

**2SJ421**

Ultrahigh-Speed Switching Applications

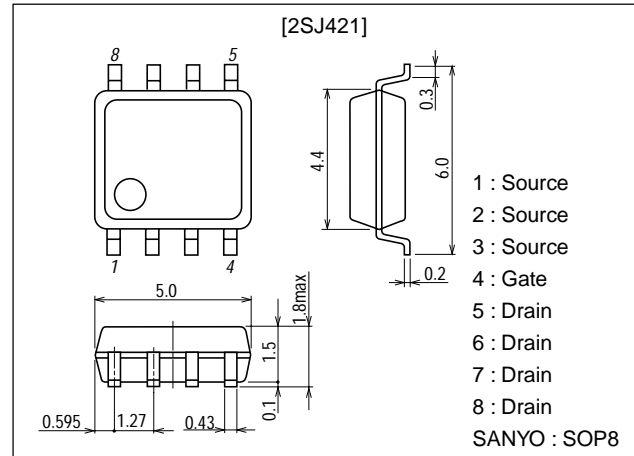
Features

- 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_{DSS}		-30	V
Gate-to-Source Voltage	V_{GSS}		±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 ² ×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	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} $	$V_{DS} = -10V$, $I_D = -5A$	6	10		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)1}$	$I_D = -5A$, $V_{GS} = -10V$		45	58	mΩ
	$R_{DS(on)2}$	$I_D = -2A$, $V_{GS} = -4V$		65	107	mΩ

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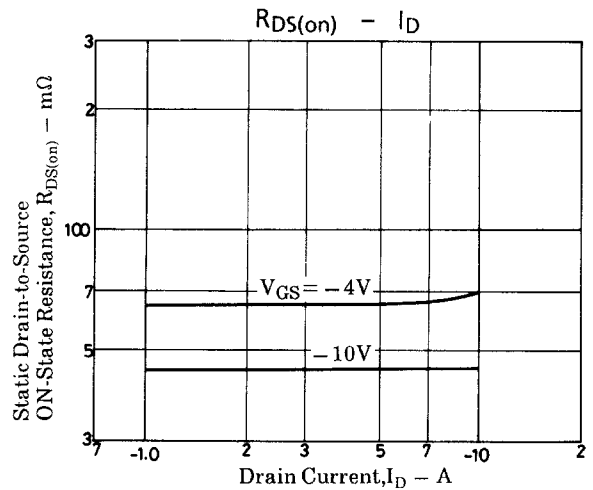
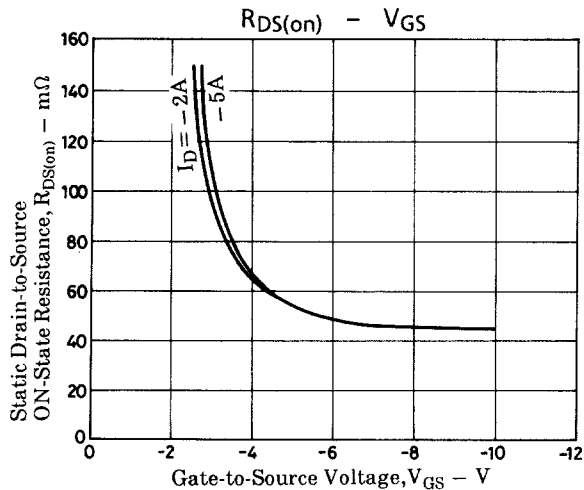
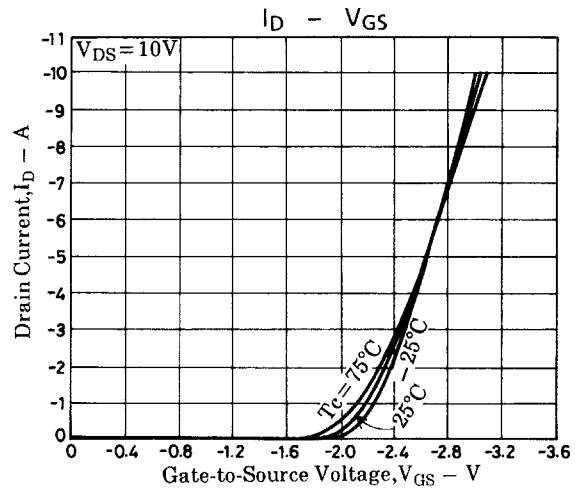
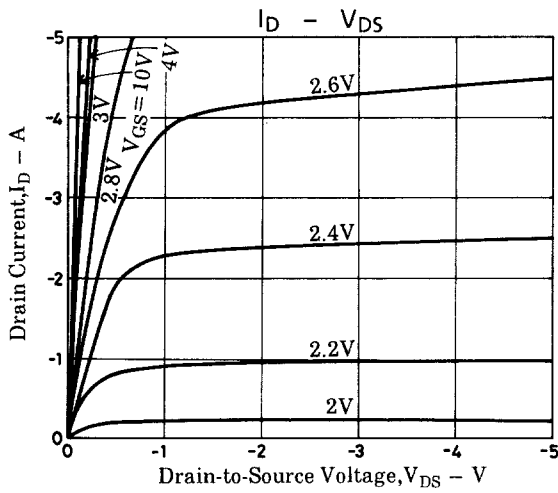
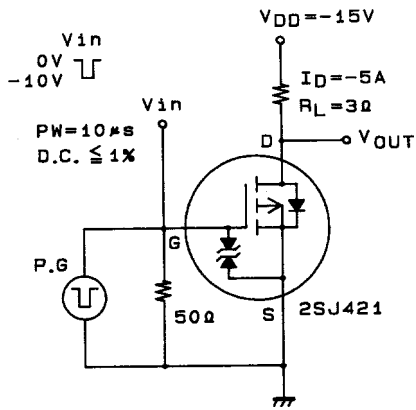
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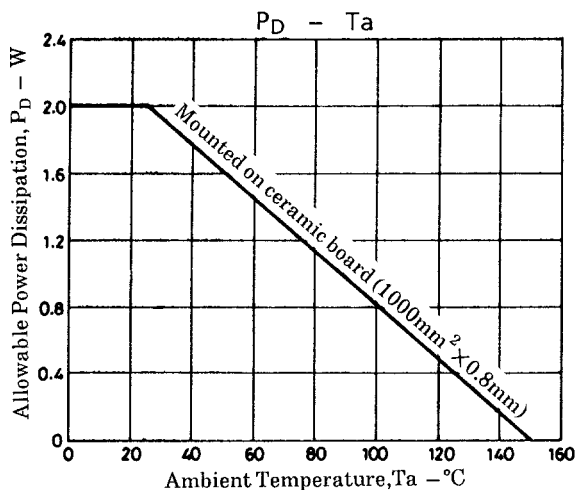
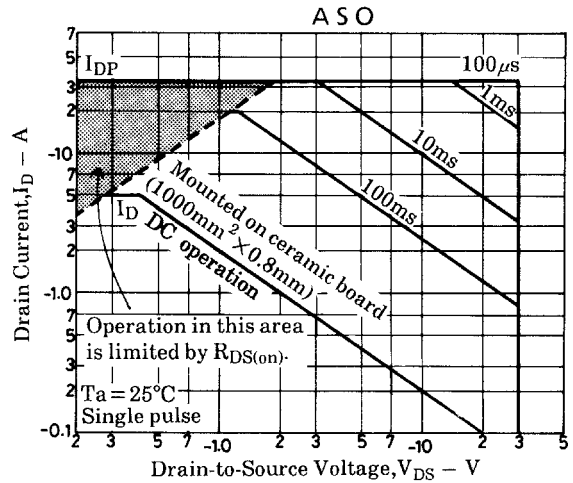
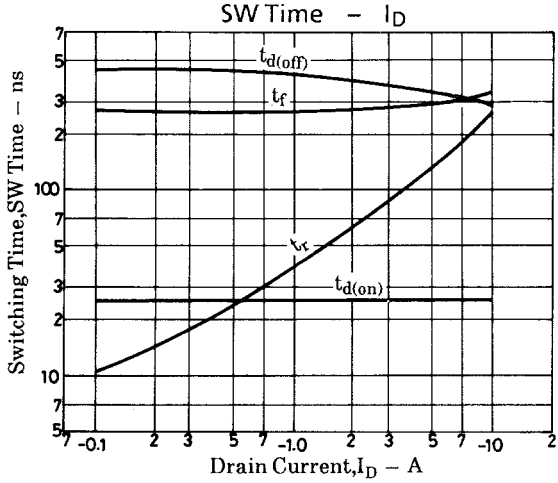
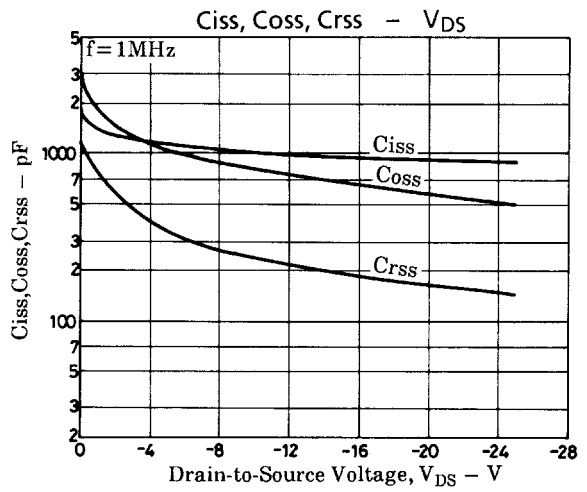
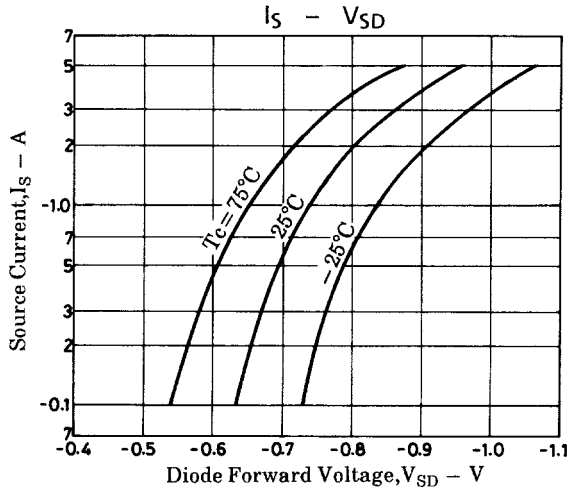
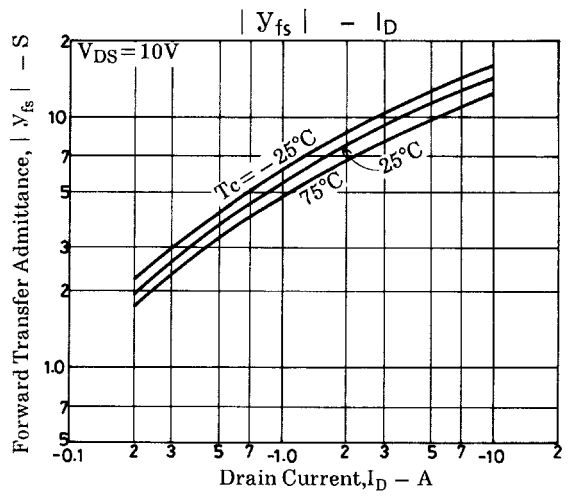
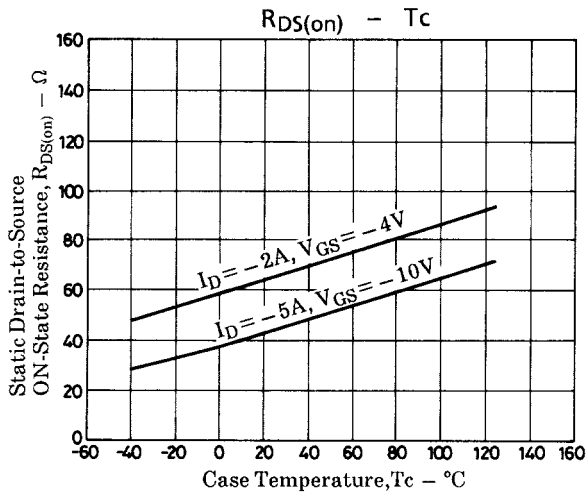
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS} = -10V, f = 1MHz$		1000		pF
Output Capacitance	Coss	$V_{DS} = -10V, f = 1MHz$		800		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = -10V, f = 1MHz$		240		pF
Turn-ON 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



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