Ordering number:ENN6409

P-Channel Silicon MOSFET

2SJ583LS

Ultrahigh-Speed Switching Applications

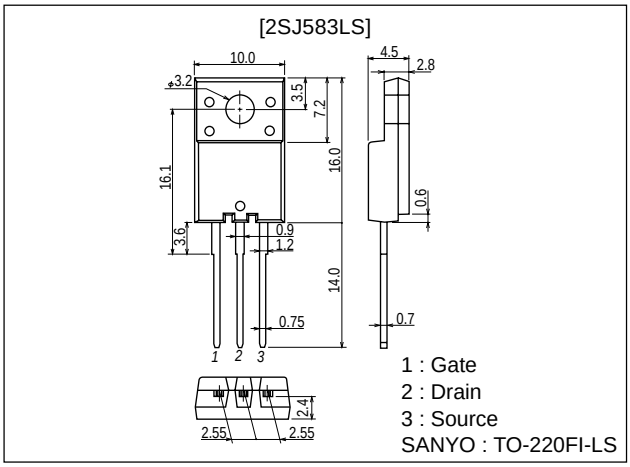
Features

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

Package Dimensions

unit:mm

2078B



Specifications

Absolute Maximum Ratings at Ta = 25˚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		–3.5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–14	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C	20	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	–250			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G=±100μA, V_{DS}=0	±30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–250V, V_{GS}=0			–100	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±25V, V_{DS}=0			±10	μA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=–10V, I_D=–1mA	–3.5		–5.0	V
Forward Transfer Admittance	| yfs |	V_{DS}=–10V, I_D=–2A	1.2	2.0		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)$	I_D=–2A, V_{GS}=–10V		1.2	1.5	Ω

Continued on next page.

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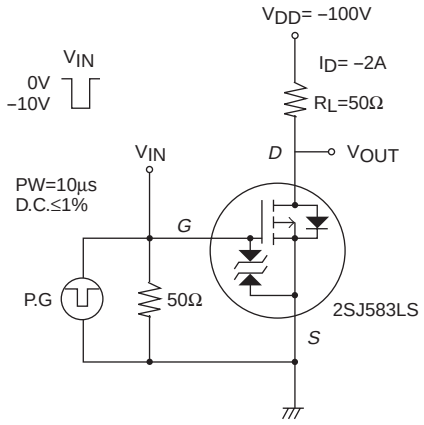
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

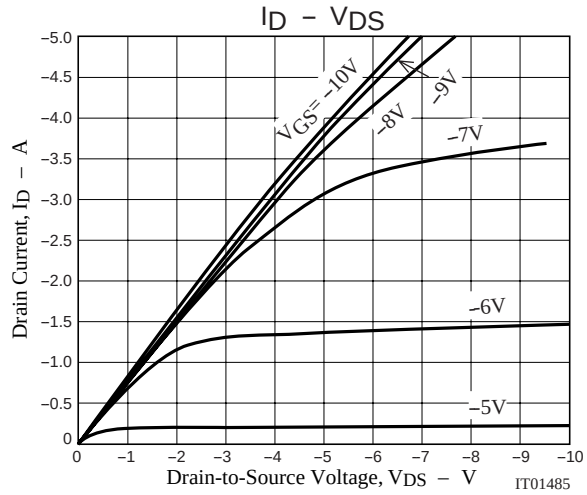
Continued from preceding page.

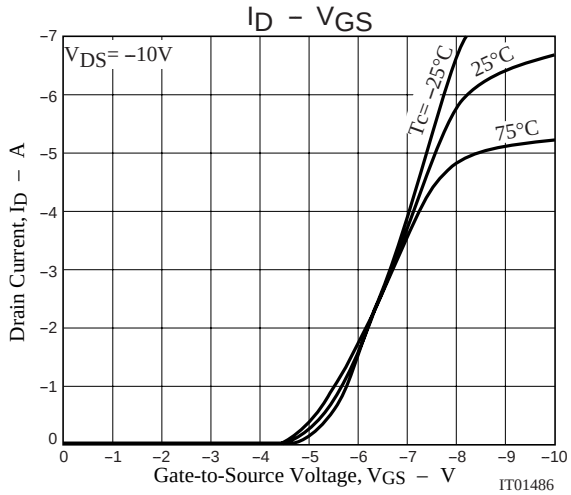
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=–20V, f=1MHz		360		pF
Output Capacitance	Coss	V_{DS}=–20V, f=1MHz		95		pF
Reverse Transfer Capacitance	Crss	V_{DS}=–20V, f=1MHz		40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		21		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		45		ns
Fall Time	t_f	See specified Test Circuit		16.5		ns
Total Gate Charge	Qg	V_{DS}=–100V, V_{GS}=–10V, I_D=–3.5A		18		nC
Gate-to-Source Charge	Qgs	V_{DS}=–100V, V_{GS}=–10V, I_D=–3.5A		3		nC
Gate-to-Drain "Miller" Charge	Qgd	V_{DS}=–100V, V_{GS}=–10V, I_D=–3.5A		9		nC
Diode Forward Voltage	V_{SD}	I_S=–3.5A, V_{GS}=0		–0.9	–1.5	V

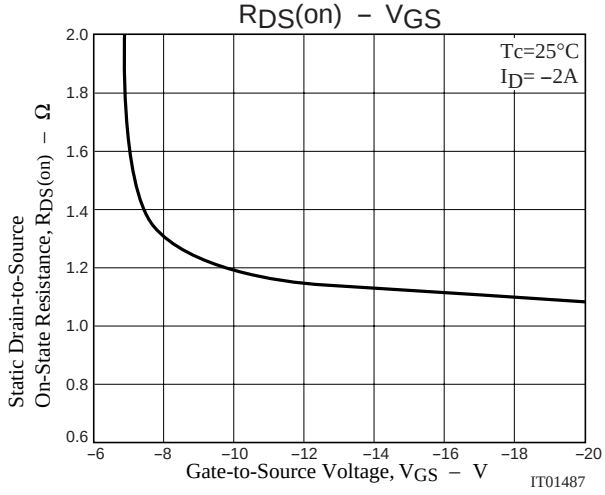
Marking : J583

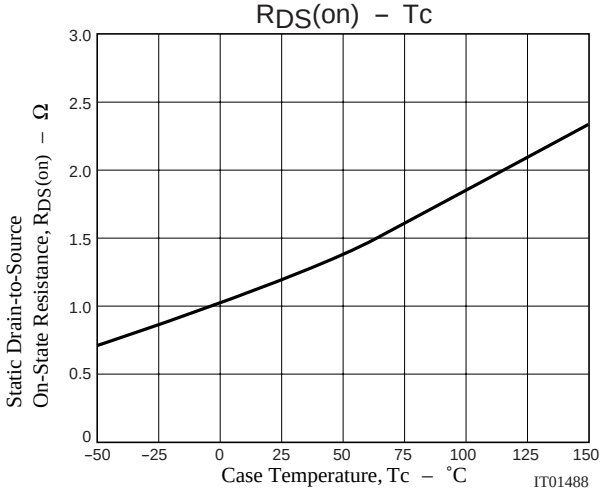
Switching Time Test Circuit

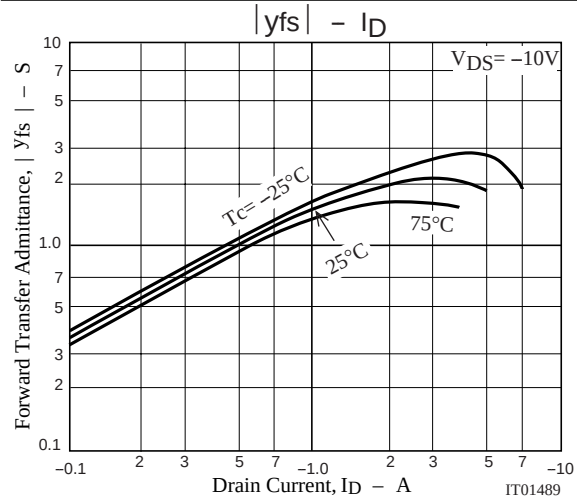


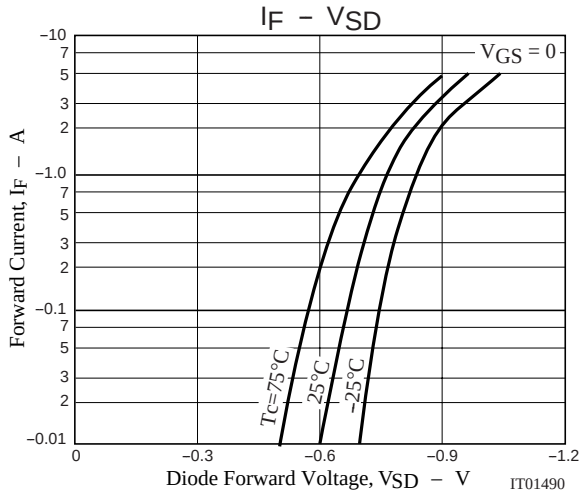


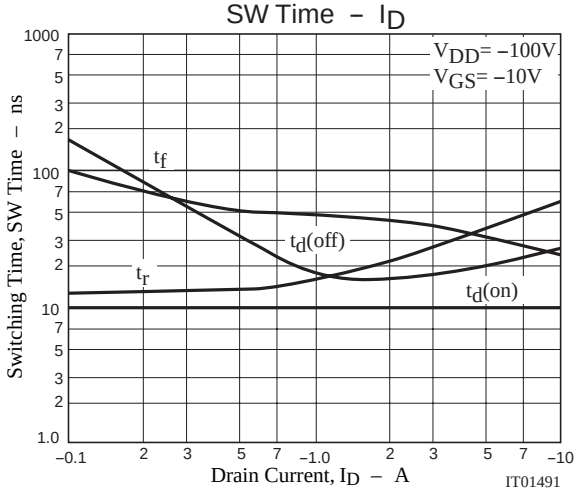


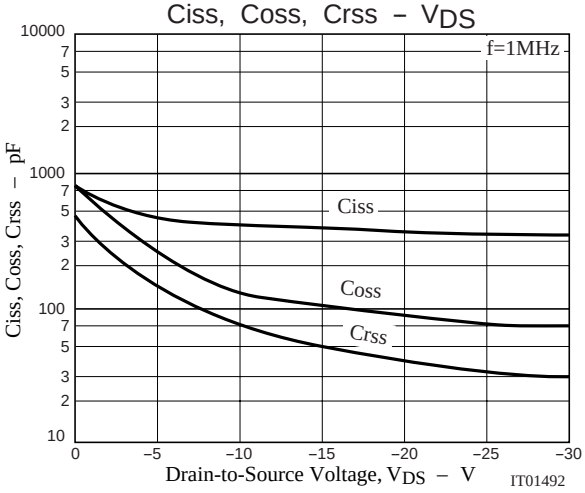


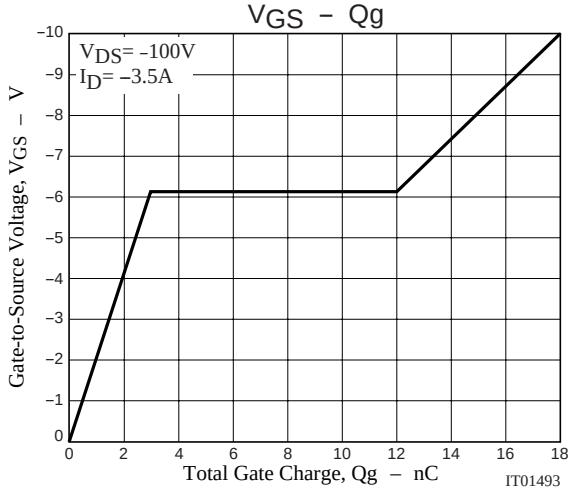


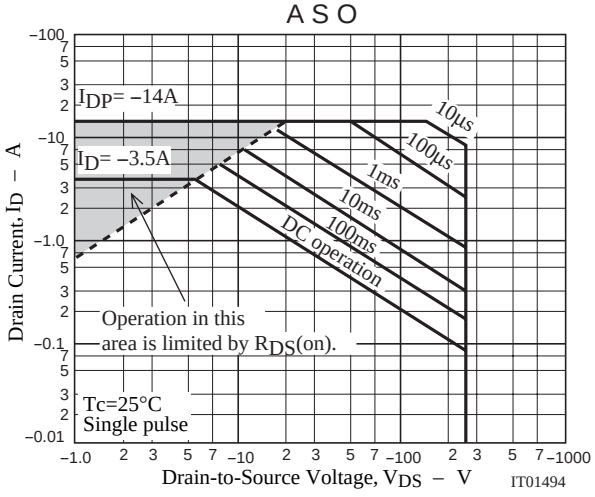

|yfs| – ID
VDS= –10V
Tc= –25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT01489

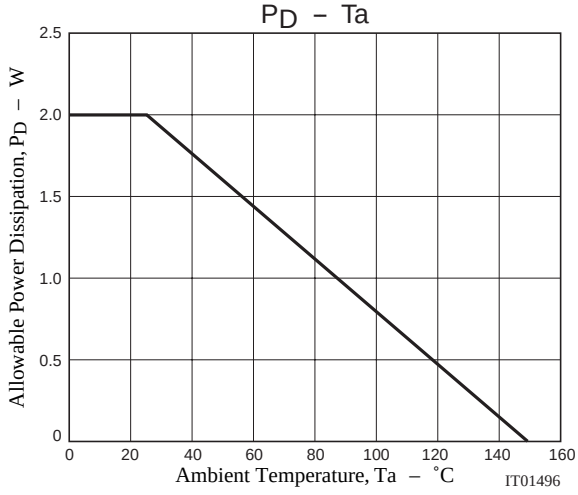

IF – VSD
VGS = 0
Tc=75°C
25°C
–25°C
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT01490

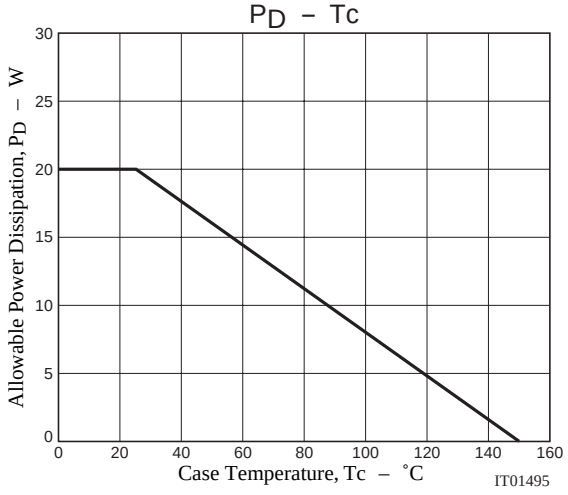

SW Time – ID
VDD= –100V
VGS= –10V
tf
td(off)
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT01491


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT01492


VGS – Qg
VDS= –100V
ID= –3.5A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT01493


A S O
IDP= –14A
ID= –3.5A
10μs
100μs
1ms
10ms
100ms
DC operation
Operation in this
area is limited by RDS(on).
Tc=25°C
Single pulse
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT01494


PD – Ta
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT01496


PD – Tc
Allowable Power Dissipation, PD – W
Case Temperature, Tc – °C
IT01495