

**2SJ381**

## Ultrahigh-Speed Switching Applications

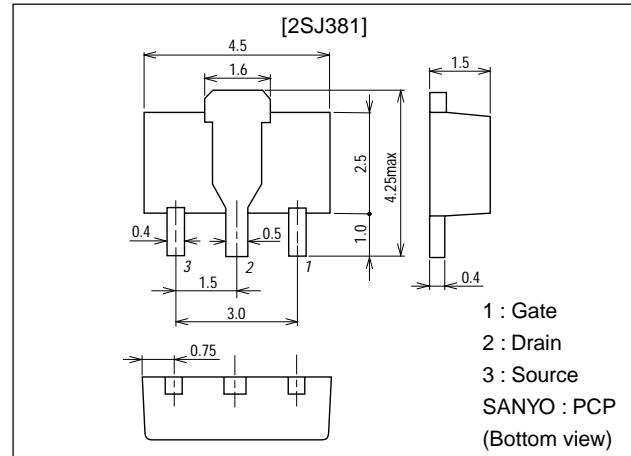
### Features

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

### Package Dimensions

unit:mm

2062A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-12	V
Gate-to-Source Voltage	$V_{GSS}$		±10	V
Drain Current (DC)	$I_D$		-2	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-8	A
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ C$	3.5	W
		Mounted on ceramic board (250mm <sup>2</sup> × 0.8mm)	1.5	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	$V_{(BR)DSS}$	$I_D = -1mA$ , $V_{GS} = 0$	-12			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -10V$ , $V_{GS} = 0$			-100	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8V$ , $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -6V$ , $I_D = -1mA$	-0.5		-1.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6V$ , $I_D = -1A$	1.6	2.4		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = -1A$ , $V_{GS} = -4V$		280	400	mΩ
	$R_{DS(on)}$	$I_D = -500mA$ , $V_{GS} = -2.5V$		400	700	mΩ

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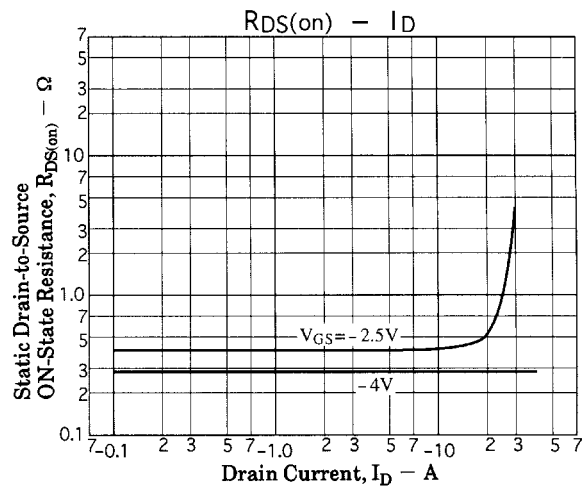
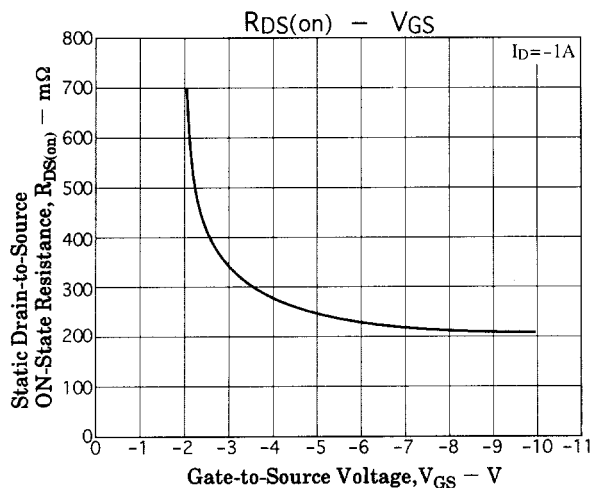
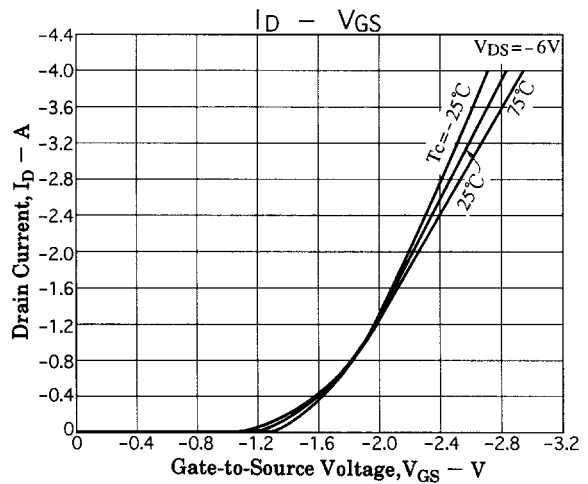
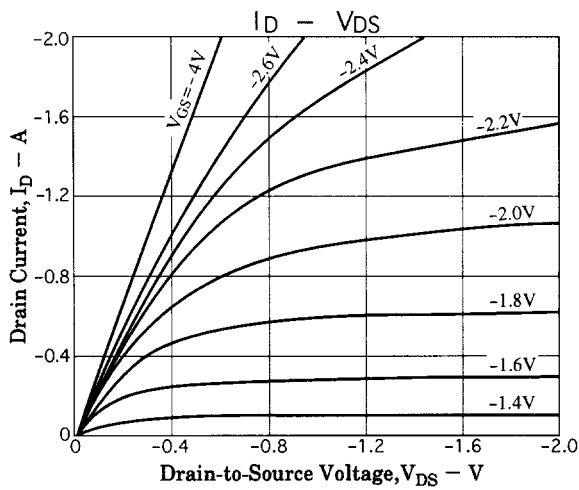
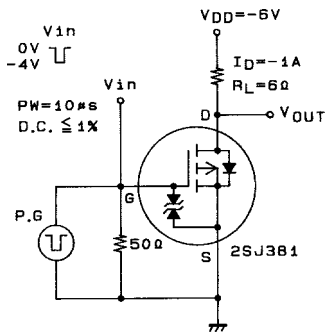
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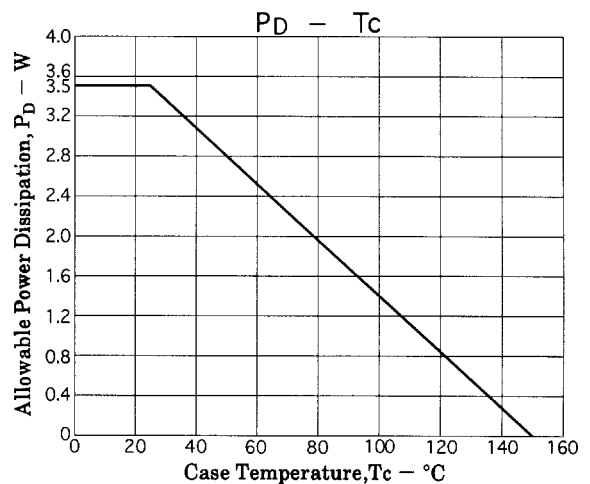
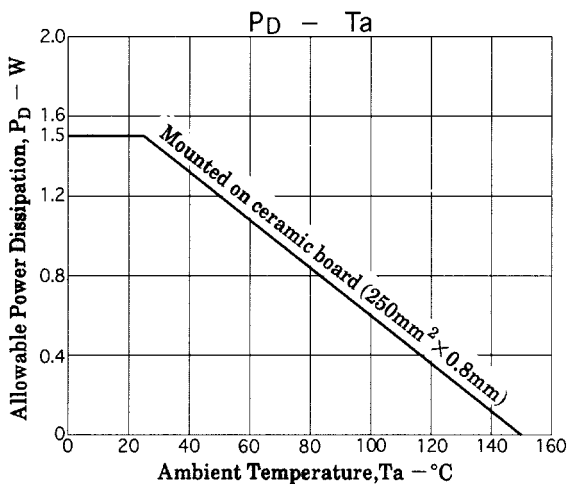
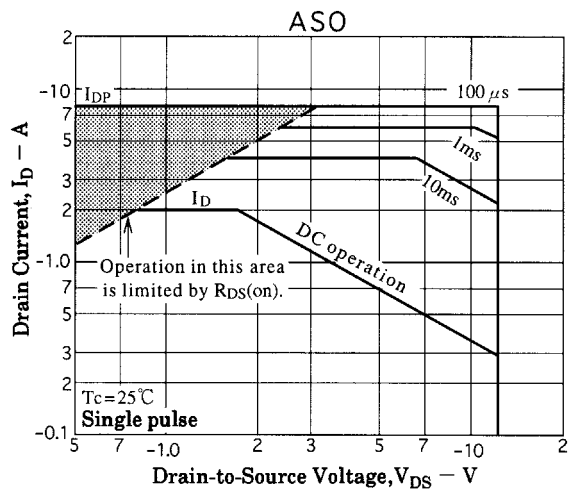
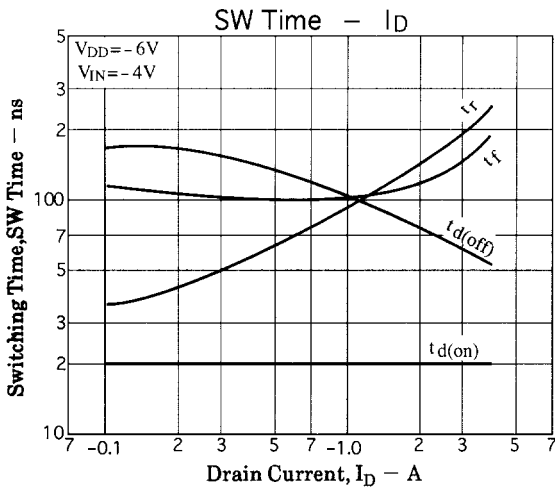
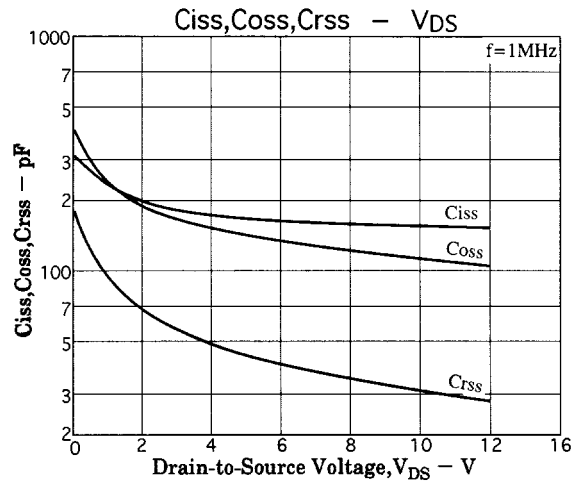
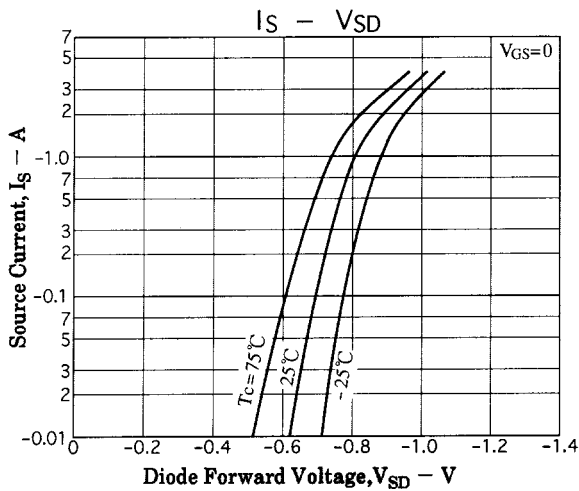
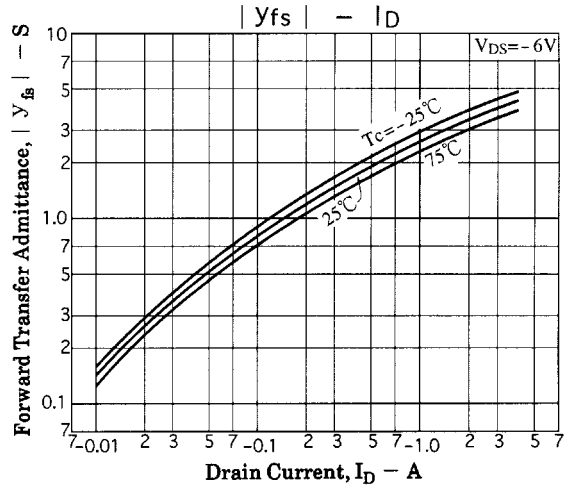
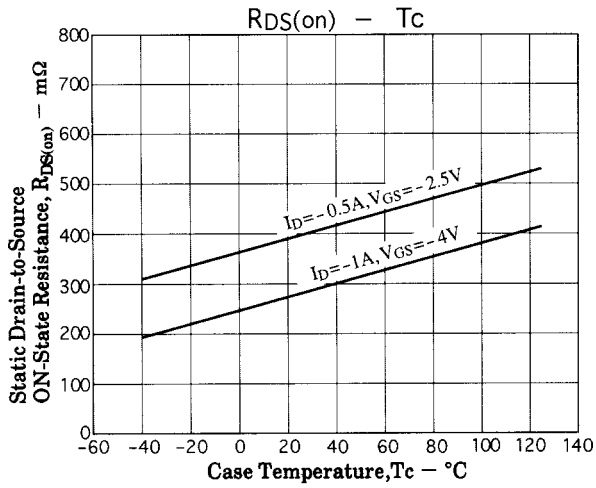
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS} = -6V, f = 1MHz$		170		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -6V, f = 1MHz$		140		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -6V, f = 1MHz$		40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		20		ns
Rise Time	$t_r$	See specified Test Circuit		90		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		100		ns
Fall Time	$t_f$	See specified Test Circuit		100		ns
Diode Forward Voltage	$V_{SD}$	$I_S = -2A, V_{GS} = 0$		-1.0	-1.2	V

## Switching Time Test Circuit



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