

**2SJ413**

Ultrahigh-Speed Switching Applications

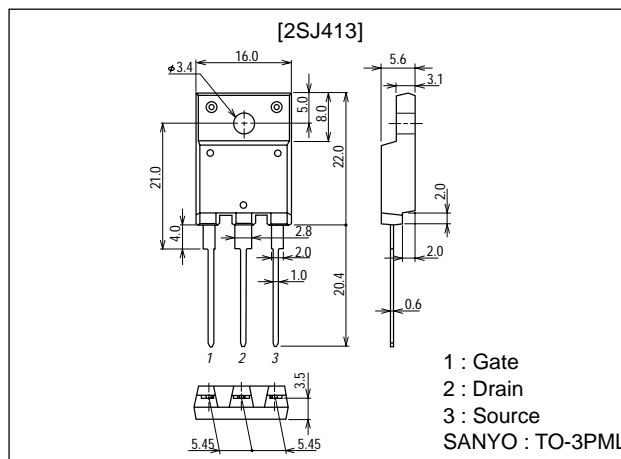
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Micaless package facilitating mounting.

Package Dimensions

unit:mm

2076B



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		-60	V
Gate-to-Source Voltage	V_{GS}		±20	V
Drain Current (DC)	I_D		-50	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-200	A
Allowable Power Dissipation	P_D		3.0	W
		$T_c = 25^\circ C$	70	W
Channel Temperature	T_{ch}		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu A$, $V_{DS} = 0$	±20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -60V$, $V_{GS} = 0$			-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		-2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$, $I_D = -25A$	27	45		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -25A$, $V_{GS} = -10V$		15	20	$m\Omega$
	$R_{DS(on)2}$	$I_D = -25A$, $V_{GS} = -4V$		20	30	$m\Omega$

Marking : JE

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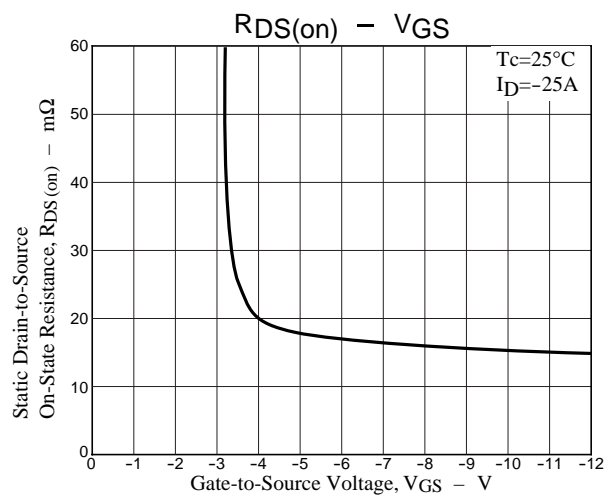
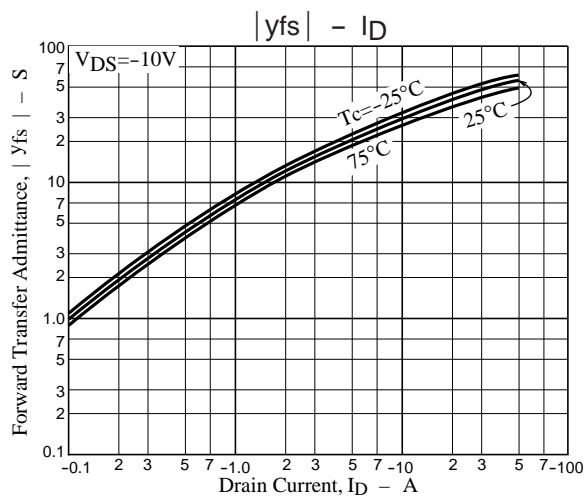
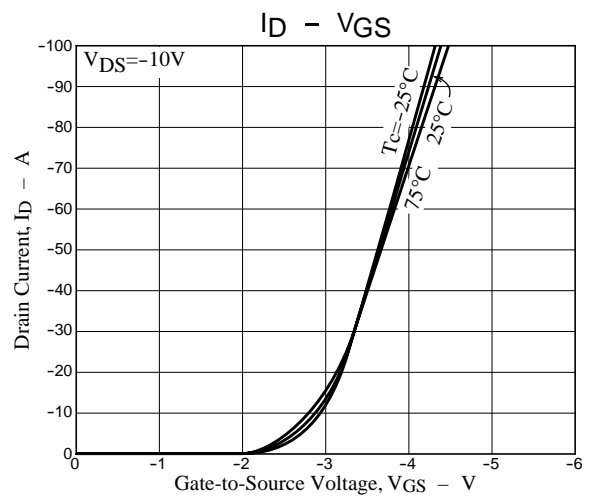
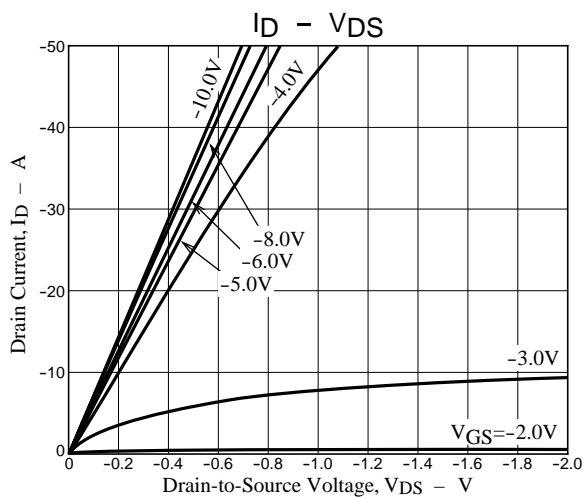
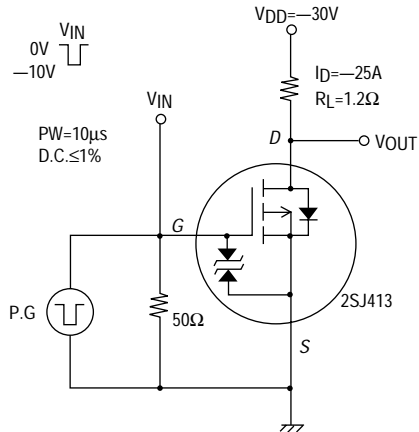
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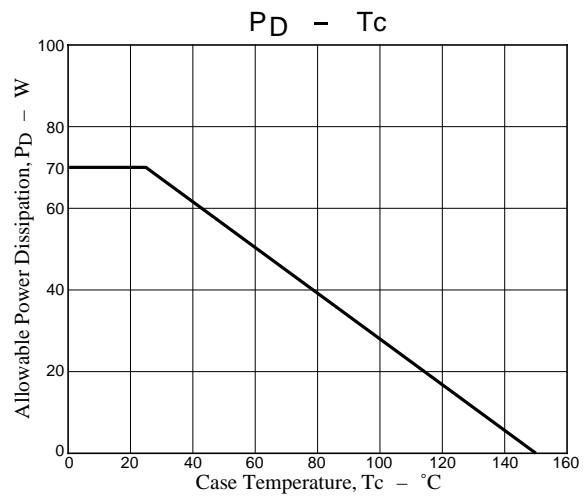
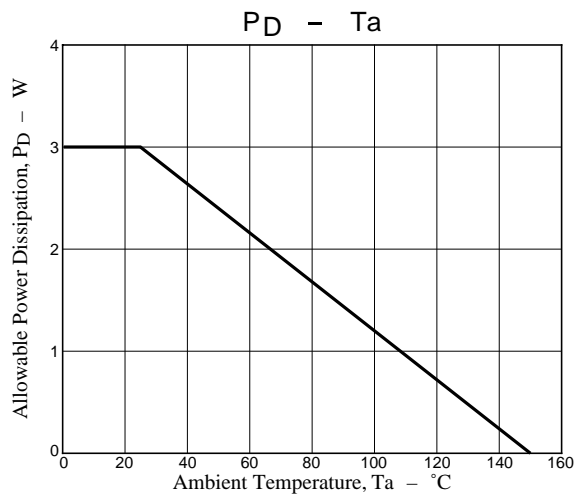
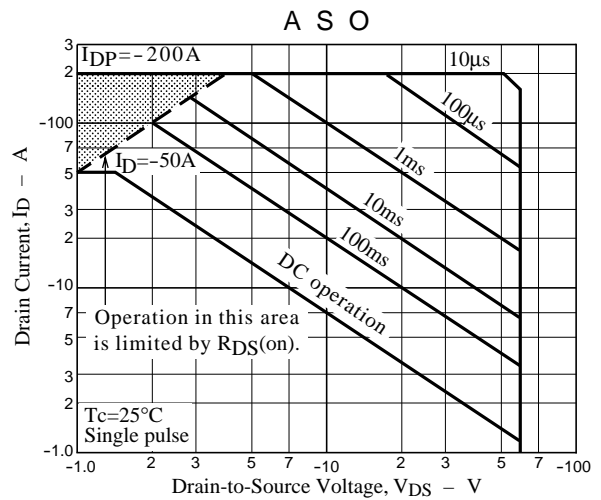
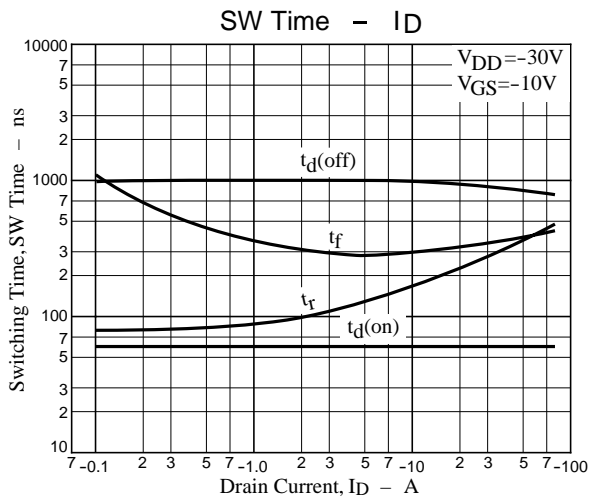
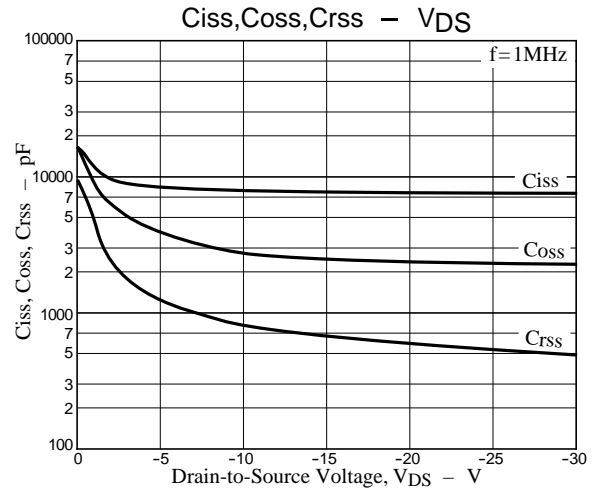
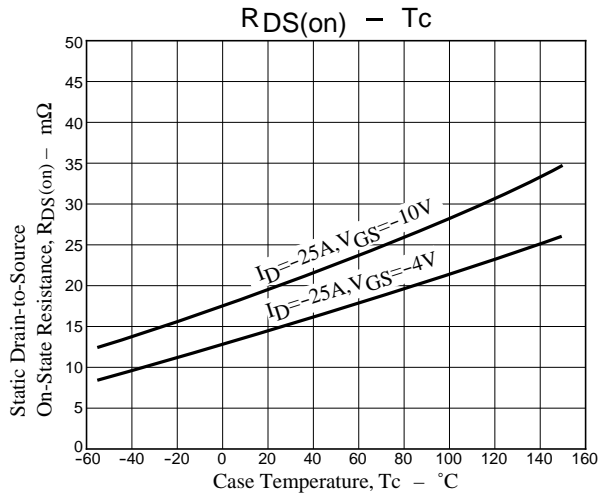
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS} = -20V, f = 1MHz$		7600		pF
Output Capacitance	C_{oss}	$V_{DS} = -20V, f = 1MHz$		2400		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -20V, f = 1MHz$		600		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		60		ns
Rise Time	t_r	See specified Test Circuit		250		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		900		ns
Fall Time	t_f	See specified Test Circuit		350		ns
Diode Forward Voltage	V_{SD}	$I_S = -50A, V_{GS} = 0$		-1.0	-1.5	V

Switching Time Test Circuit





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