

**2SJ421**

## Ultrahigh-Speed Switching Applications

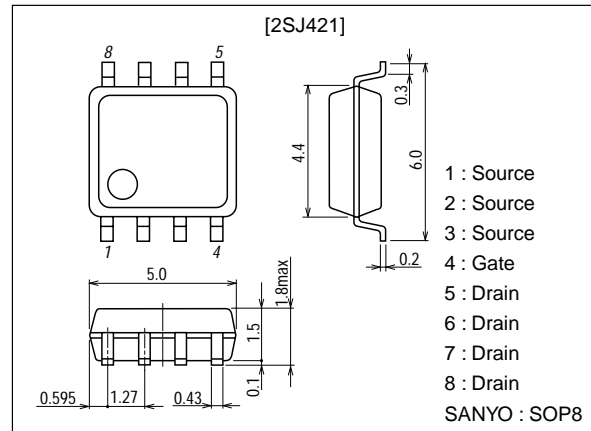
### Features

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

### Package Dimensions

unit:mm

2116



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		-30	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-5	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-32	A
Allowable Power Dissipation	$P_D$	Mounted on ceramic board (1000mm <sup>2</sup> ×0.8mm)	2.0	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	$I_{DSS}$	$V_{DS} = -30V$ , $V_{GS} = 0$			-100	$\mu A$
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		-2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$ , $I_D = -5A$	6	10		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)1}$	$I_D = -5A$ , $V_{GS} = -10V$		45	58	m $\Omega$
	$R_{DS(on)2}$	$I_D = -2A$ , $V_{GS} = -4V$		65	107	m $\Omega$

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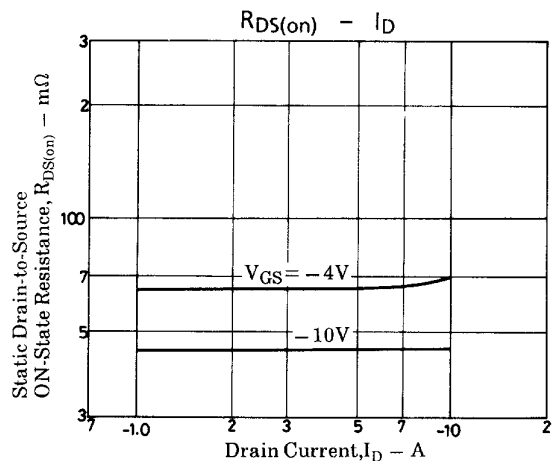
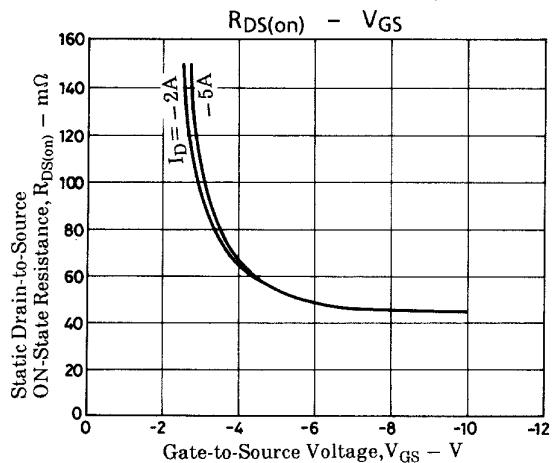
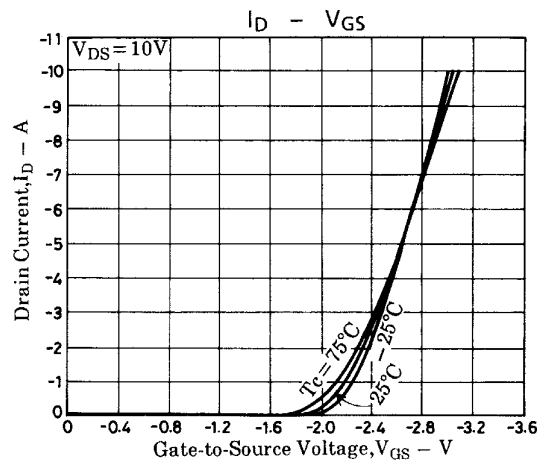
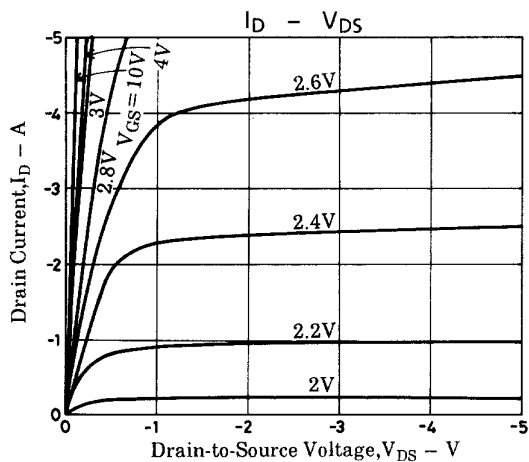
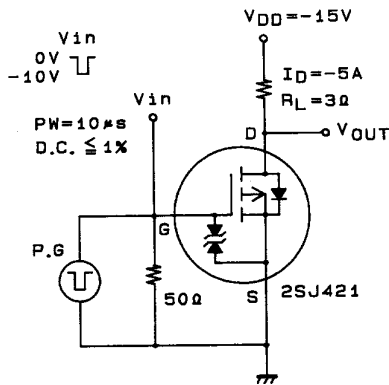
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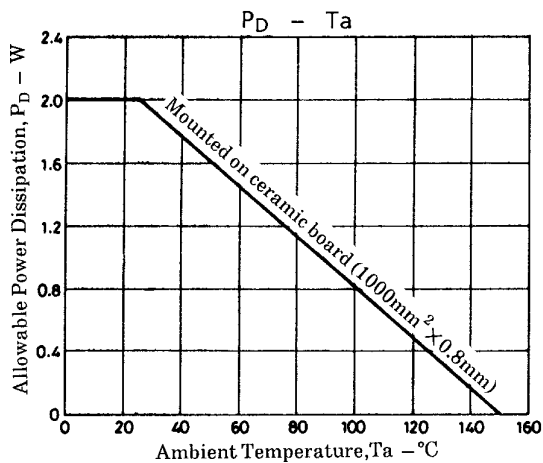
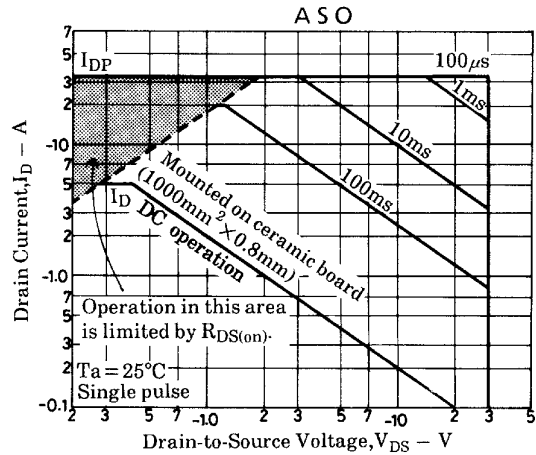
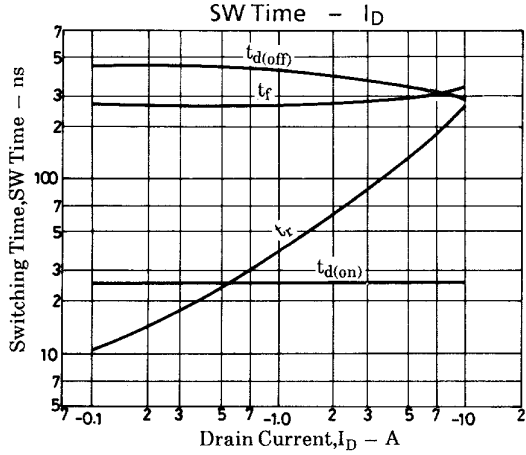
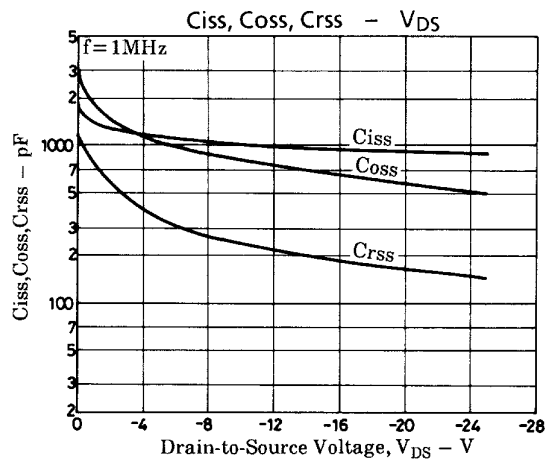
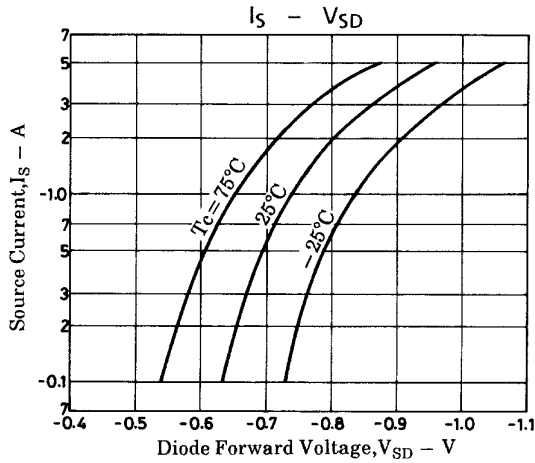
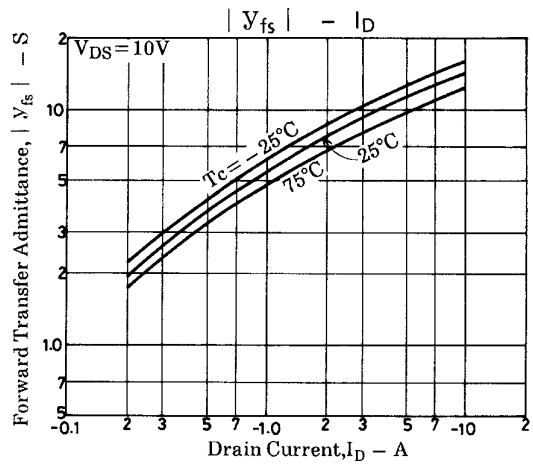
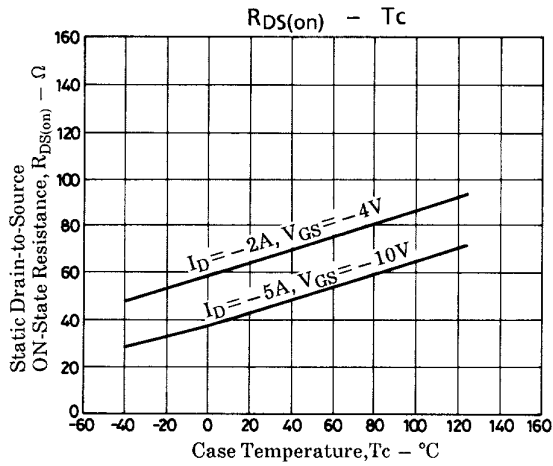
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, f = 1MHz$		1000		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10V, f = 1MHz$		800		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10V, f = 1MHz$		240		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		25		ns
Rise Time	$t_r$	See specified Test Circuit		140		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		350		ns
Fall Time	$t_f$	See specified Test Circuit		300		ns
Diode Forward Voltage	$V_{SD}$	$I_S = -5A, V_{GS} = 0$		-1.0	-1.2	V

## Switching Time Test Circuit



# 2SJ421



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