Ordering number:EN3762A

P-Channel Silicon MOSFET

2SJ189

Ultrahigh-Speed Switching Applications

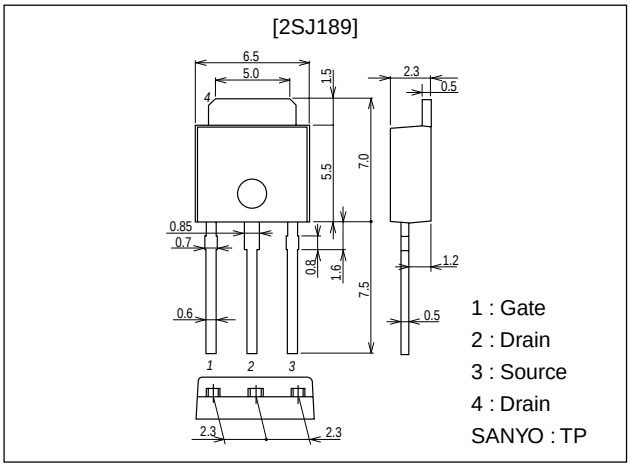
Features

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

Package Dimensions

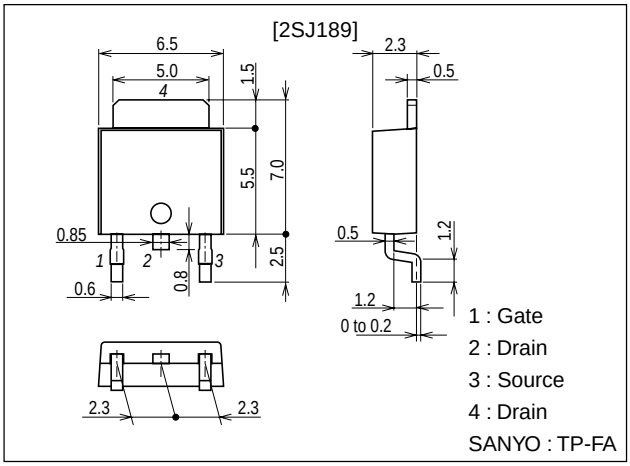
unit:mm

2083B



unit:mm

2092B



SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

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

Specifications

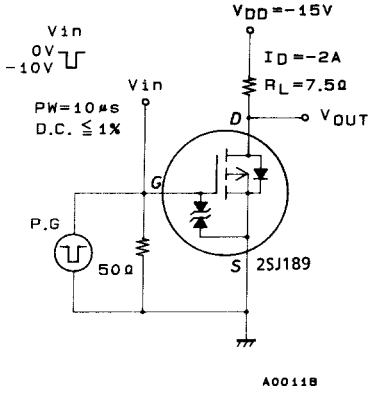
Absolute Maximum Ratings at Ta = 25˚C

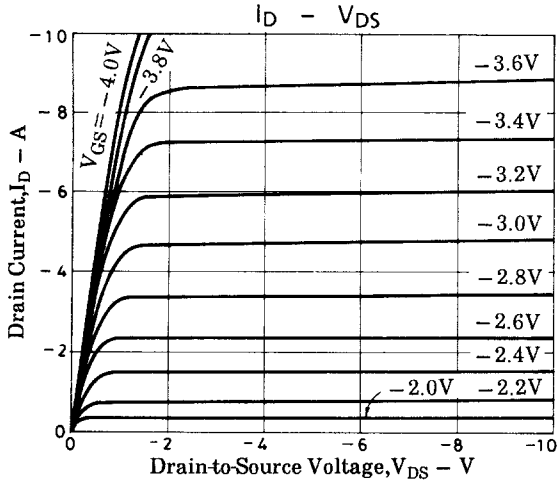
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		–30	V
Gate-to-Source Voltage	V_{GSS}		±15	V
Drain Current (DC)	I_D		–4	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–16	A
Allowable Power Dissipation	P_D	Tc=25˚C	30	W
Channel Temperature	Tch		150	˚C
Storage Temperature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

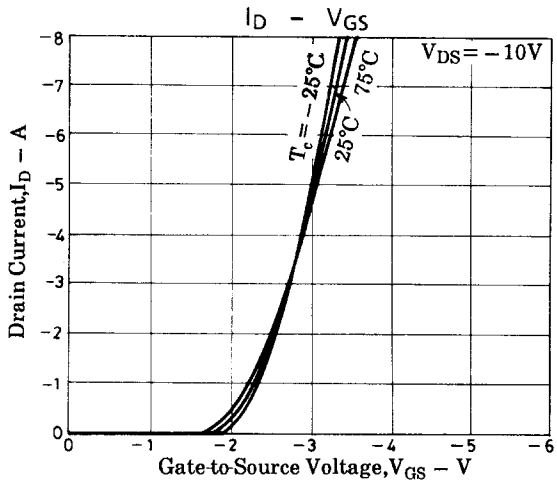
Electrical Characteristics at Ta = 25˚C

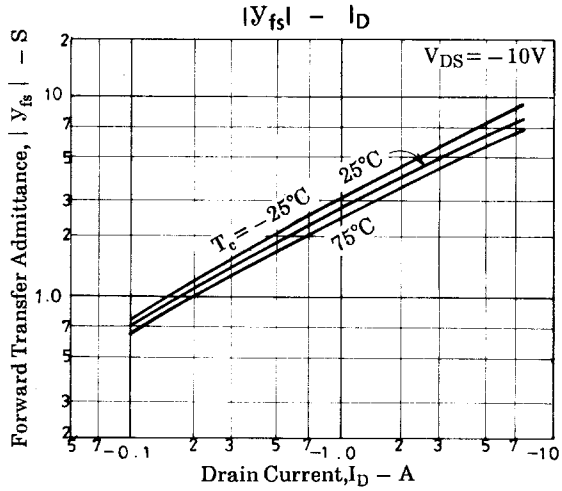
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=–1mA, V_{GS}=0	–30			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G=±100μA, V_{DS}=0	±15			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–30V, V_{GS}=0			–100	μA
Gate-to-Source Leakage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

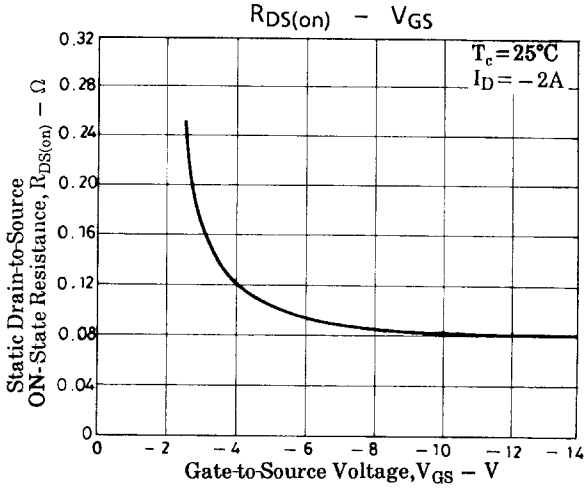
Switching Time Test Circuit

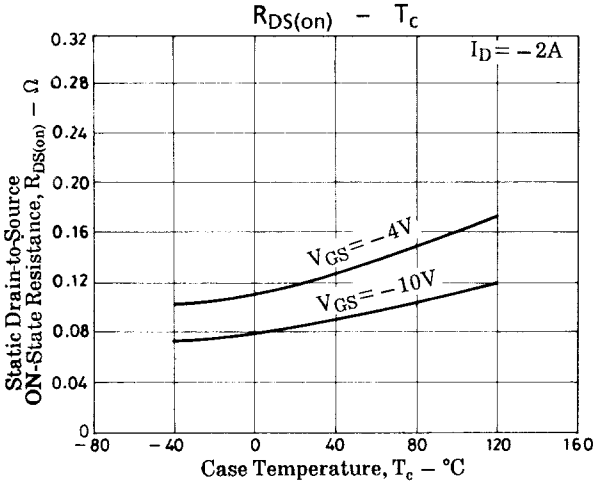


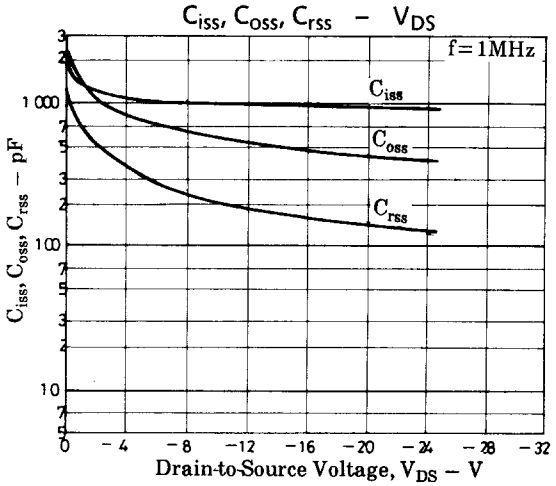

I_D – V_{DS}
Drain Current, I_D – A
Drain-to-Source Voltage, V_{DS} – V
V_{GS} = –4.0V
–3.8V
–3.6V
–3.4V
–3.2V
–3.0V
–2.8V
–2.6V
–2.4V
–2.2V
–2.0V

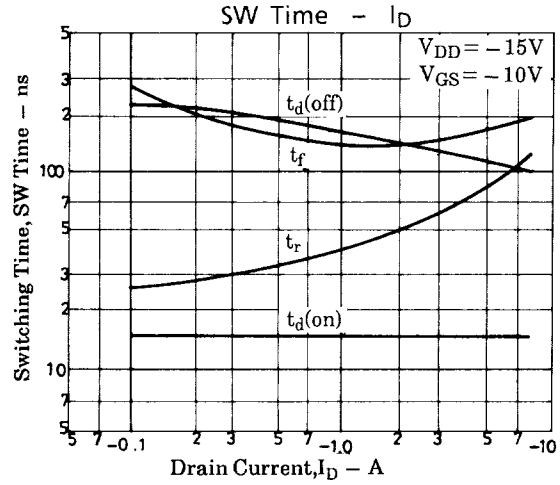

I_D – V_{GS}
V_{DS} = –10V
T_c = –25°C
25°C
75°C
Drain Current, I_D – A
Gate-to-Source Voltage, V_{GS} – V

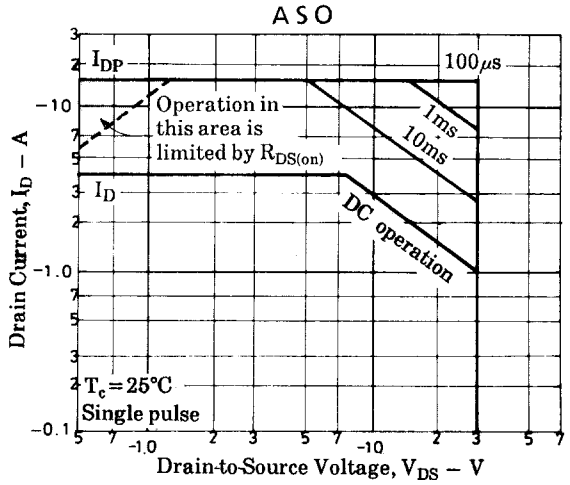

$|y_{fs}|$ – I_D
V_{DS} = –10V
T_c = –25°C
25°C
75°C
Forward Transfer Admittance, $|y_{fs}|$ – S
Drain Current, I_D – A


$R_{DS(on)}$ – 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