

**2SJ580**

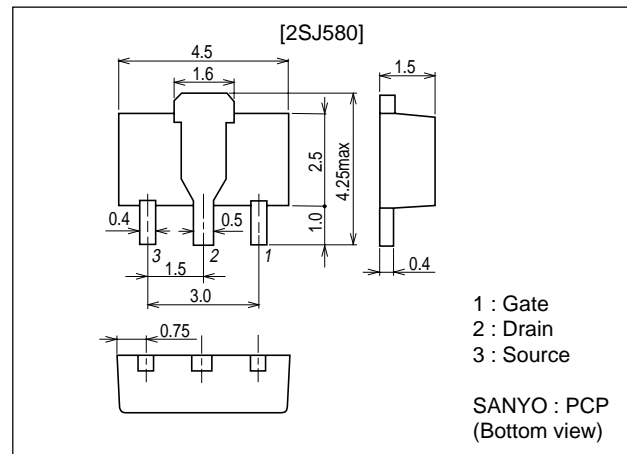
## Ultrahigh-Speed Switching Applications

### Features

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

### Package Dimensions

unit : mm  
2062A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		-60	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-1.8	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-7.2	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (250mm <sup>2</sup> X0.8mm)	1.5	W
		$T_c=25^\circ\text{C}$	3.5	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	$V_{(BR)DSS}$	$I_D=-1\text{mA}$ , $V_{GS}=0$	-60			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-60\text{V}$ , $V_{GS}=0$			-10	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16\text{V}$ , $V_{DS}=0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}$ , $I_D=-1\text{mA}$	-1.0		-2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}$ , $I_D=-1\text{A}$	1.6	2.3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-1\text{A}$ , $V_{GS}=-10\text{V}$		300	400	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-0.8\text{A}$ , $V_{GS}=-4\text{V}$		400	560	$\text{m}\Omega$

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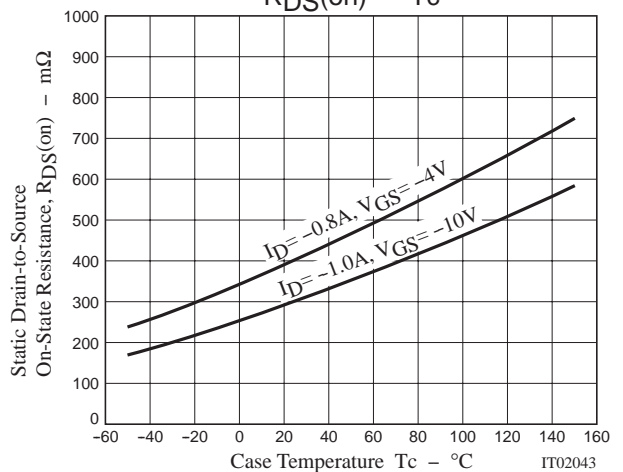
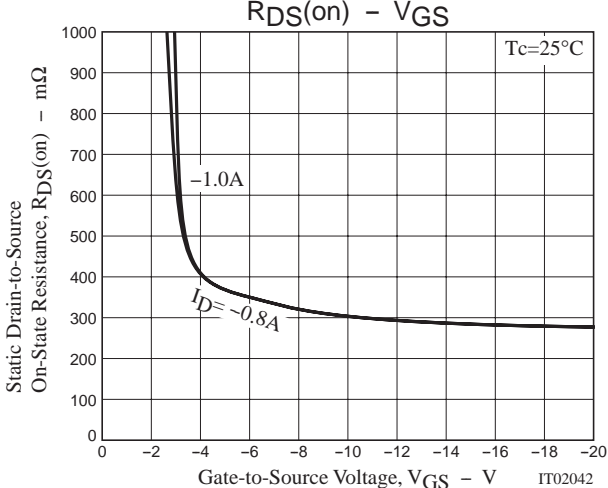
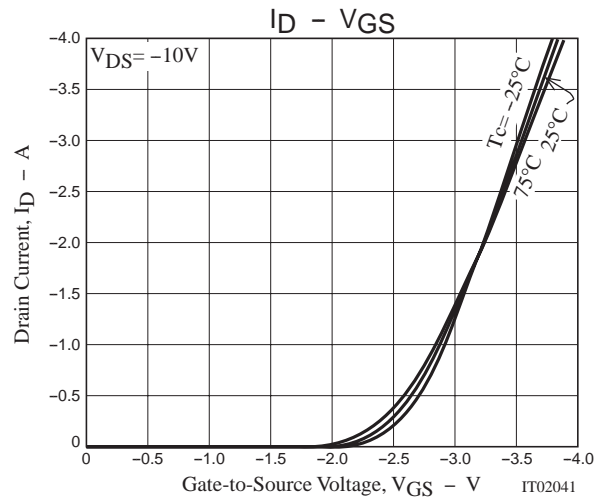
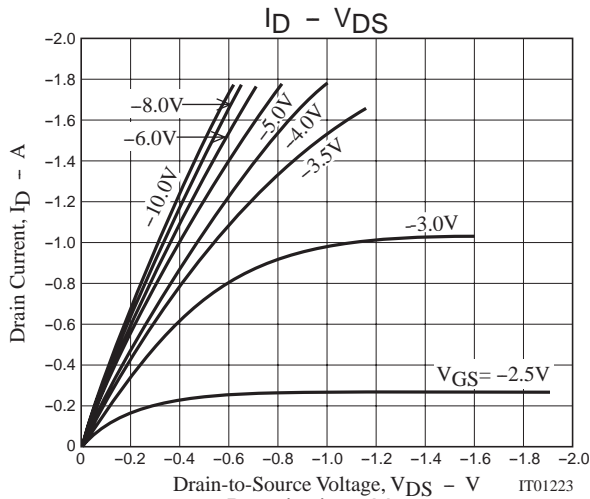
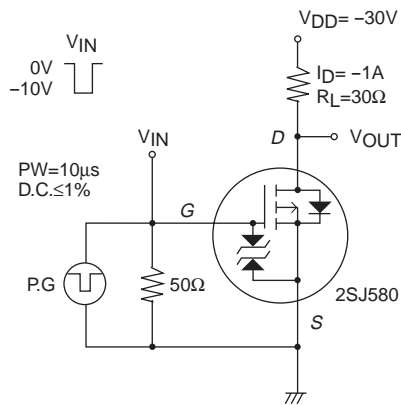
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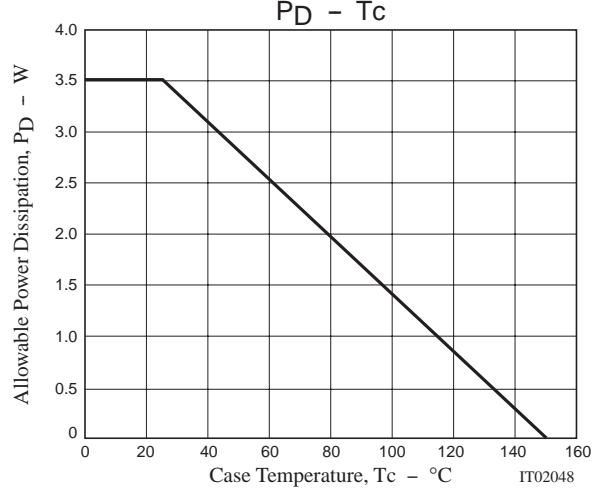
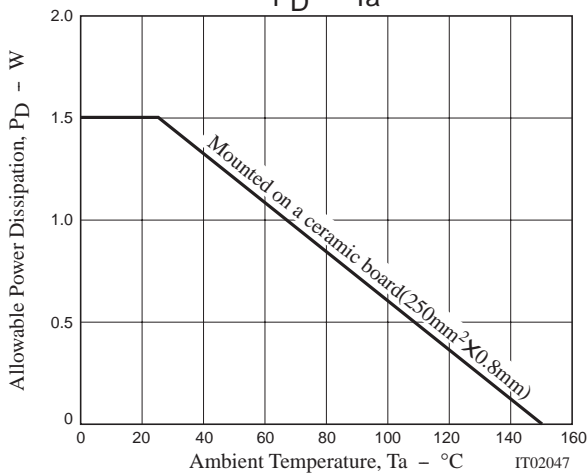
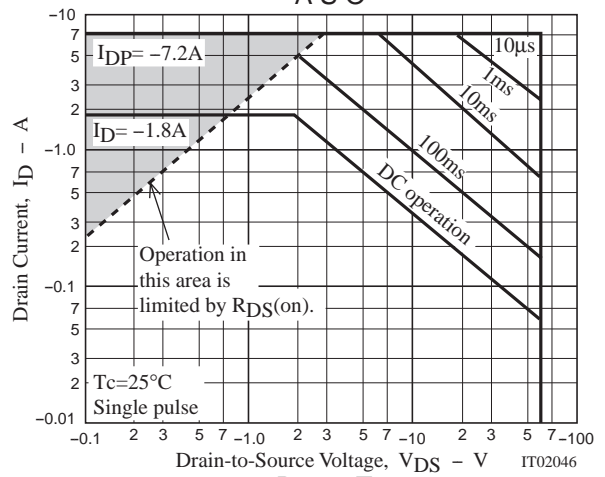
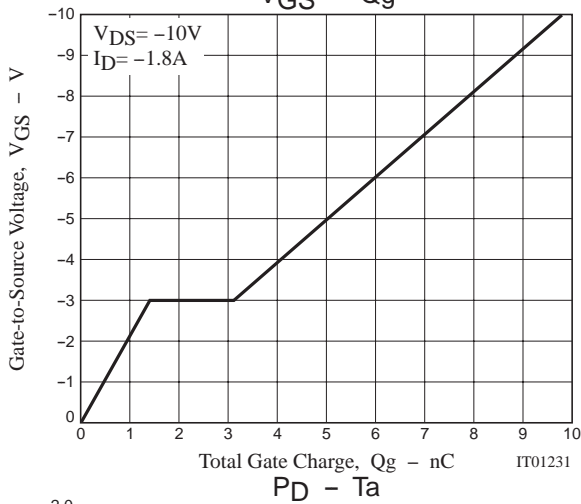
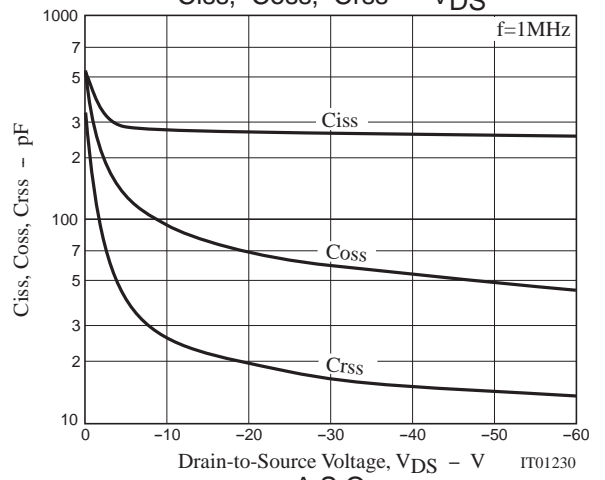
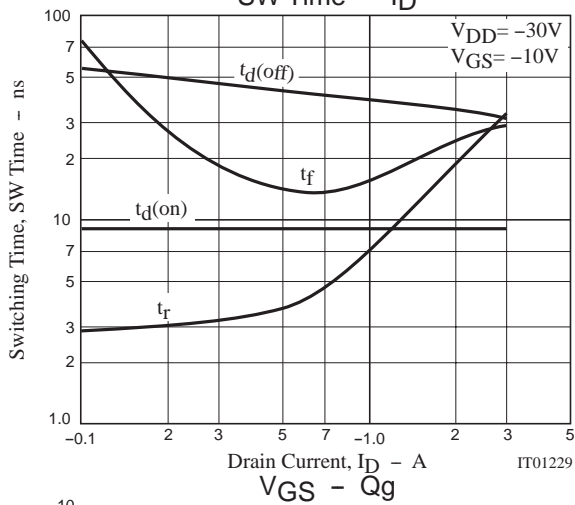
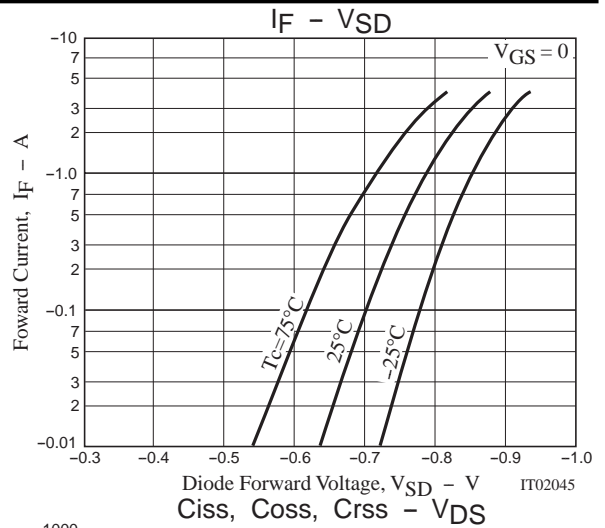
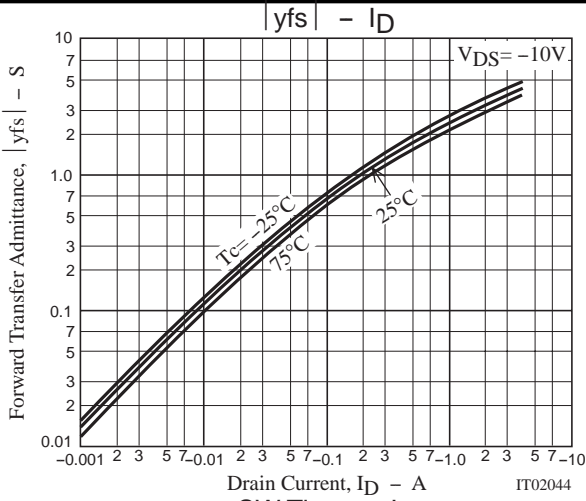
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =-20V, f=1MHz		270		pF
Output Capacitance	Coss	V <sub>DS</sub> =-20V, f=1MHz		70		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-20V, f=1MHz		20		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		9		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		7		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		38		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		16		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.8A		9.8		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.8A		1.4		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.8A		1.7		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1.8A, V <sub>GS</sub> =0	-0.81		-1.2	V

Marking : JR

## Switching Time Test Circuit



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