

**2SJ502**

Ultrahigh-Speed Switching Applications

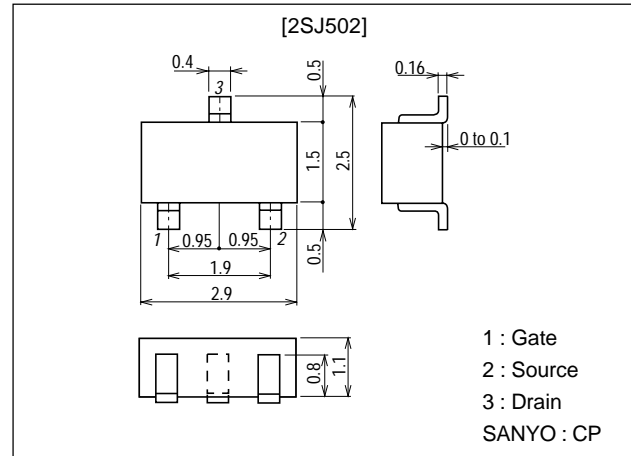
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V 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}		-30	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		-0.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10 \mu s$, duty cycle $\leq 1\%$	-2.0	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	$V_{(BR)DSS}$	$I_D = -1mA$, $V_{GS} = 0$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V$, $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V$, $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$, $I_D = -1mA$	-1.0		-2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$, $I_D = -300mA$	300	800		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -300mA$, $V_{GS} = -10V$		360	600	mΩ
	$R_{DS(on)2}$	$I_D = -300mA$, $V_{GS} = -4V$		690	970	mΩ

Marking : FM

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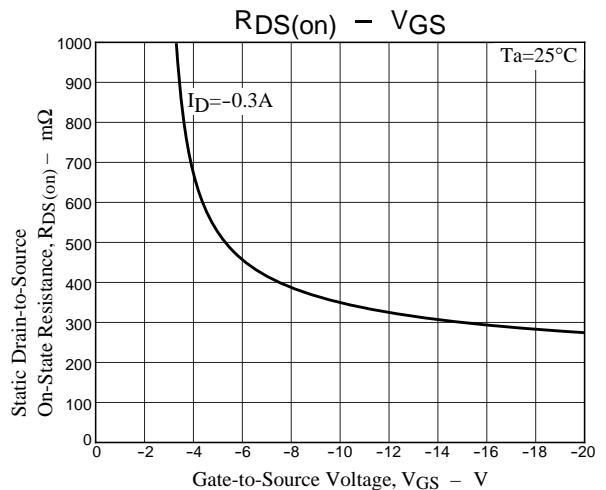
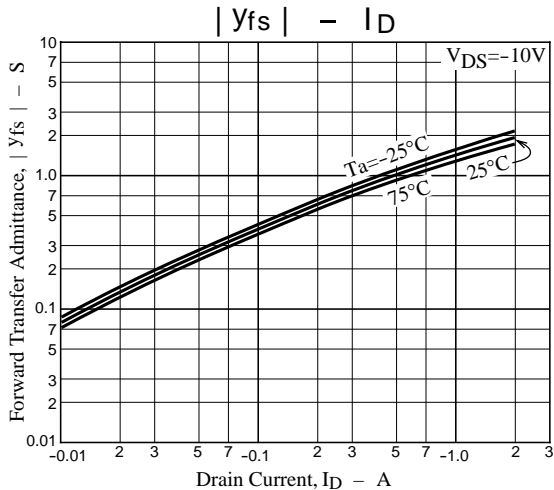
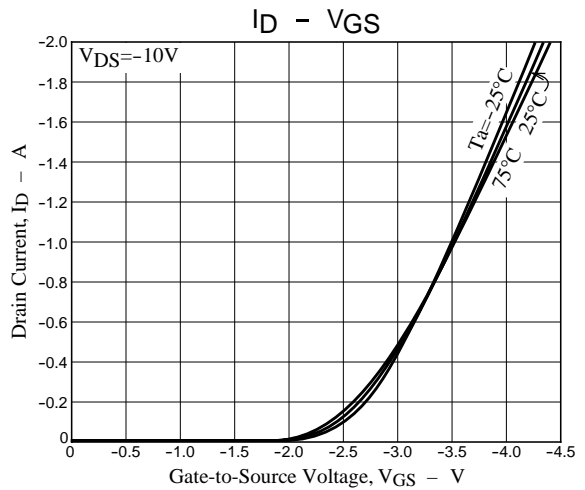
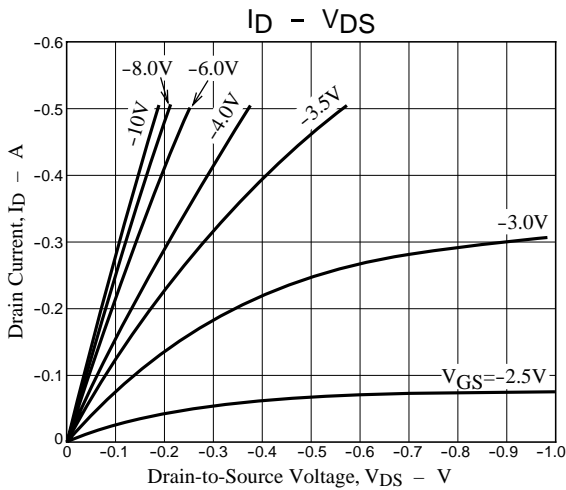
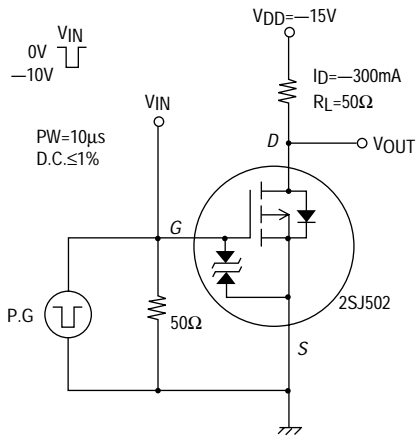
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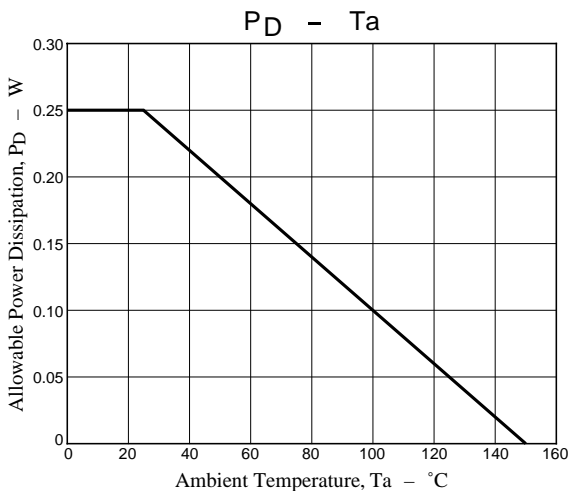
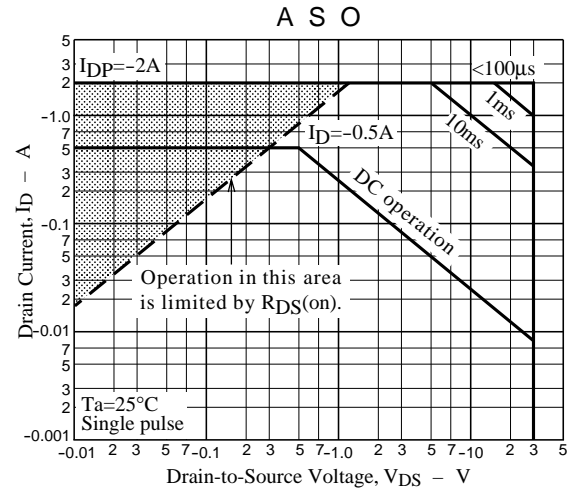
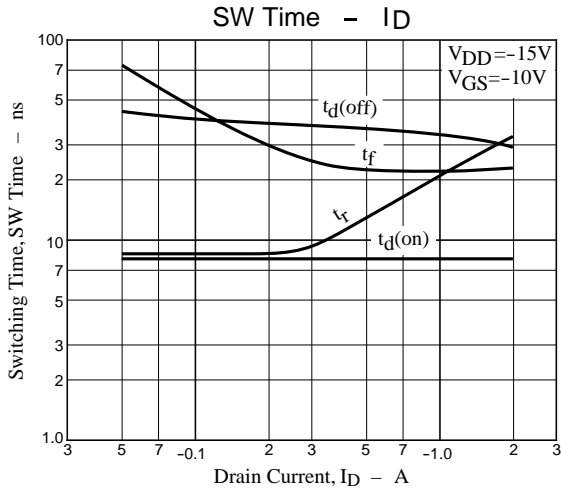
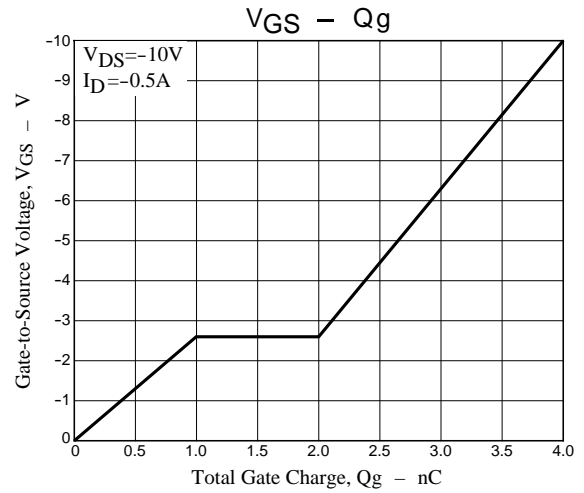
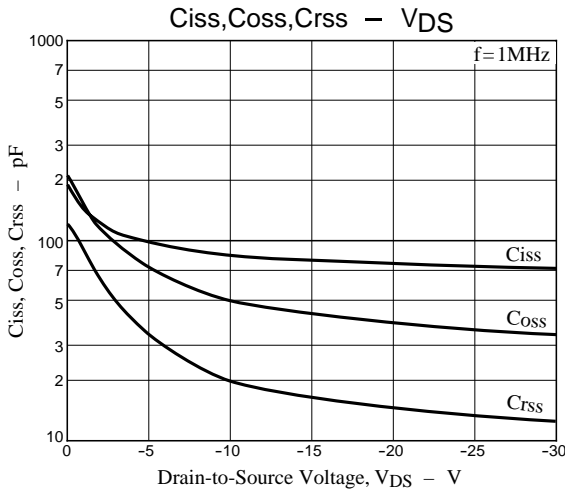
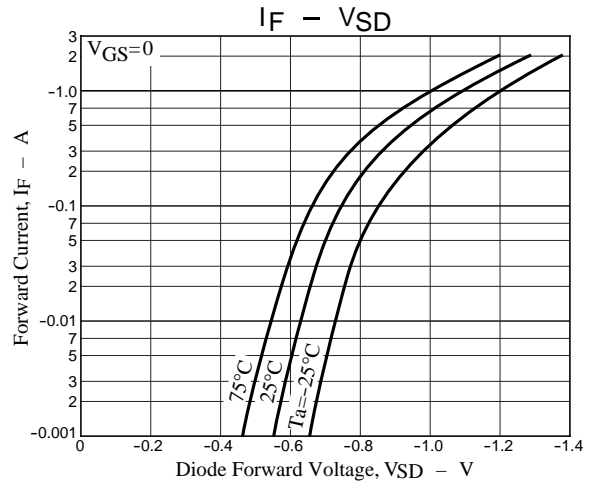
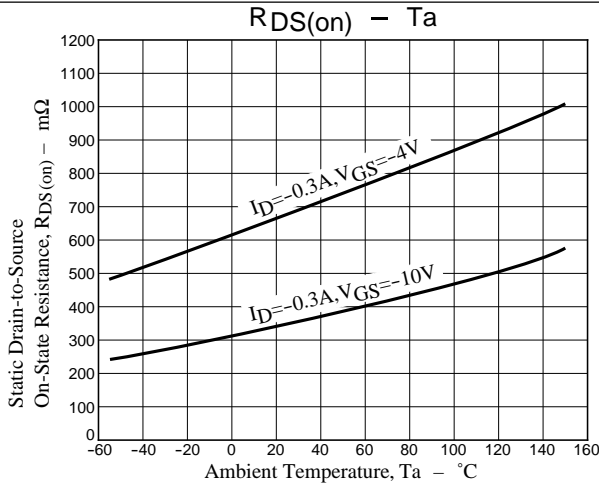
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		90		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		50		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		20		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		8		ns
Rise Time	t_r	See specified Test Circuit		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		40		ns
Fall Time	t_f	See specified Test Circuit		25		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-500mA$		4		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}	$I_S=-500mA, V_{GS}=0$		-0.93	-1.5	V

Switching Time Test Circuit



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