Ordering number:EN3762A

P-Channel Silicon MOSFET

2SJ189

Ultrahigh-Speed Switching Applications

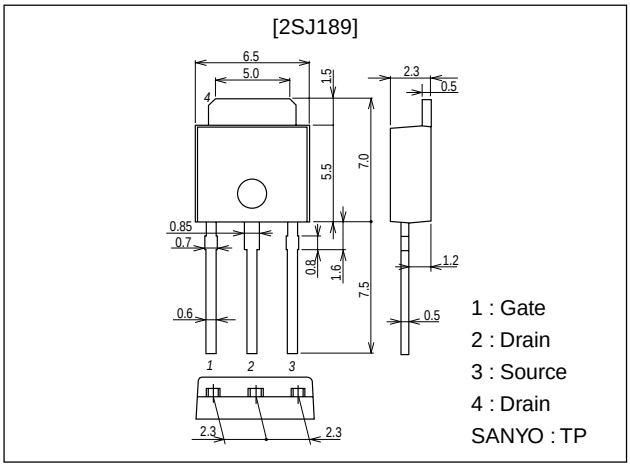
Features

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

Package Dimensions

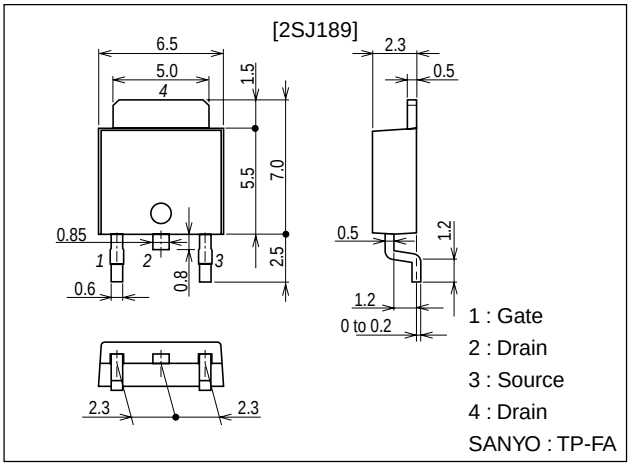
unit:mm

2083B



unit:mm

2092B



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■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges,or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Specifications

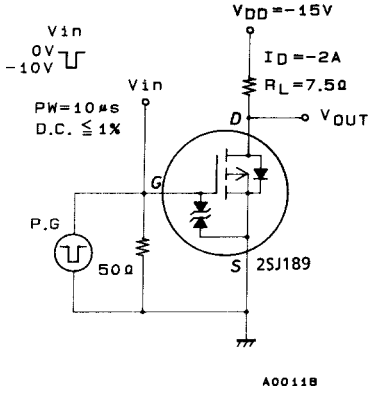
Absolute Maximum Ratings at Ta = 25˚C

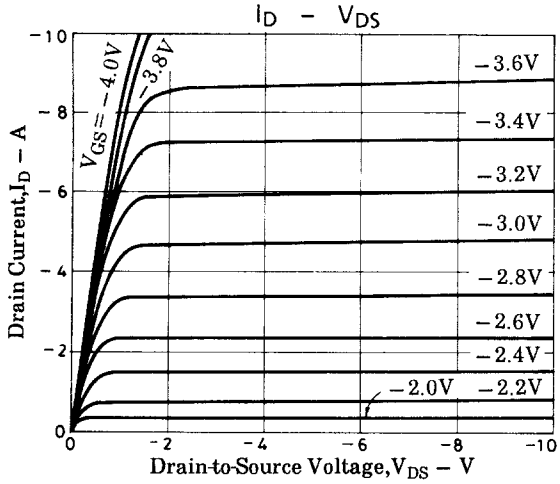
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		–30	V
Gate-to-Source Voltage	V_{GSS}		±15	V
Drain Current (DC)	I_D		–4	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–16	A
Allowable Power Dissipation	P_D	Tc=25˚C	30	W
Channel Temperature	Tch		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

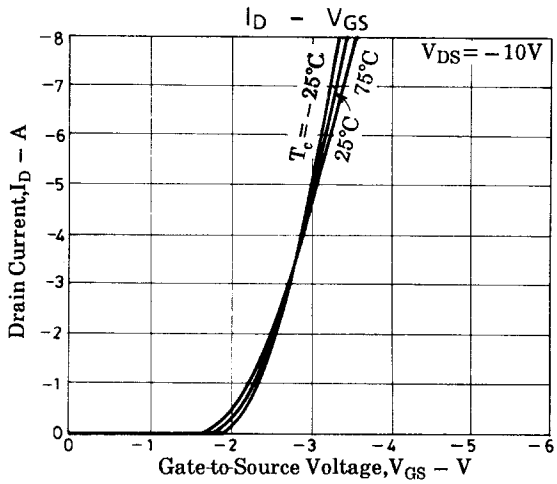
Electrical Characteristics at Ta = 25˚C

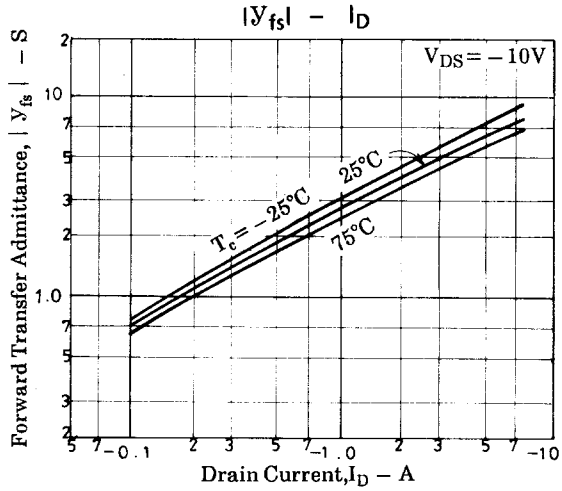
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=–1mA, V_{GS}=0	–30			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G=±100μA, V_{DS}=0	±15			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–30V, V_{GS}=0			–100	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±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

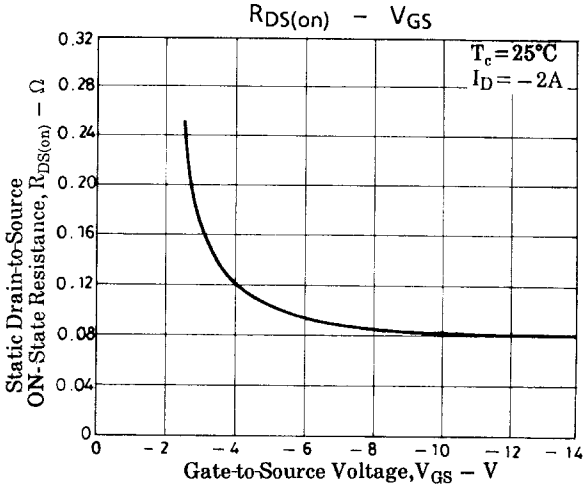
Switching Time Test Circuit

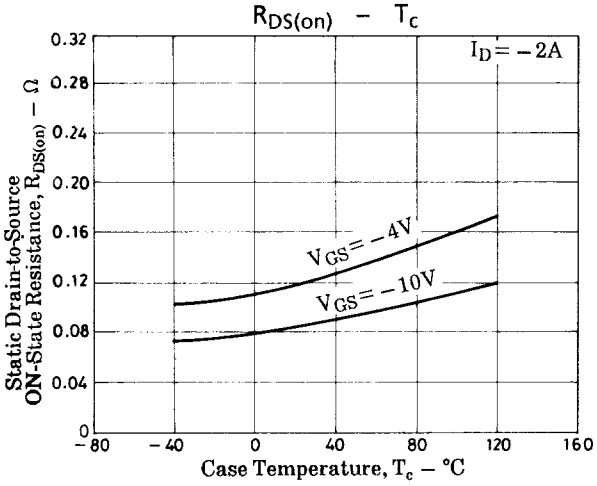


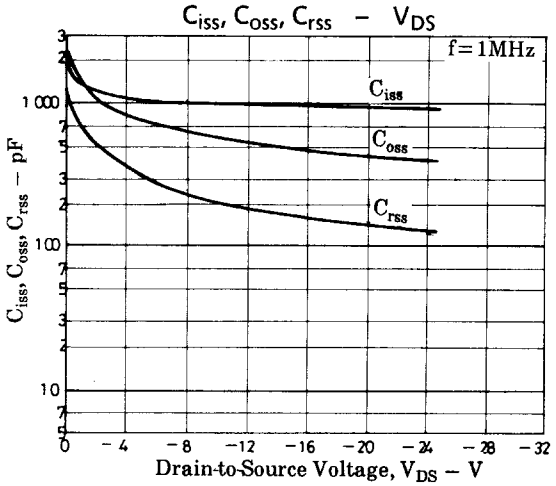

I_D – V_{DS}
Drain Current, I_D – A
Drain-to-Source Voltage, V_{DS} – V
V_{GS} = –4.0V
–3.8V
–3.6V
–3.4V
–3.2V
–3.0V
–2.8V
–2.6V
–2.4V
–2.2V
–2.0V

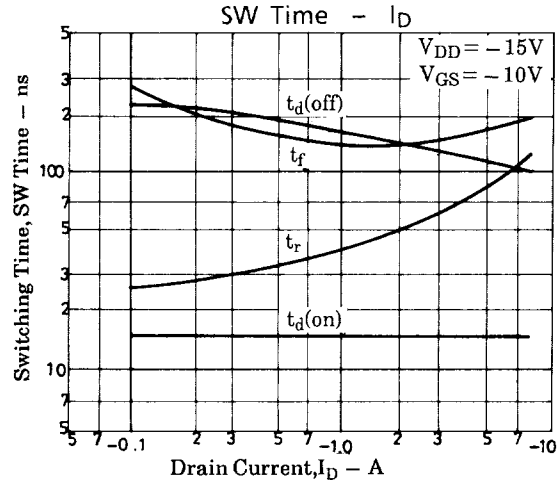

I_D – V_{GS}
V_{DS} = –10V
T_c = –25°C
25°C
75°C
Drain Current, I_D – A
Gate-to-Source Voltage, V_{GS} – V

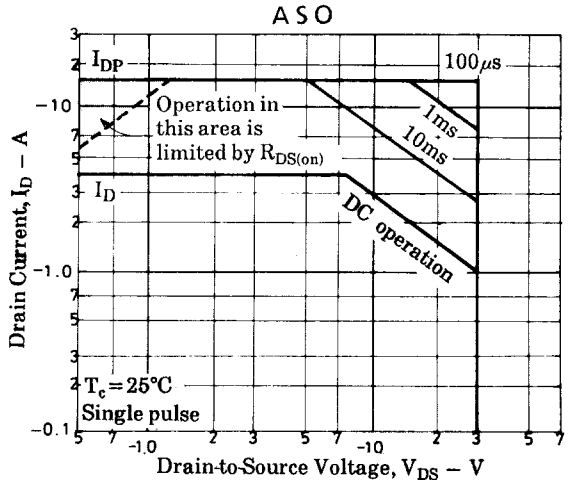

$|y_{fs}|$ – I_D
V_{DS} = –10V
T_c = –25°C
25°C
75°C
Forward Transfer Admittance, $|y_{fs}|$ – S
Drain Current, I_D – A

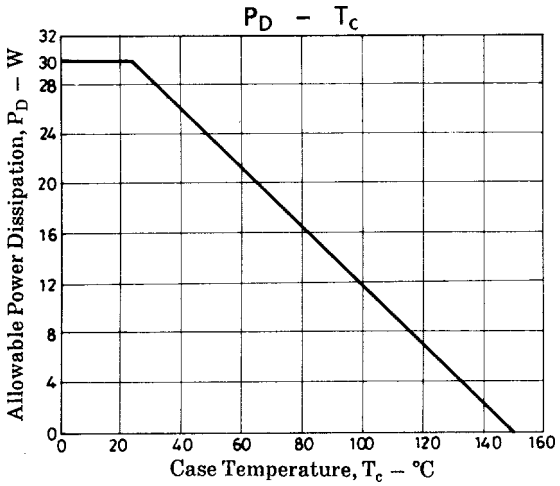

$R_{DS(on)}$ – V_{GS}
T_c = 25°C
I_D = –2A
Static Drain-to-Source ON-State Resistance, $R_{DS(on)}$ – Ω
Gate-to-Source Voltage, V_{GS} – V


$R_{DS(on)}$ – T_c
I_D = –2A
V_{GS} = –4V
V_{GS} = –10V
Static Drain-to-Source ON-State Resistance, $R_{DS(on)}$ – Ω
Case Temperature, T_c – °C


C_{iss}, C_{oss}, C_{rss} – V_{DS}
f = 1MHz
C_{iss}
C_{oss}
C_{rss}
C_{iss}, C_{oss}, C_{rss} – pF
Drain-to-Source Voltage, V_{DS} – V


SW Time – I_D
V_{DD} = –15V
V_{GS} = –10V
$t_{d(off)}$
t_f
t_r
$t_{d(on)}$
Switching Time, SW Time – ns
Drain Current, I_D – A


ASO
I_{DP}
I_D
100μs
1ms
10ms
DC operation
Operation in this area is limited by $R_{DS(on)}$
T_c = 25°C
Single pulse
Drain Current, I_D – A
Drain-to-Source Voltage, V_{DS} – V



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