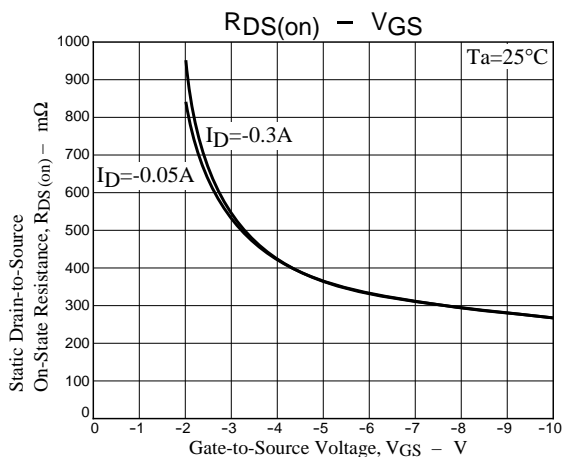
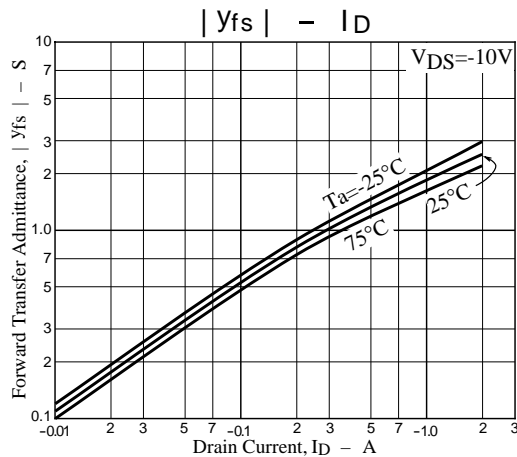
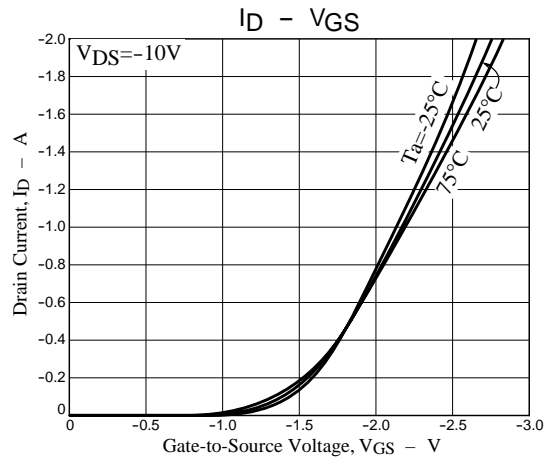
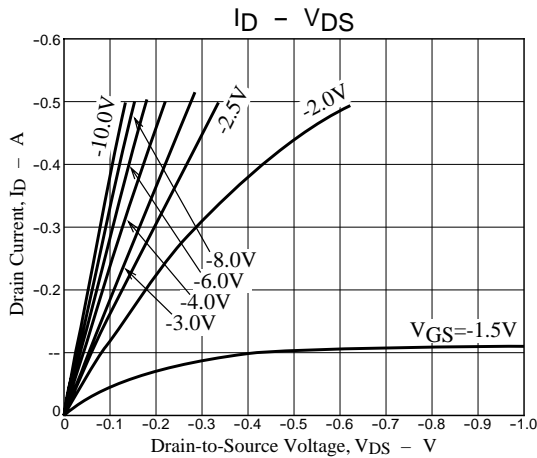
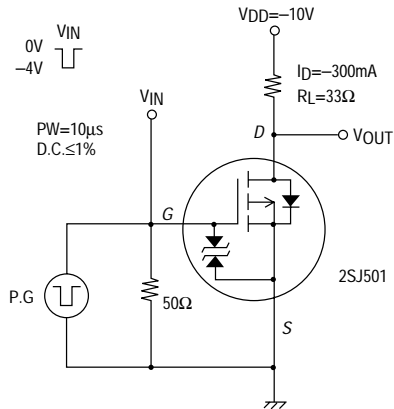
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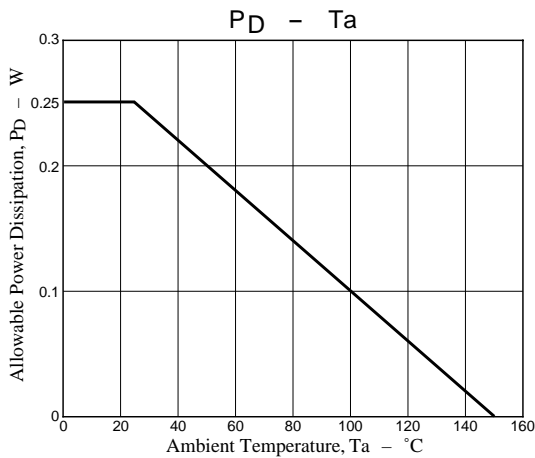
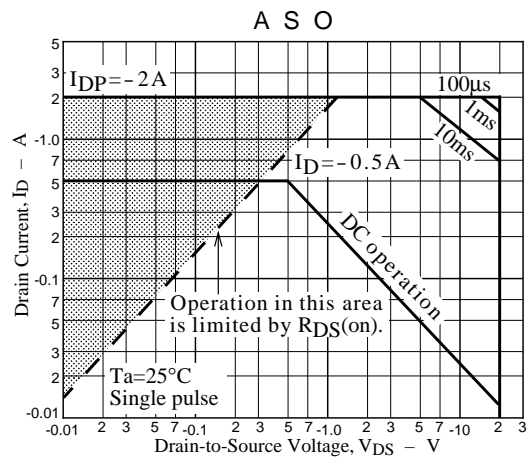
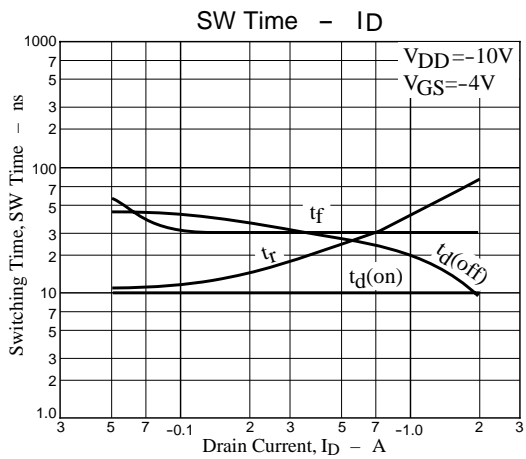
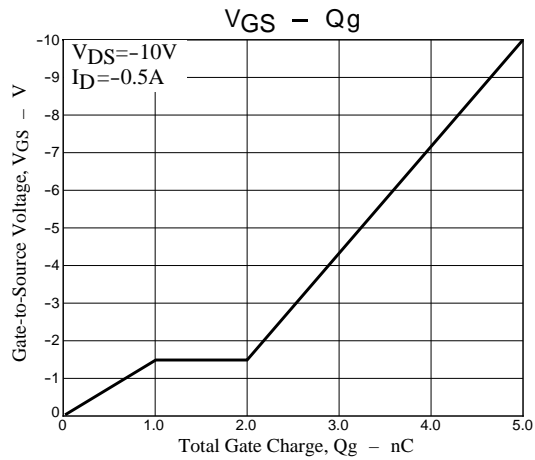
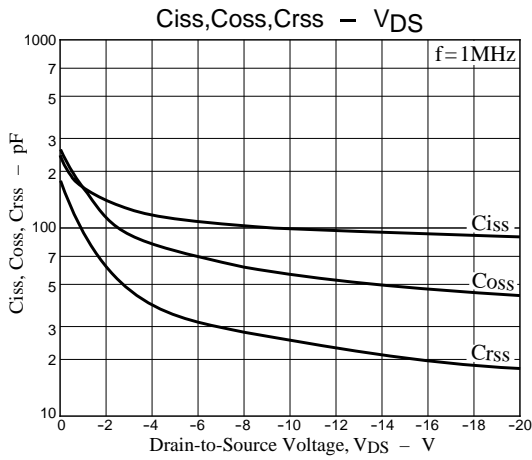
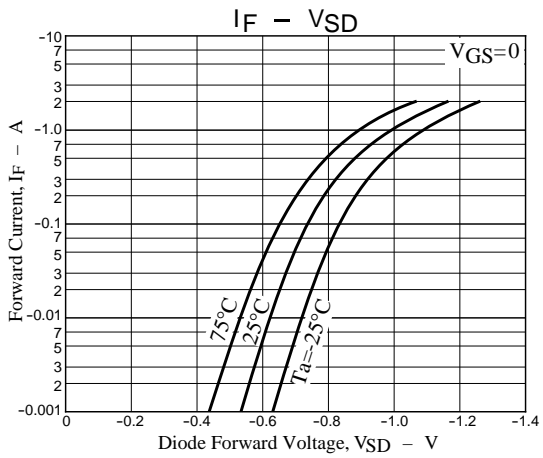
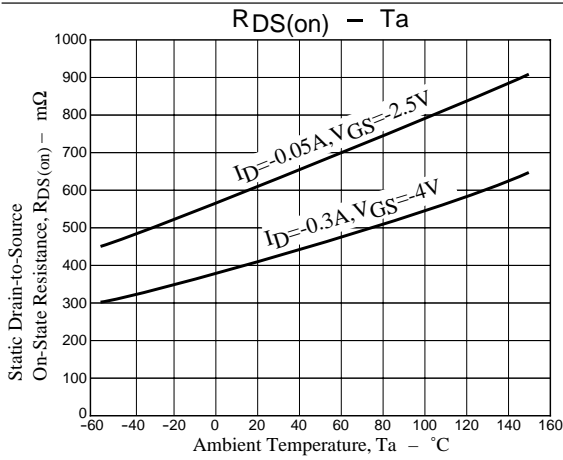
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		100		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		60		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		25		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		17		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		30		ns
Fall Time	t_f	See specified Test Circuit		35		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-500mA$		5		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-500mA$		1		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-500mA$		1		nC
Diode Forward Voltage	V_{SD}	$I_S=-500mA, V_{GS}=0$	-0.87	-1.5		V

Switching Time Test Circuit



2SJ501



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