

**2SJ281**

Ultrahigh-Speed Switching Applications

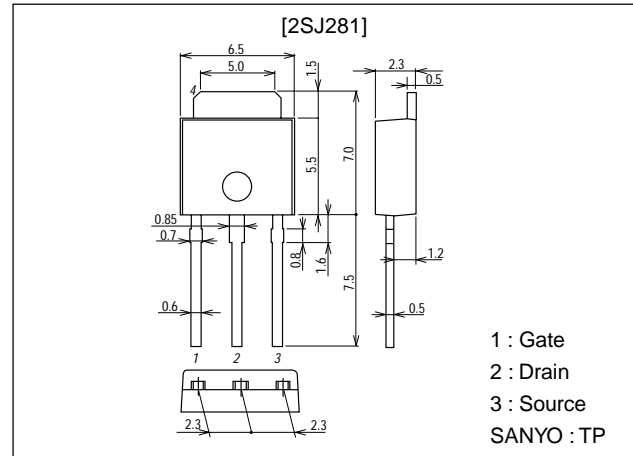
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.

Package Dimensions

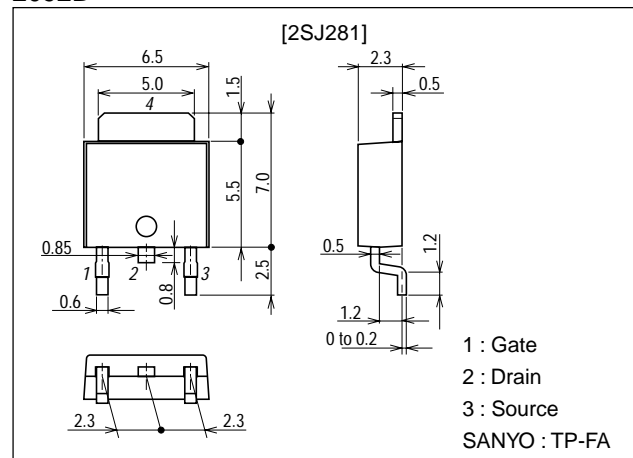
unit:mm

2083B



unit:mm

2092B



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Specifications

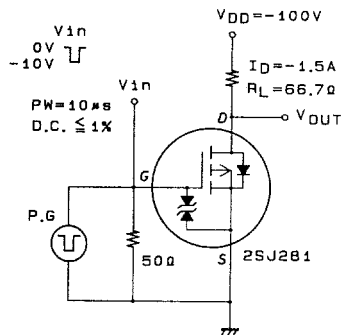
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-250	V
Gate-to-Source Voltage	V_{GSS}		± 30	V
Drain Current (DC)	I_D		-3	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-12	A
Allowable Power Dissipation	P_D		1.0	W
		$T_c = 25^\circ\text{C}$	30	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

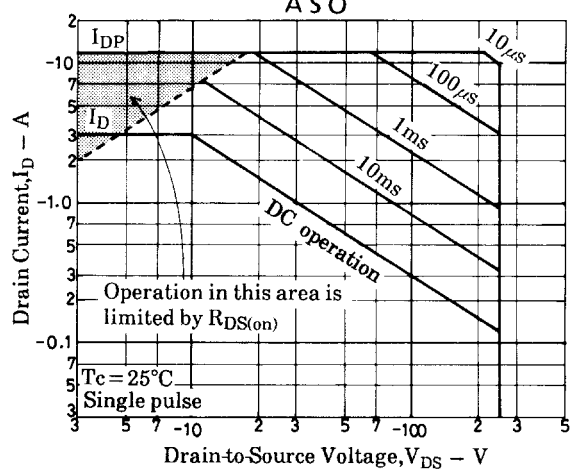
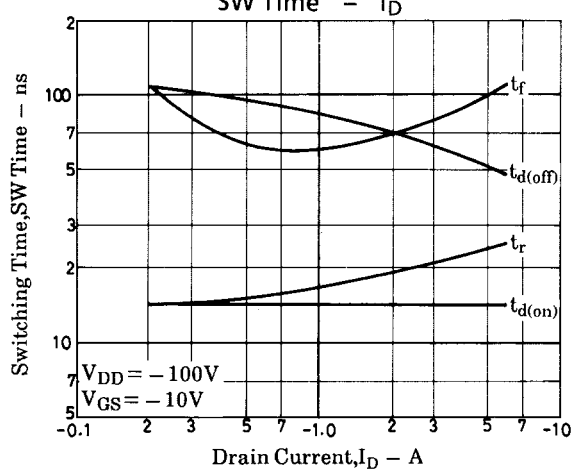
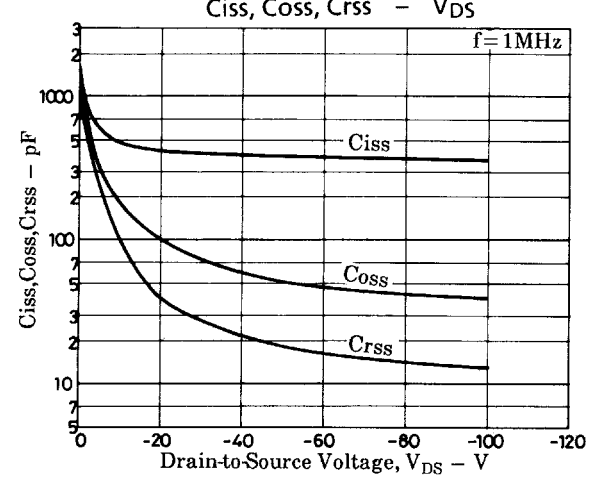
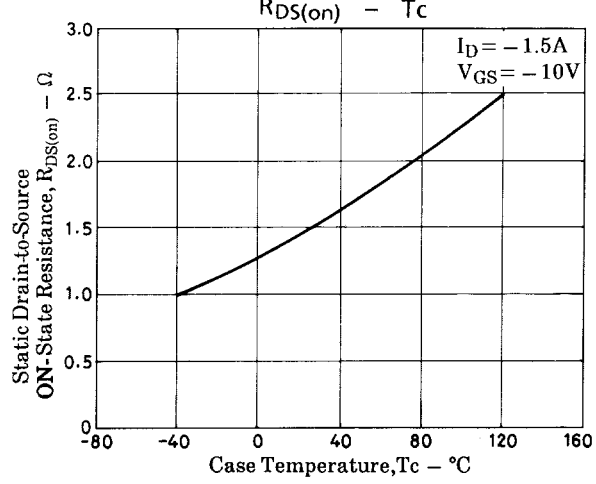
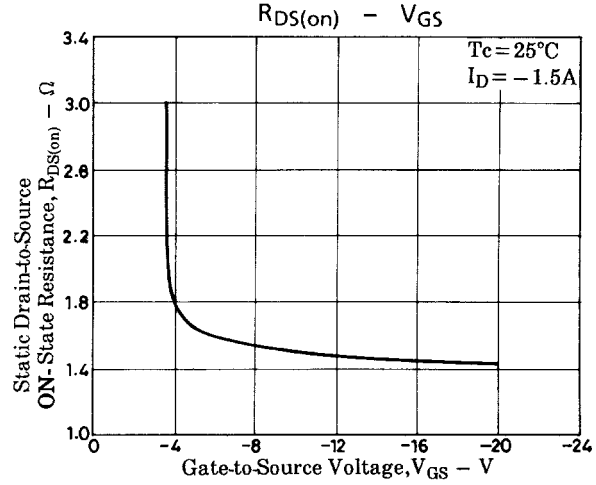
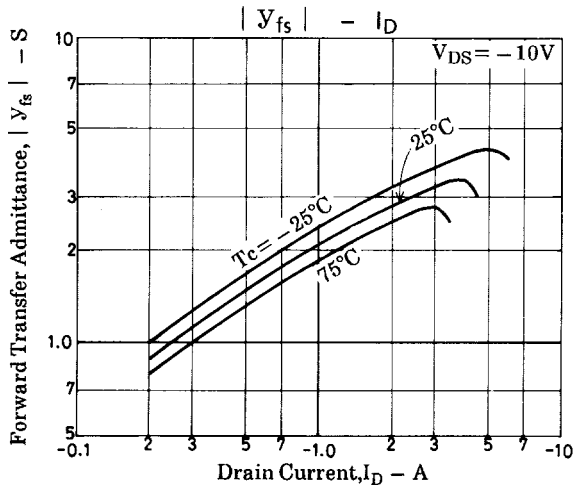
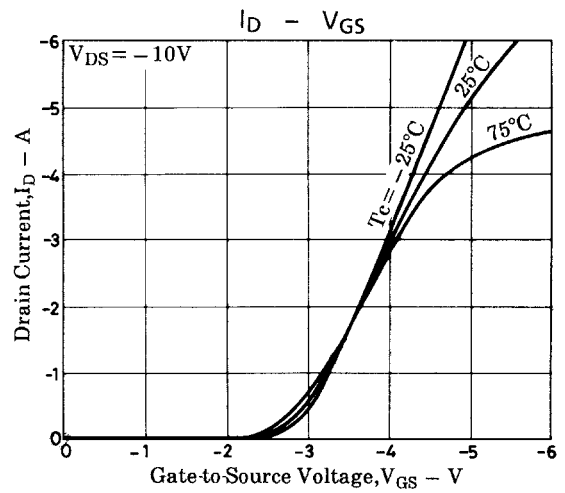
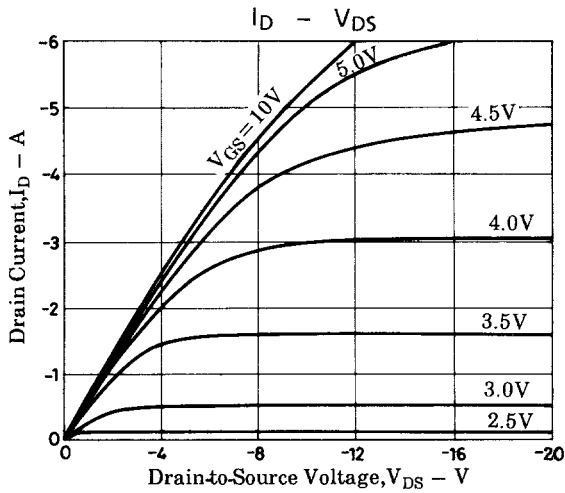
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0$	-250			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu\text{A}$, $V_{DS} = 0$	± 30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -250\text{V}$, $V_{GS} = 0$			-100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 25\text{V}$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-1.5		-2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -1.5\text{A}$	1.5	2.5		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = -1.5\text{A}$, $V_{GS} = -10\text{V}$		1.5	2.0	Ω
Input Capacitance	C_{iss}	$V_{DS} = -20\text{V}$, $f = 1\text{MHz}$		420		pF
Output Capacitance	C_{oss}	$V_{DS} = -20\text{V}$, $f = 1\text{MHz}$		100		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -20\text{V}$, $f = 1\text{MHz}$		40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		14		ns
Rise Time	t_r	See specified Test Circuit		18		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		75		ns
Fall Time	t_f	See specified Test Circuit		65		ns
Diode Forward Voltage	V_{SD}	$I_S = -3\text{A}$, $V_{GS} = 0$		-1.0	-1.5	V

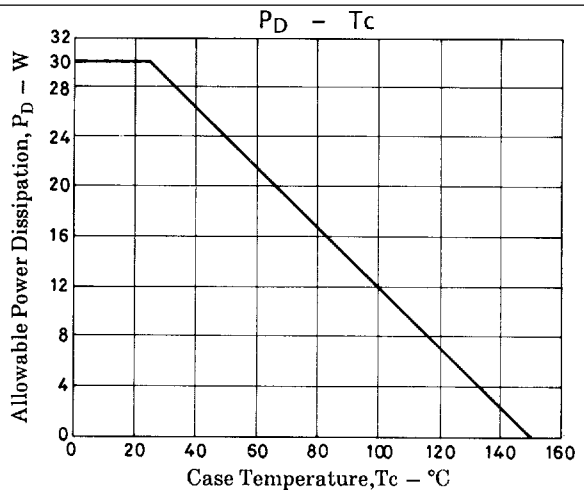
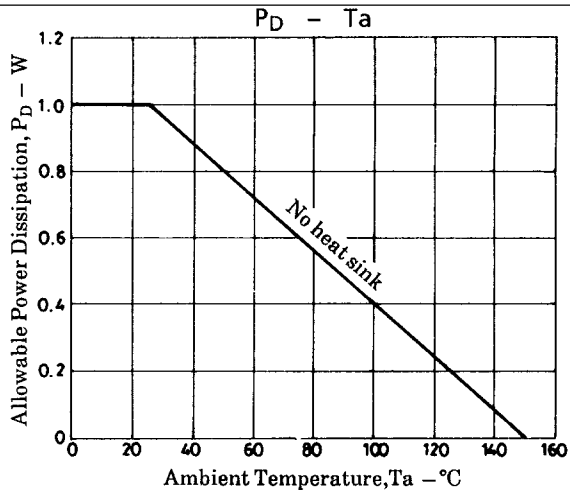
Switching Time Test Circuit



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