Ordering number:ENN6435

P-Channel Silicon MOSFET

2SJ520

Load Switching Applications

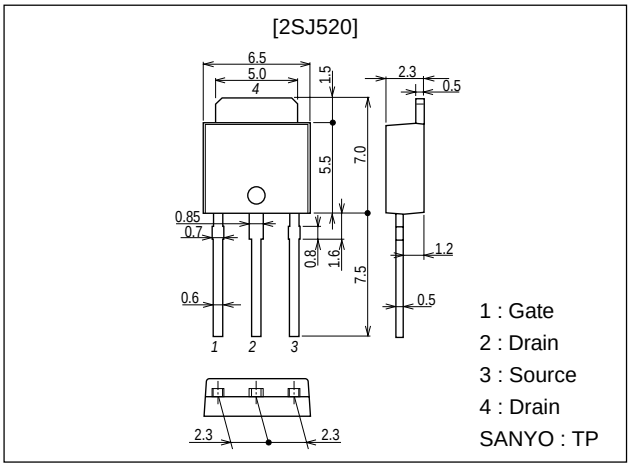
Features

- Low ON resistance.
- 2.5V drive.

Package Dimensions

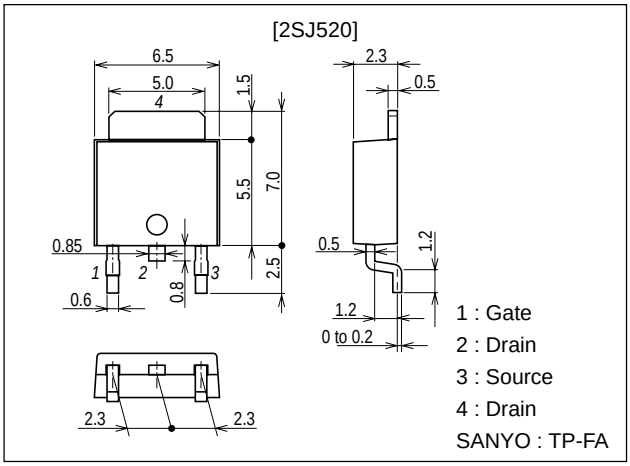
unit:mm

2083B



unit:mm

2092B



SANYO Electric Co.,Ltd. Semiconductor Company

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

Specifications

Absolute Maximum Ratings at Ta = 25˚C

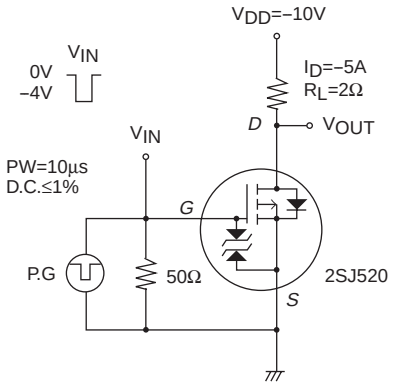
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		–20	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		–10	A
Drain Current (Pulse)	I_{DP}	PW≤10µs, duty cycle≤1%	–40	A
Allowable Power Dissipation	P_D		1	W
		Tc=25˚C	20	W
Channel Temperature	Tch		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

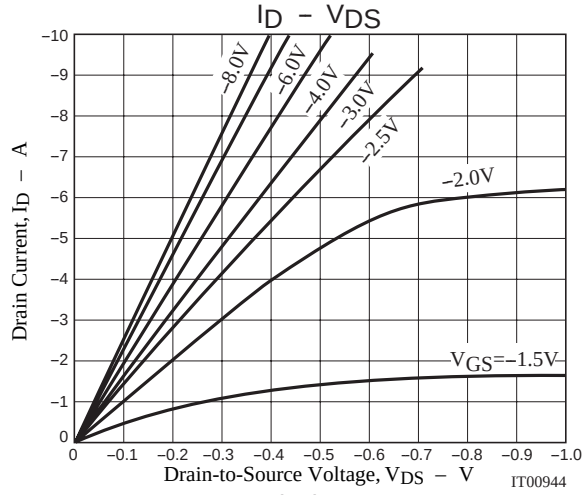
Electrical Characteristics at Ta = 25˚C

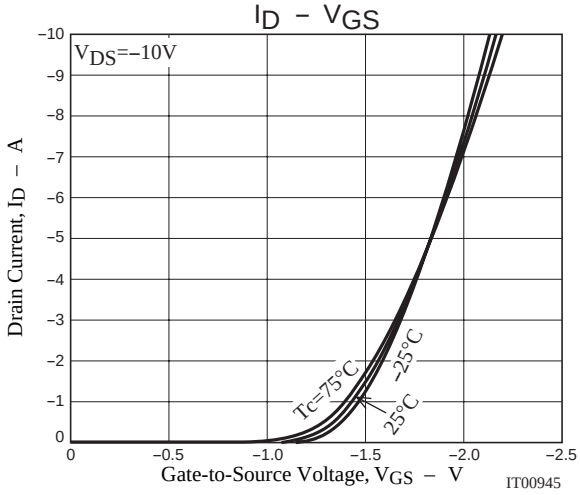
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=–1mA, V_{GS}=0	–20			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–20V, V_{GS}=0			–10	µA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0			±10	µA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=–10V, I_D=–1mA	–0.4		–1.3	V
Forward Transfer Admittance	| yfs |	V_{DS}=–10V, I_D=–5A	8	12		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=–5A, V_{GS}=–4V		48	62	mΩ
	$R_{DS}(on)2$	I_D=–1A, V_{GS}=–2.5V		70	100	mΩ
Input Capacitance	Ciss	V_{DS}=–10V, f=1MHz		950		pF
Output Capacitance	Coss	V_{DS}=–10V, f=1MHz		530		pF
Reverse Transfer Capacitance	Crss	V_{DS}=–10V, f=1MHz		160		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		20		ns
Rise Time	t_r	See specified Test Circuit		200		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		230		ns
Fall Time	t_f	See specified Test Circuit		230		ns
Total Gate Charge	Qg	V_{DS}=–10V, V_{GS}=–10V, I_D=–5A		30		nC
Gate-to-Source Charge	Qgs	V_{DS}=–10V, V_{GS}=–10V, I_D=–5A		5		nC
Gate-to-Drain "Miller" Charge	Qgd	V_{DS}=–10V, V_{GS}=–10V, I_D=–5A		7		nC
Diode Forward Voltage	V_{SD}	I_S=–5A, V_{GS}=0		–1.0	–1.5	V

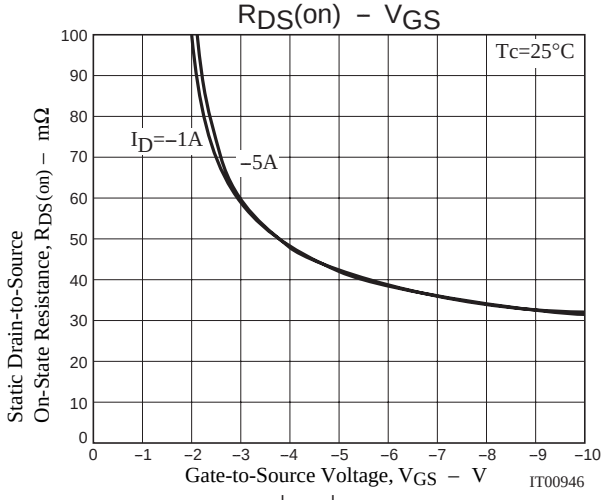
Marking : J520

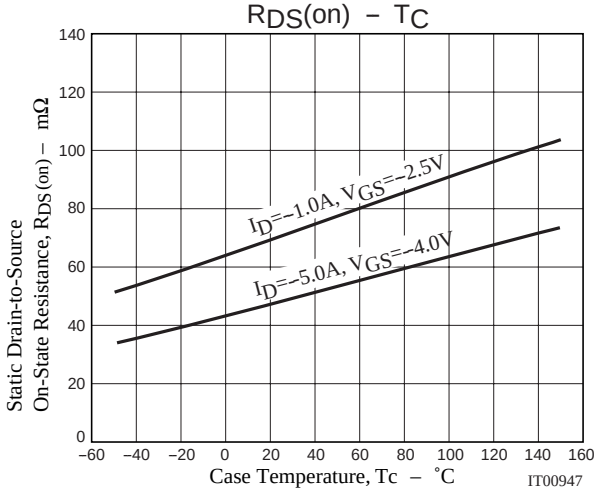
Switching Time Test Circuit

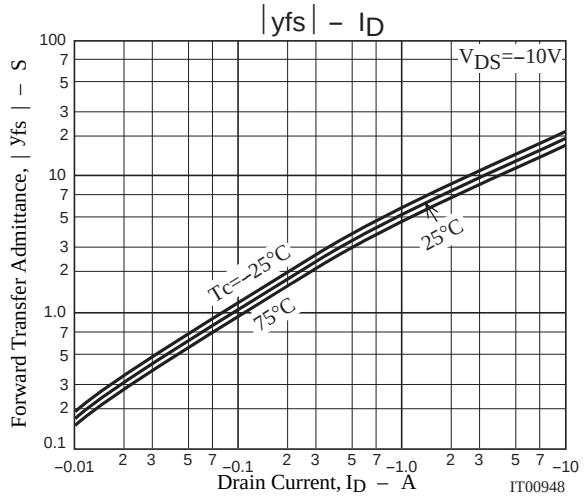


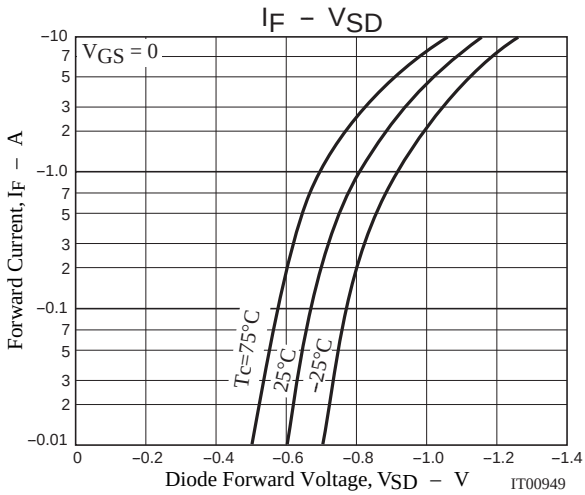

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
–8.0V
–6.0V
–4.0V
–3.0V
–2.5V
–2.0V
VGS=–1.5V
IT00944

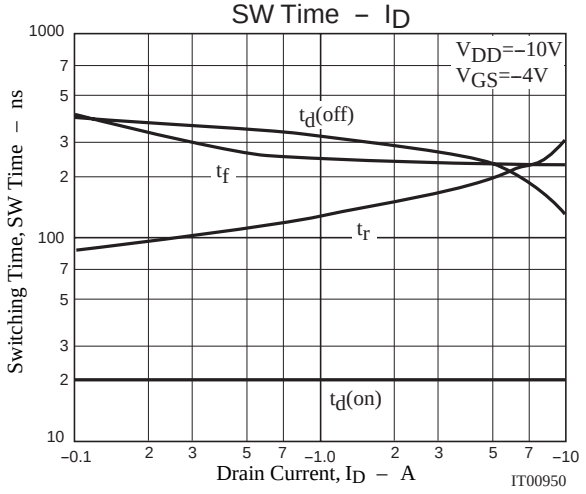

ID – VGS
VDS=–10V
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
Tc=75°C
–25°C
25°C
IT00945

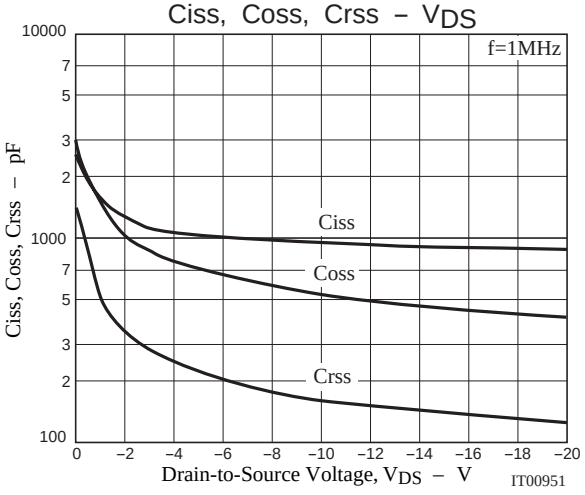

RDS(on) – VGS
Tc=25°C
ID=–1A
–5A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT00946


RDS(on) – Tc
ID=–1.0A, VGS=–2.5V
ID=–5.0A, VGS=–4.0V
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Case Temperature, Tc – °C
IT00947


|yfs| – ID
VDS=–10V
Tc=–25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT00948


IF – VSD
VGS = 0
Tc=75°C
25°C
–25°C
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT00949


SW Time – ID
VDD=–10V
VGS=–4V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT00950


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT00951