Ordering number : EN6681A

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

3LP01S — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

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}		±10	V
Drain Current (DC)	I_D		−0.1	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−0.4	A
Allowable Power Dissipation	P_D		0.15	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}=0V	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=-100μA	−0.4		−1.4	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=-50mA	80	110		mS
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=-50mA, V_{GS}=-4V		8	10.4	Ω
	R_{DS}(on)2	I_D=-30mA, V_{GS}=-2.5V		11	15.4	Ω
	R_{DS}(on)3	I_D=-1mA, V_{GS}=-1.5V		27	54	Ω
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		7.5		pF
Output Capacitance	Coss	V_{DS}=−10V, f=1MHz		5.7		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−10V, f=1MHz		1.8		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		24		ns
Rise Time	t_r	See specified Test Circuit.		55		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		120		ns
Fall Time	t_f	See specified Test Circuit.		130		ns

Marking : XA

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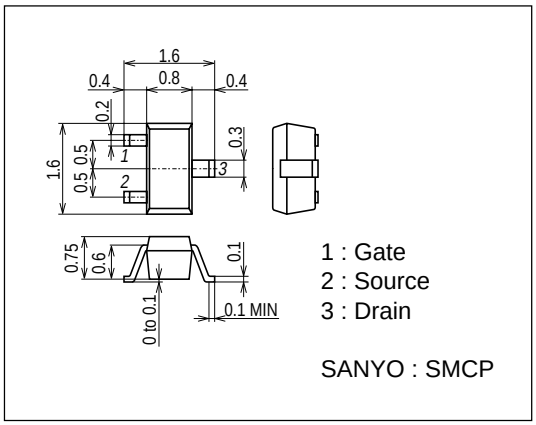
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V_{DS}=–10V, V_{GS}=–10V, I_D=–100mA		1.43		nC
Gate-to-Source Charge	Qgs	V_{DS}=–10V, V_{GS}=–10V, I_D=–100mA		0.18		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=–10V, V_{GS}=–10V, I_D=–100mA		0.25		nC
Diode Forward Voltage	V_{SD}	I_S=–100mA, V_{GS}=0V		–0.83	–1.2	V

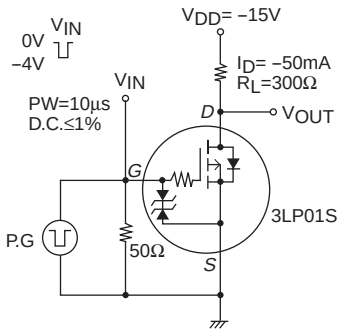
Package Dimensions

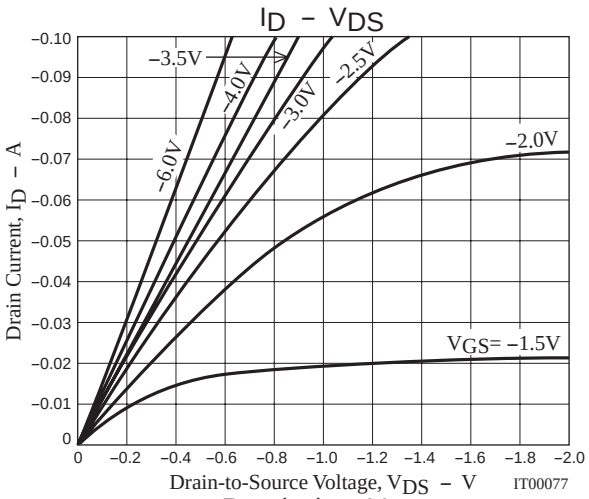
unit : mm

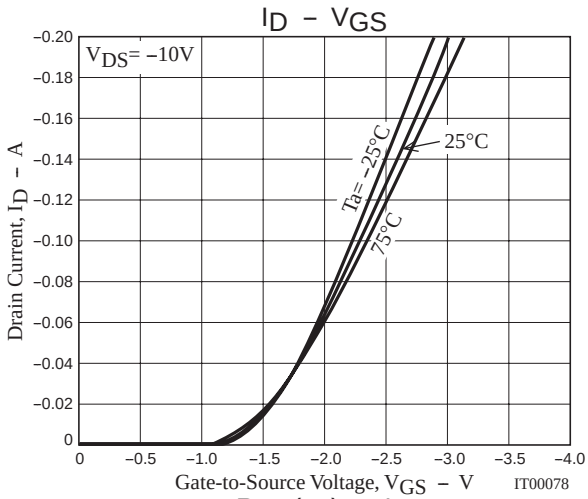
7027-004

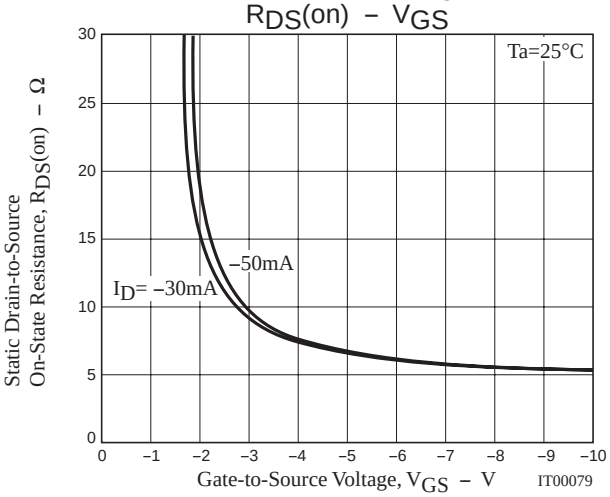


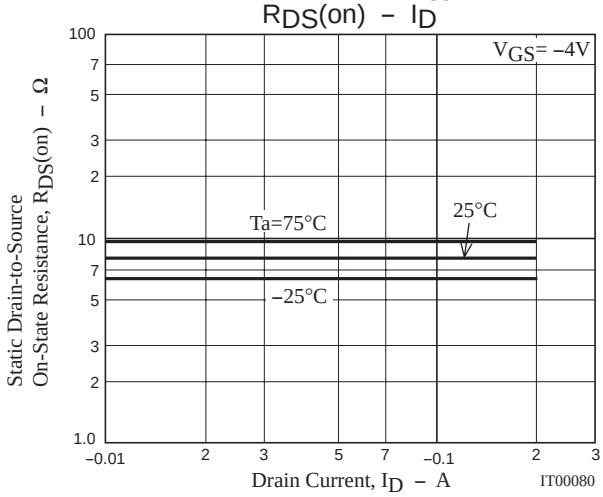
Switching Time Test Circuit

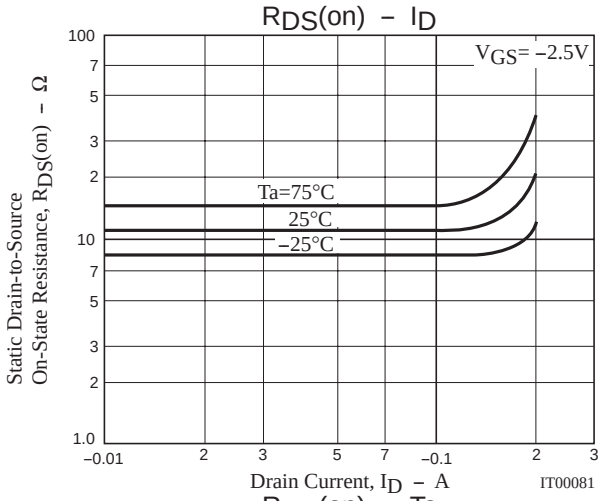


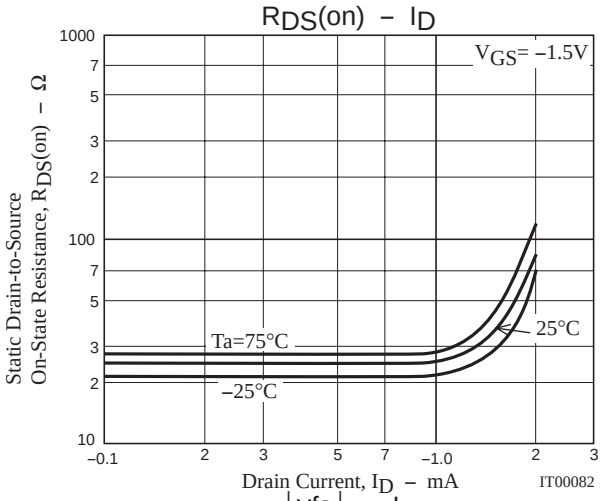


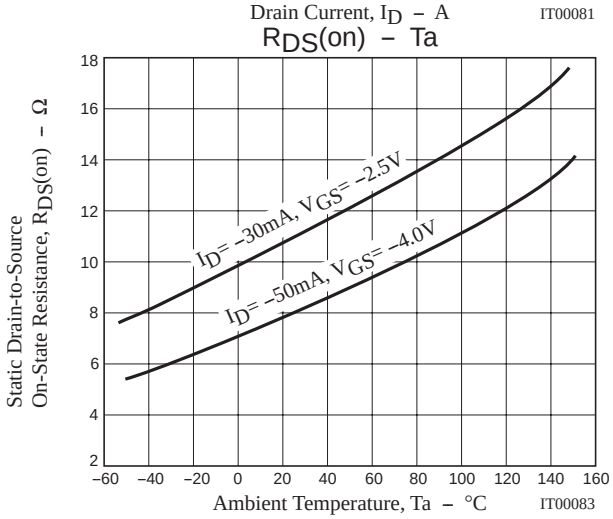


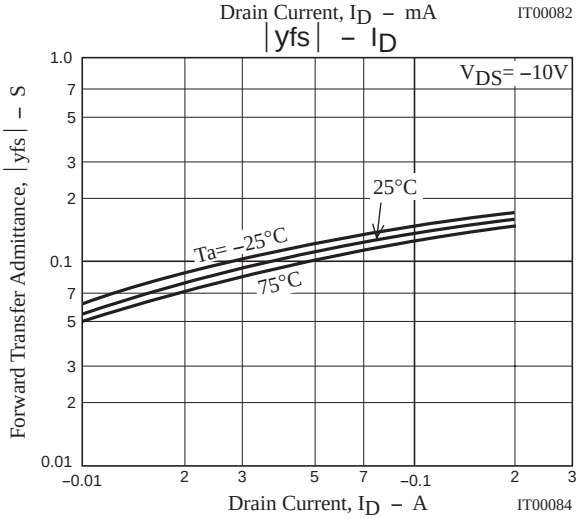


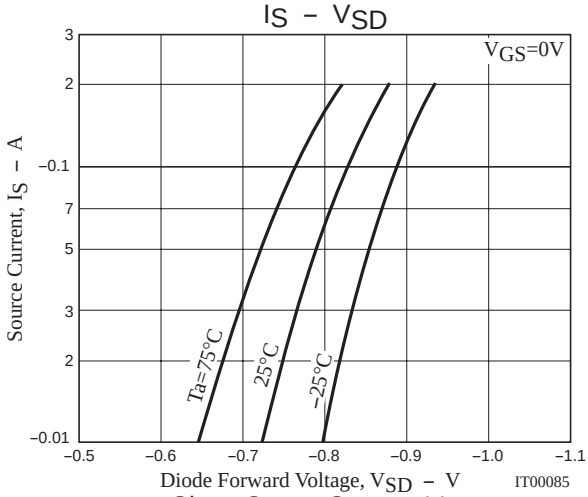


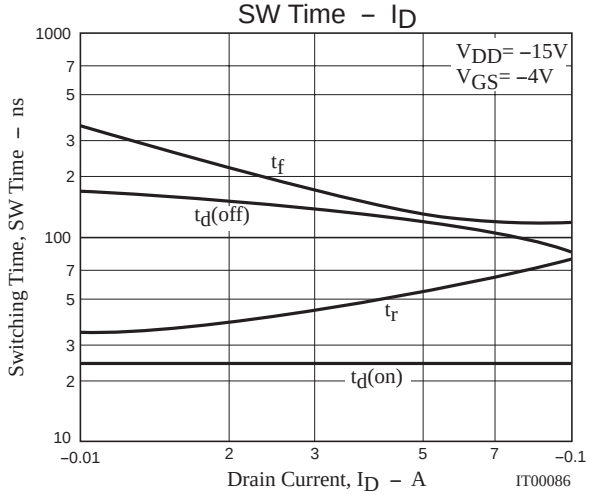


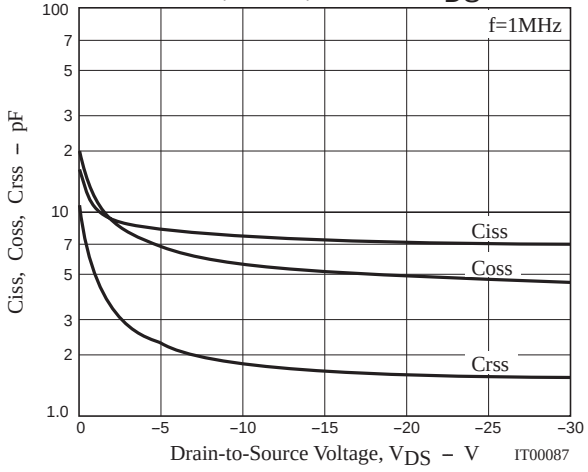


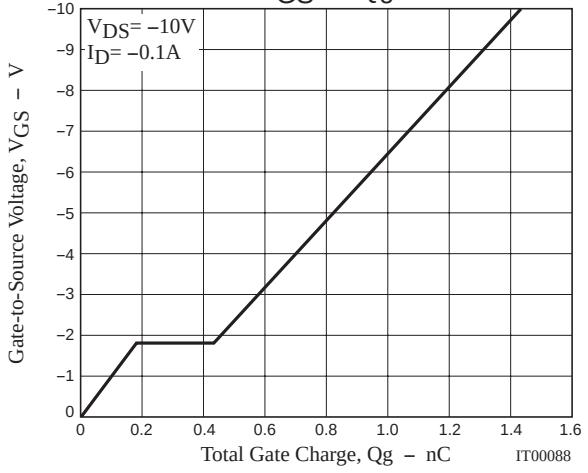


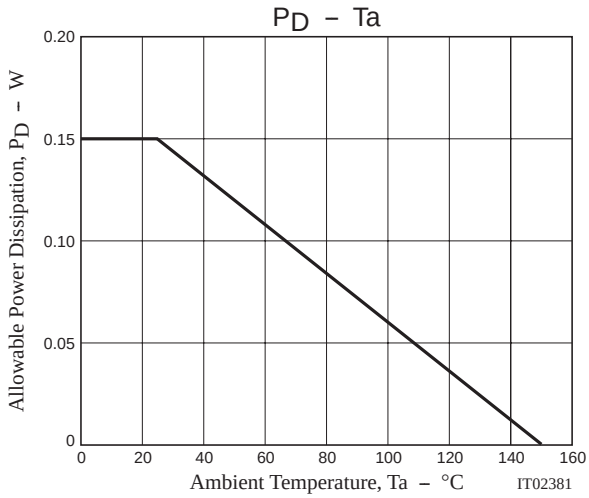












Note on usage : Since the 3LP01S is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.