

**2SK3291**

## Ultrahigh-Speed Switching Applications

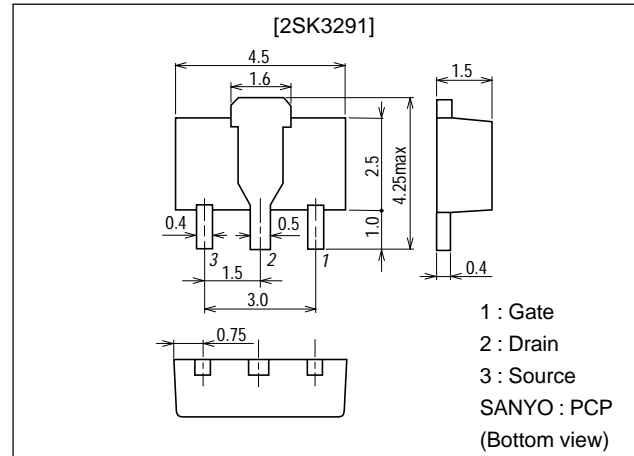
### Features

- Low ON resistance.
- Ultrahigh-speed switching.
- 4V drive.

### Package Dimensions

unit:mm

2062A



### Specifications

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		60	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		1.6	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	6.4	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (250mm <sup>2</sup> ×0.8mm)	1.3	W
		$T_c = 25^\circ C$	3.5	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	$V_{(BR)DSS}$	$I_D = 1mA$ , $V_{GS} = 0$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 60V$ , $V_{GS} = 0$			10	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	1.0		2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$ , $I_D = 0.8A$	1.2	1.7		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = 0.8A$ , $V_{GS} = 10V$		380	500	$m\Omega$
	$R_{DS(on)2}$	$I_D = 0.8A$ , $V_{GS} = 4V$		500	680	$m\Omega$

Marking : KX

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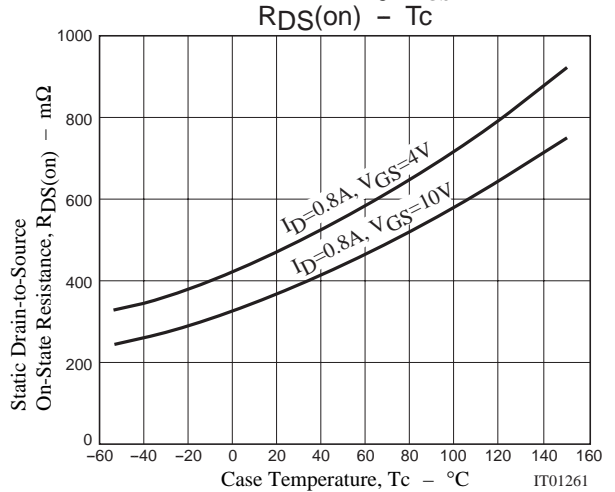
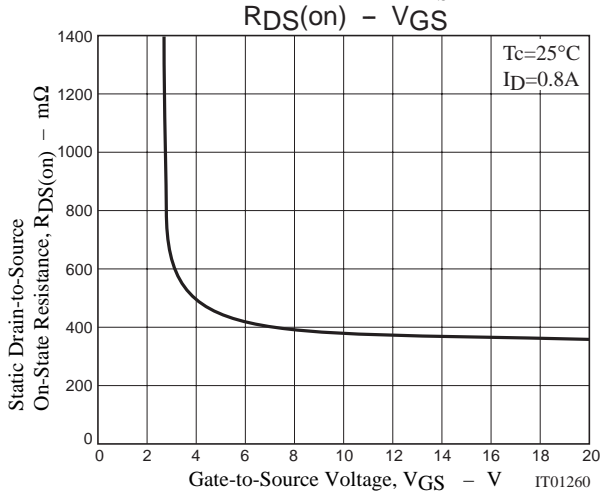
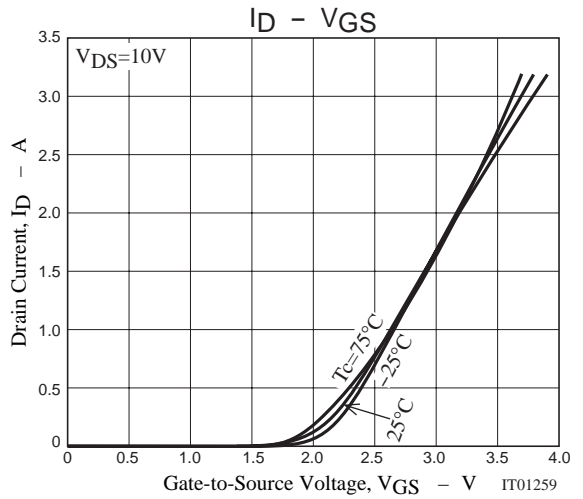
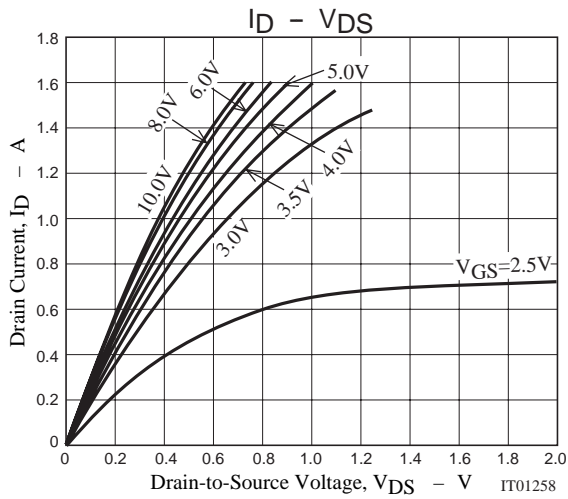
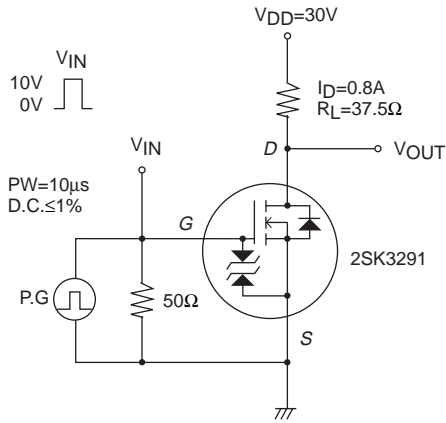
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# 2SK3291

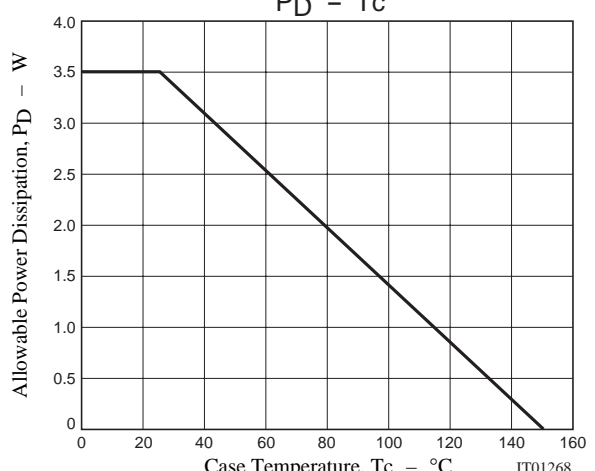
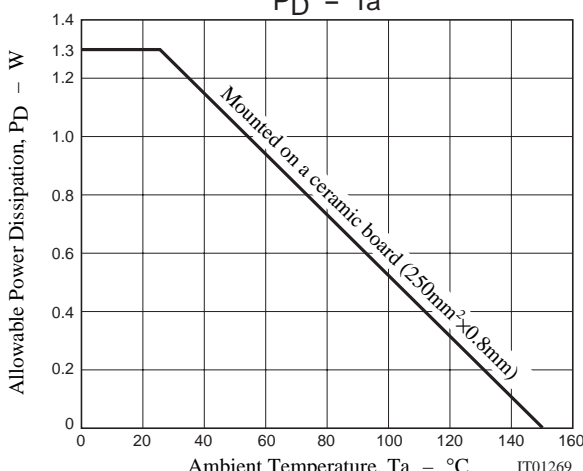
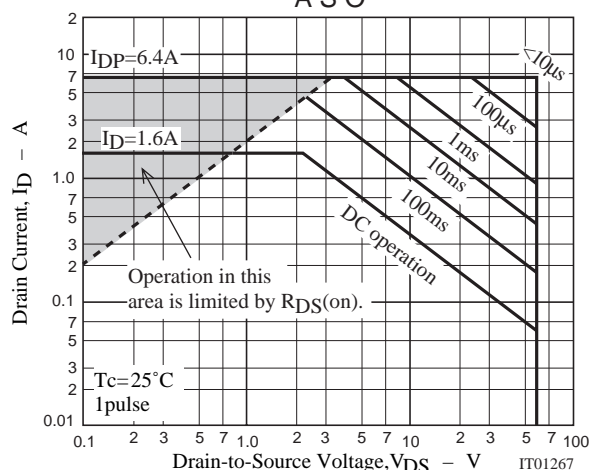
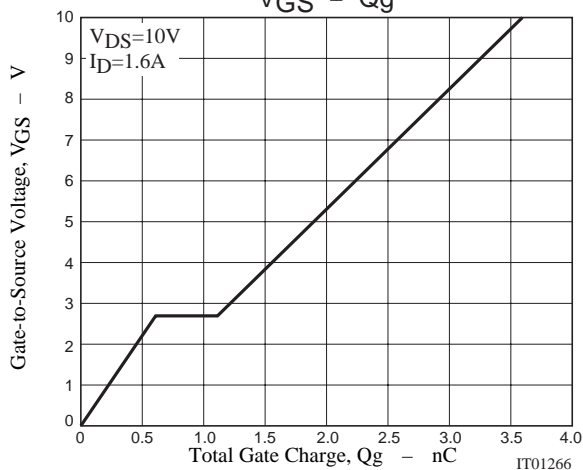
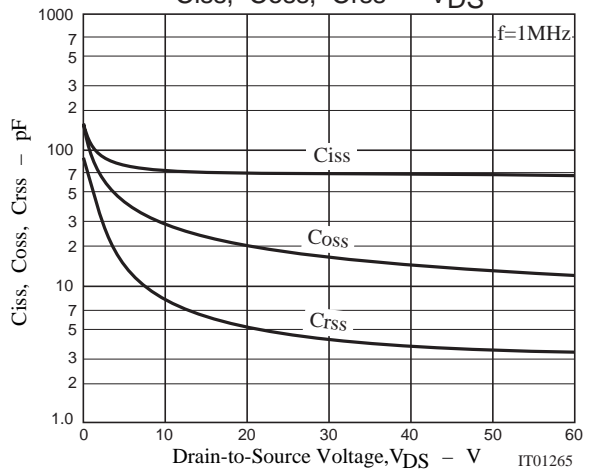
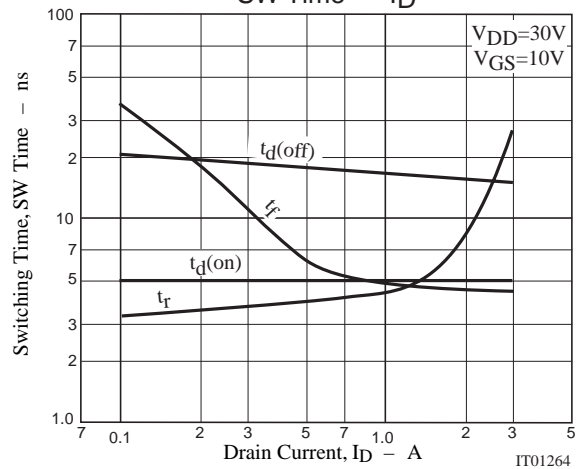
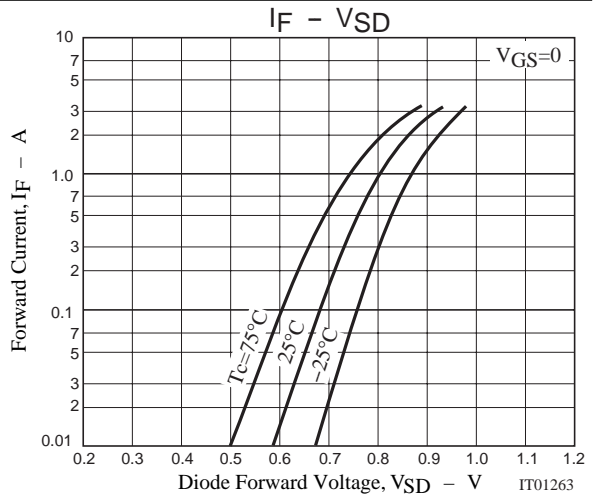
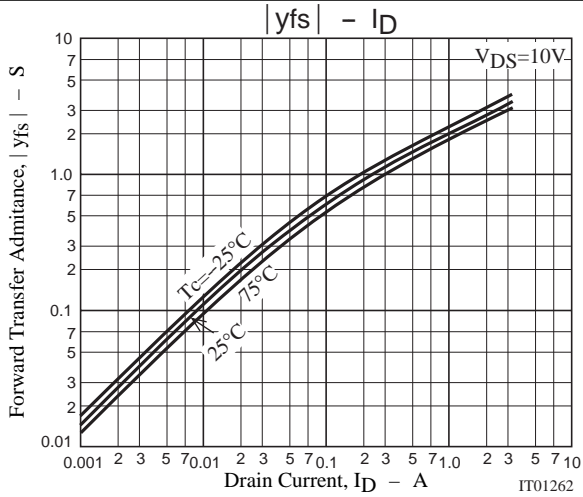
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		70		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		20		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		5		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		5		ns
Rise Time	$t_r$	See specified Test Circuit		4		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		18		ns
Fall Time	$t_f$	See specified Test Circuit		5		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=1.6A$		3.6		nC
Gate-to-Source Charge	Qgs			0.6		nC
Gate-to-Drain "Miller" Charge	Qgd			0.5		nC
Diode Forward Voltage	$V_{SD}$	$I_S=1.6A, V_{GS}=0$		0.85	1.2	V

## Switching Time Test Circuit



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