



Ultrahigh-Speed Switching Applications

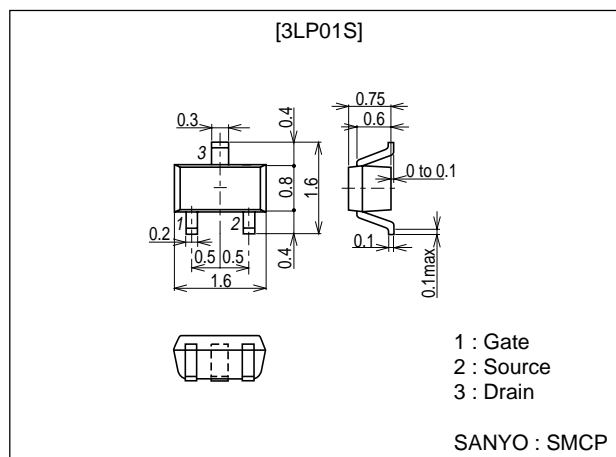
Features

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

Package Dimensions

unit : mm

2192



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	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, 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 =-100μA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	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

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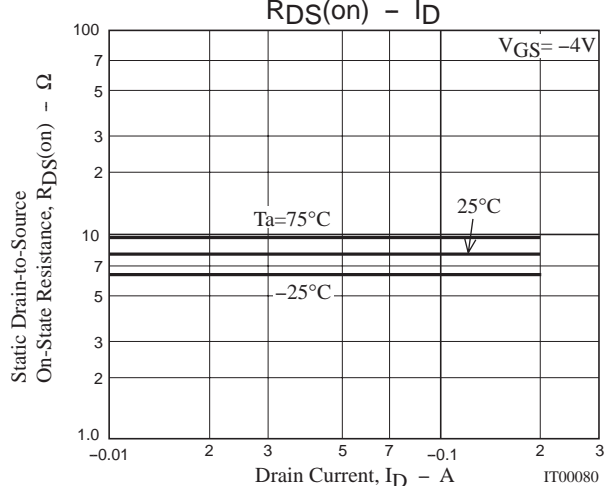
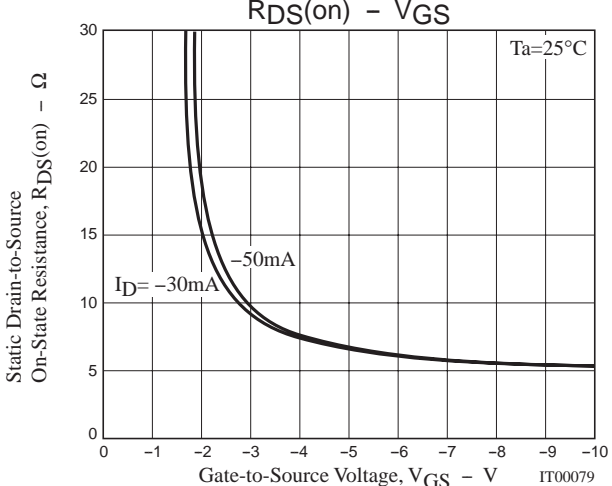
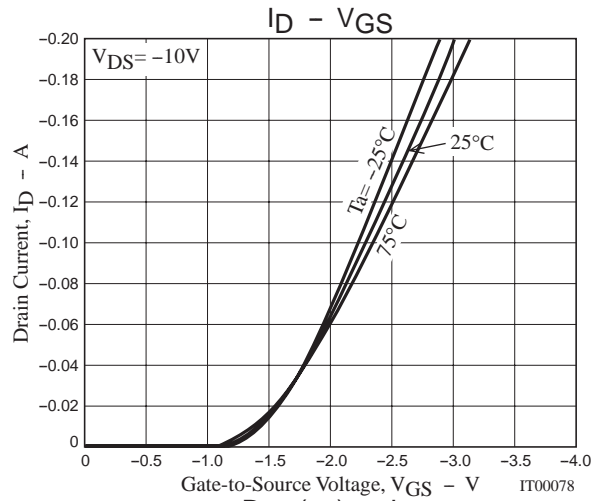
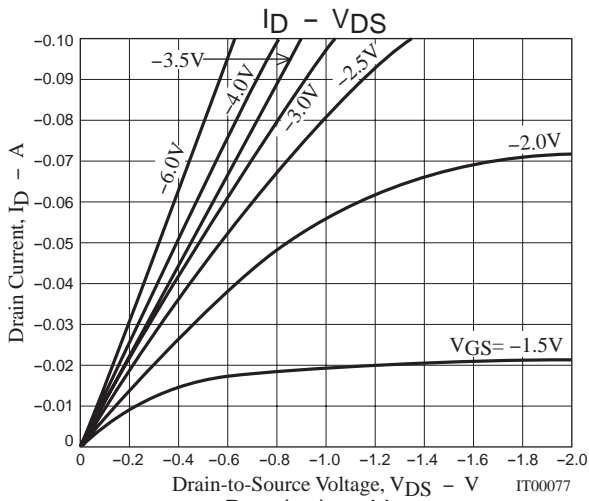
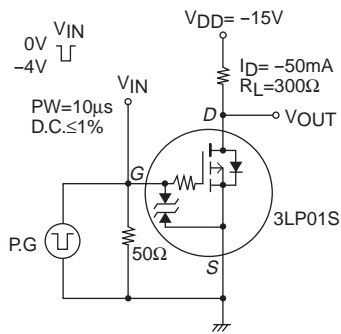
3LP01S

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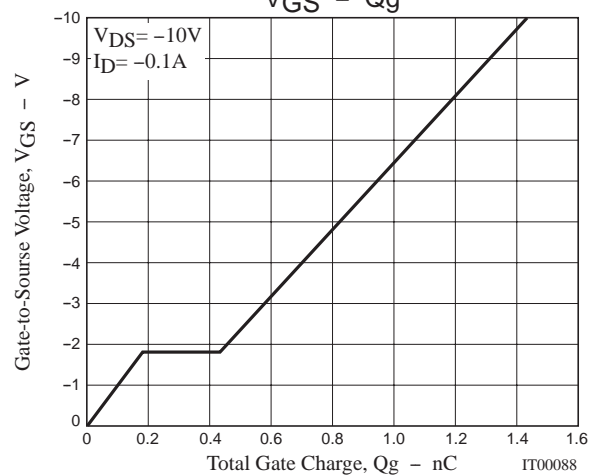
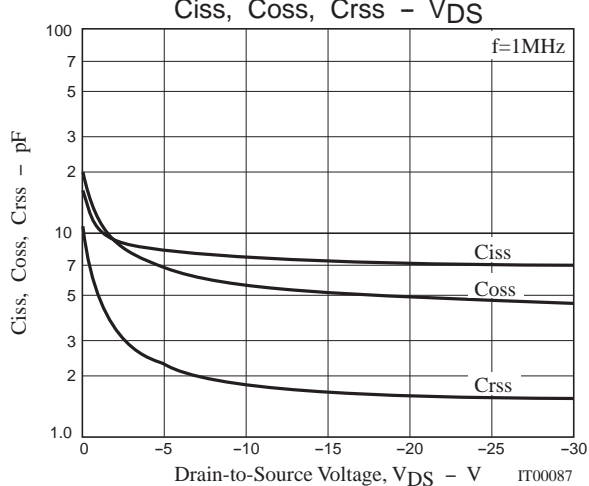
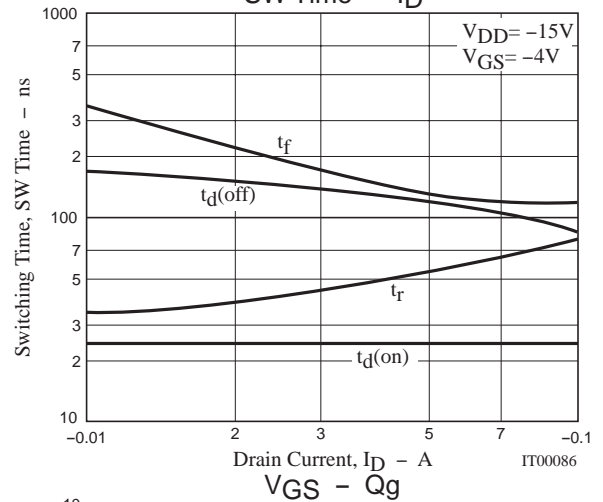
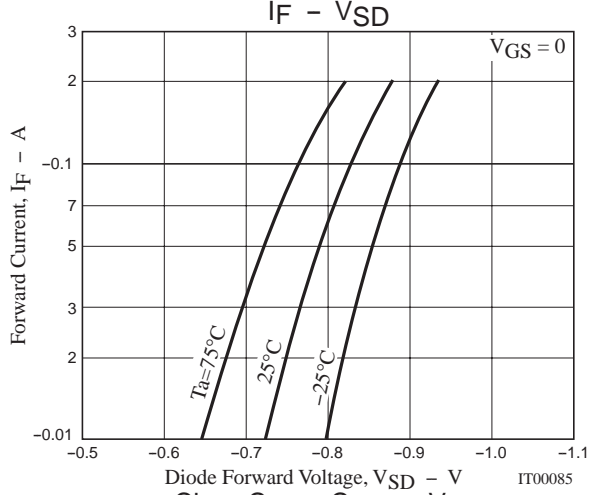
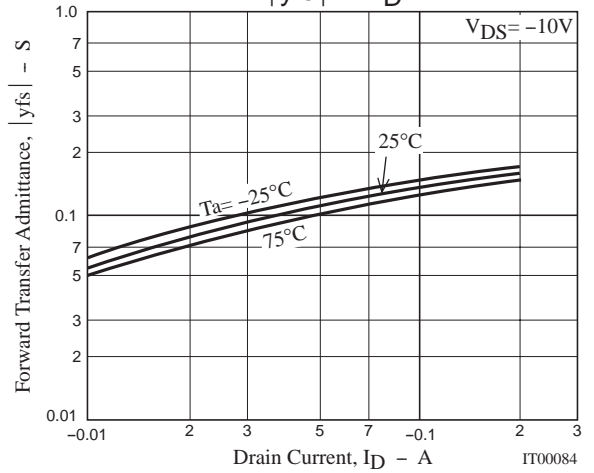
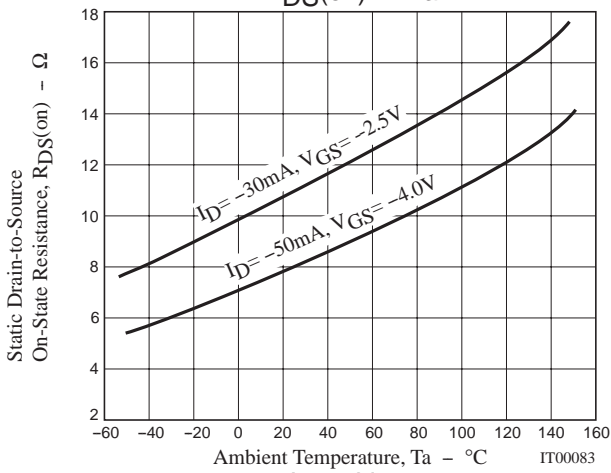
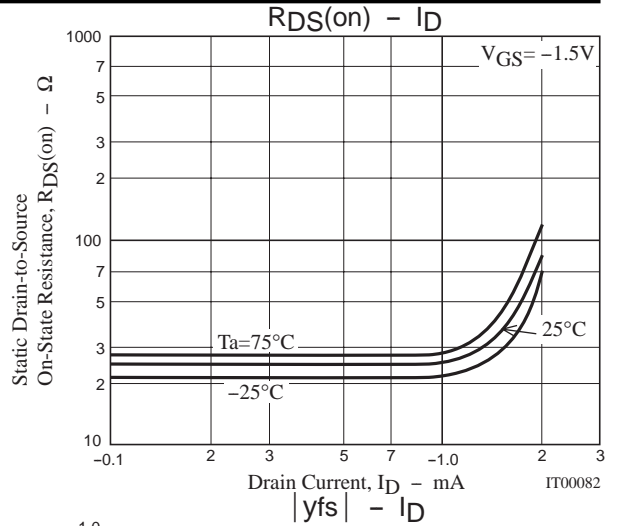
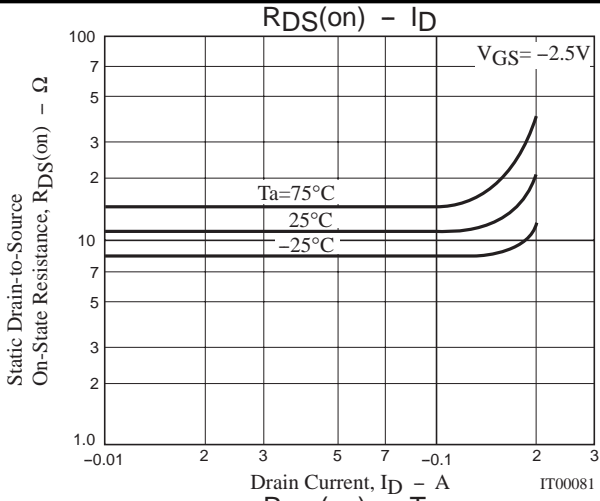
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =-10V, f=1MHz		7.5		pF
Output Capacitance	Coss	V _{DS} =-10V, f=1MHz		5.7		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-10V, f=1MHz		1.8		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit		24		ns
Rise 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
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-10V, I _D =-100mA		1.43		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =-10V, V _{GS} =-10V, I _D =-100mA		0.18		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =-10V, V _{GS} =-10V, I _D =-100mA		0.25		nC
Diode Forward Voltage	V _{SD}	I _S =-100mA, V _{GS} =0	-0.83		-1.2	V

Marking : XA

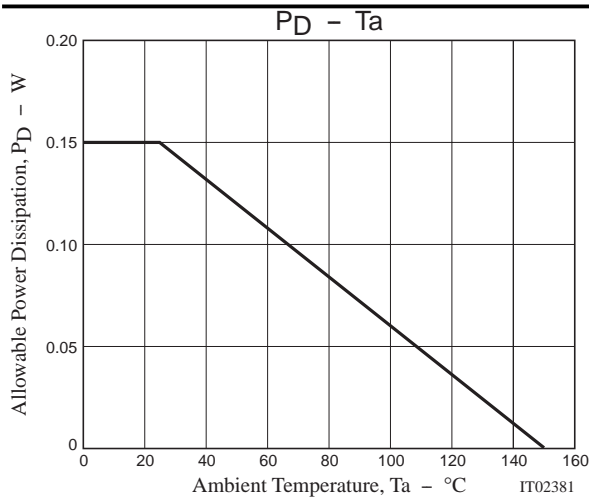
Switching Time Test Circuit



3LP01S



3LP01S



Note on usage : Since the 3LP01S is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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