



# 2SJ189

## Ultrahigh-Speed Switching Applications

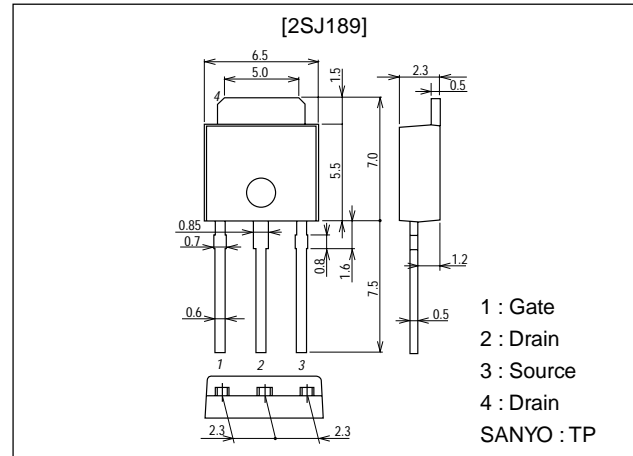
### Features

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

### Package Dimensions

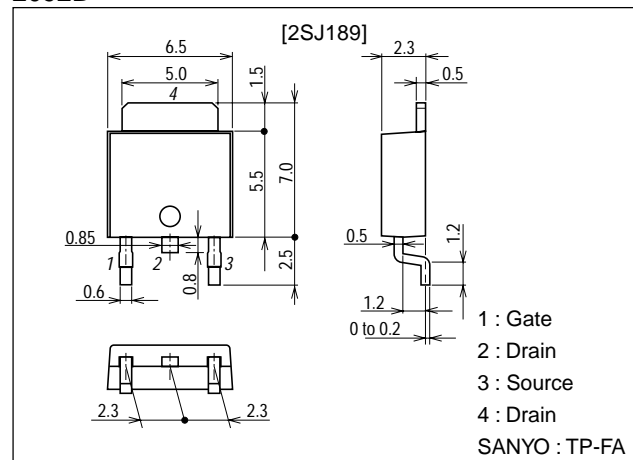
unit:mm

2083B



unit:mm

2092B



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## Specifications

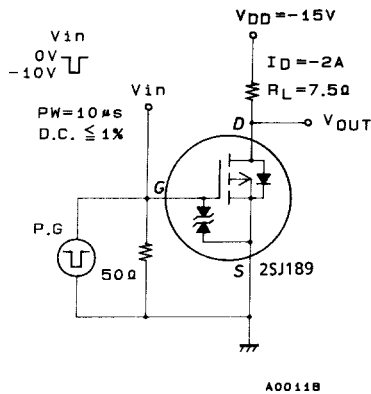
### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-30	V
Gate-to-Source Voltage	$V_{GSS}$		±15	V
Drain Current (DC)	$I_D$		-4	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-16	A
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ C$	30	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

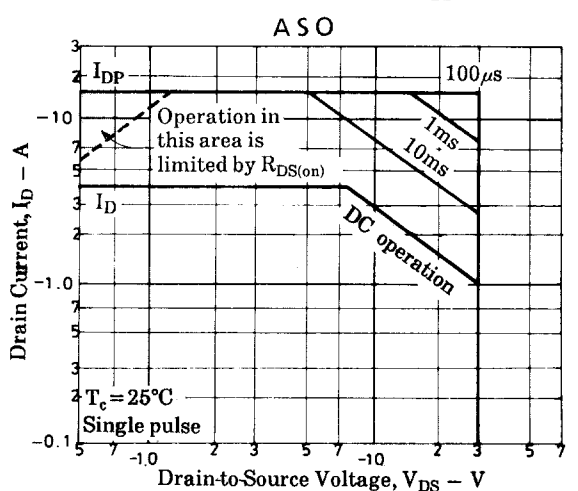
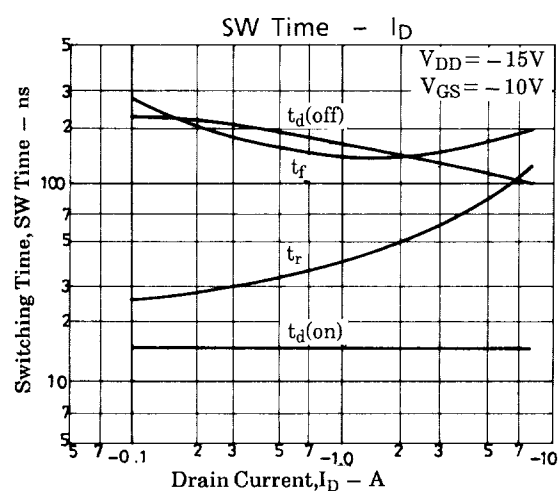
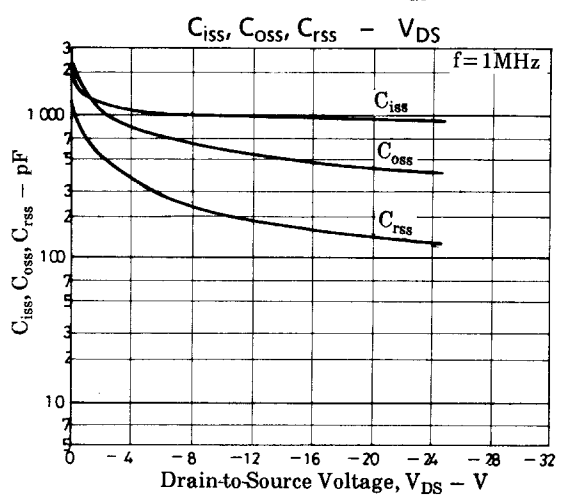
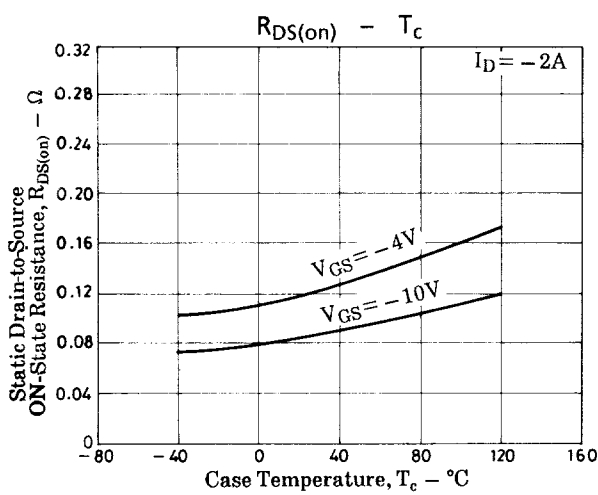
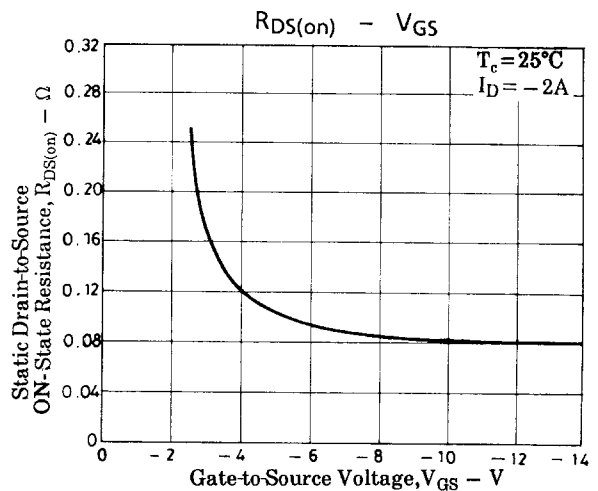
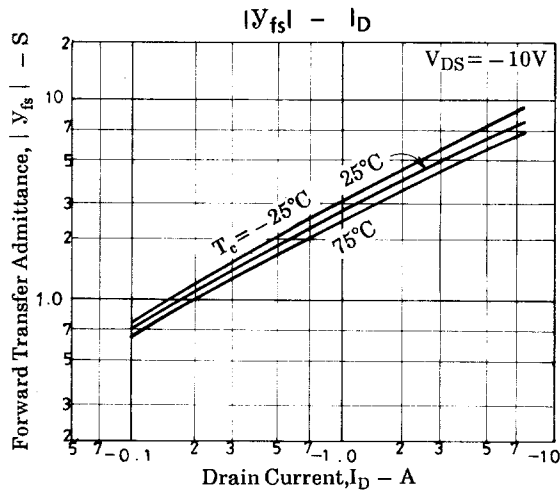
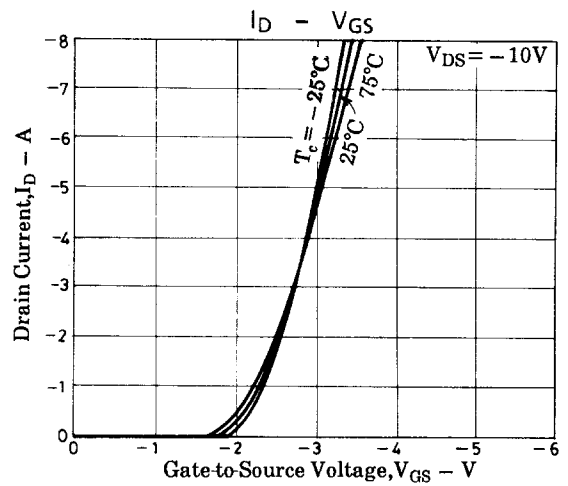
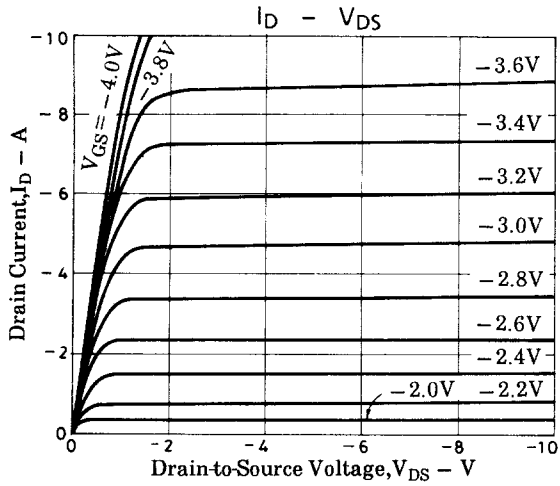
### Electrical Characteristics at Ta = 25°C

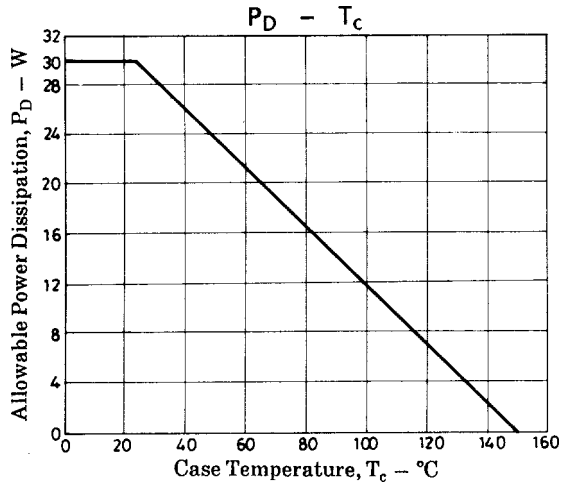
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA$ , $V_{GS} = 0$	-30			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu A$ , $V_{DS} = 0$	±15			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30V$ , $V_{GS} = 0$			-100	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 12V$ , $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$ , $I_D = -1mA$	-1.0		-2.0	V
Forward Transfer Admittance	yfs	$V_{DS} = -10V$ , $I_D = -2A$	2.5	4		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = -2A$ , $V_{GS} = -10V$		85	120	mΩ
	$R_{DS(on)}$	$I_D = -2A$ , $V_{GS} = -4V$		120	170	mΩ
Input Capacitance	Ciss	$V_{DS} = -10V$ , f=1MHz		1000		pF
Output Capacitance	Coss	$V_{DS} = -10V$ , f=1MHz		600		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = -10V$ , f=1MHz		220		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		15		ns
Rise Time	$t_r$	See specified Test Circuit		50		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		145		ns
Fall Time	$t_f$	See specified Test Circuit		145		ns
Diode Forward Voltage	$V_{SD}$	$I_S = -4A$ , $V_{GS} = 0$		-1.0	-1.5	V

### Switching Time Test Circuit



# 2SJ189





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