



# 3LP01M — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

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

### Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-30	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		-0.1	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-0.4	A
Allowable Power Dissipation	$P_D$		0.15	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}$ , $V_{GS}=0\text{V}$	-30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30\text{V}$ , $V_{GS}=0\text{V}$			-1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8\text{V}$ , $V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}$ , $I_D=-100\mu\text{A}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}$ , $I_D=-50\text{mA}$	80	110		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-50\text{mA}$ , $V_{GS}=-4\text{V}$		8	10.4	$\Omega$
	$R_{DS(on)2}$	$I_D=-30\text{mA}$ , $V_{GS}=-2.5\text{V}$		11	15.4	$\Omega$
	$R_{DS(on)3}$	$I_D=-1\text{mA}$ , $V_{GS}=-1.5\text{V}$		27	54	$\Omega$

Marking : XA

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# 3LP01M

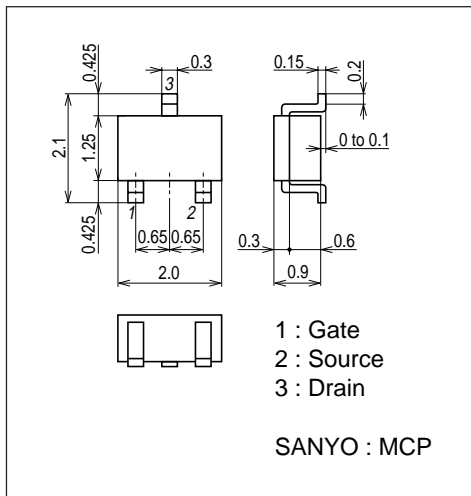
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		7.5		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		5.7		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		1.8		pF
Turn-ON Delay Time	$t_d(on)$	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	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

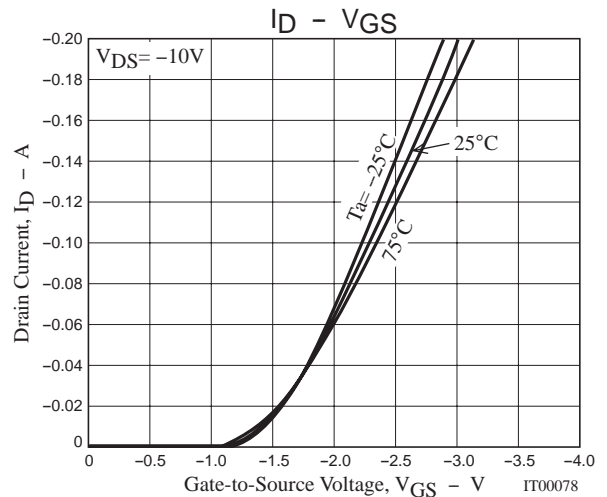
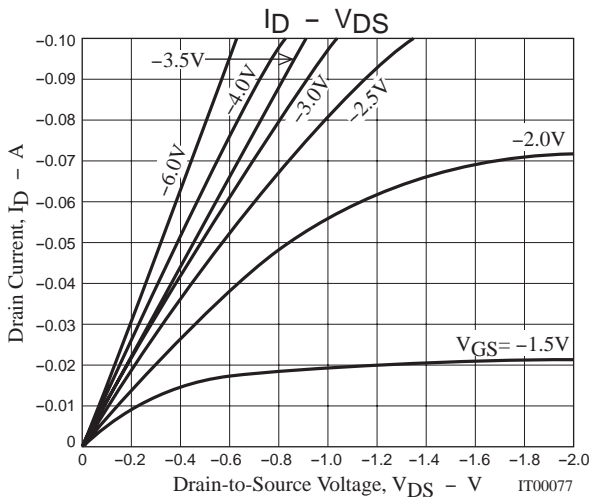
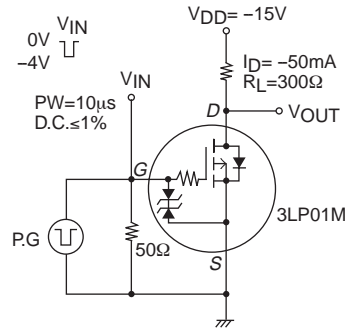
## Package Dimensions

unit : mm (typ)

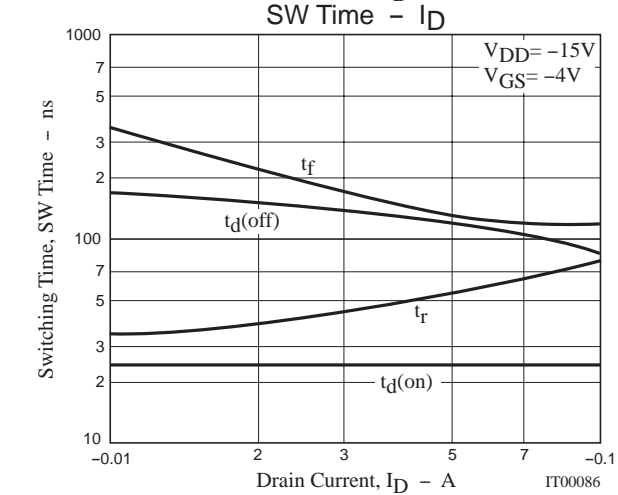
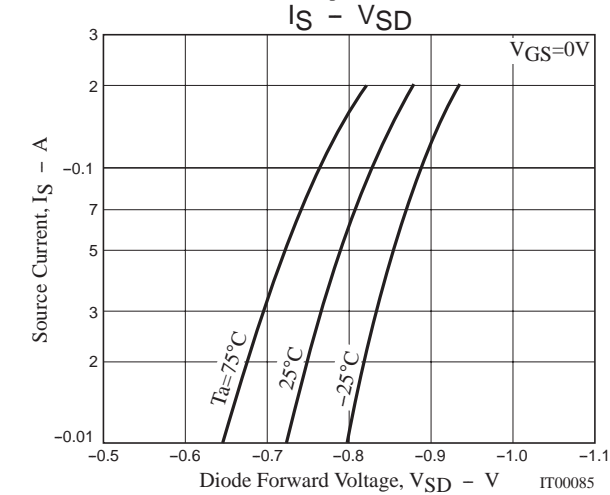
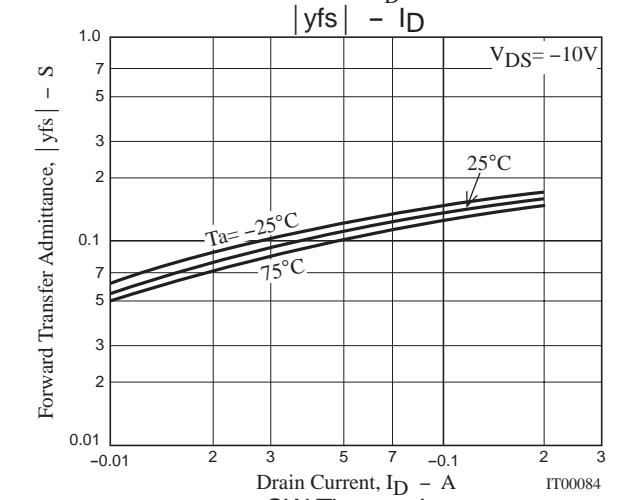
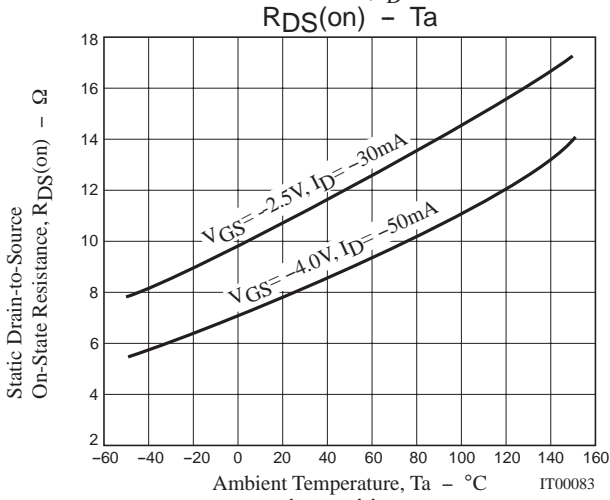
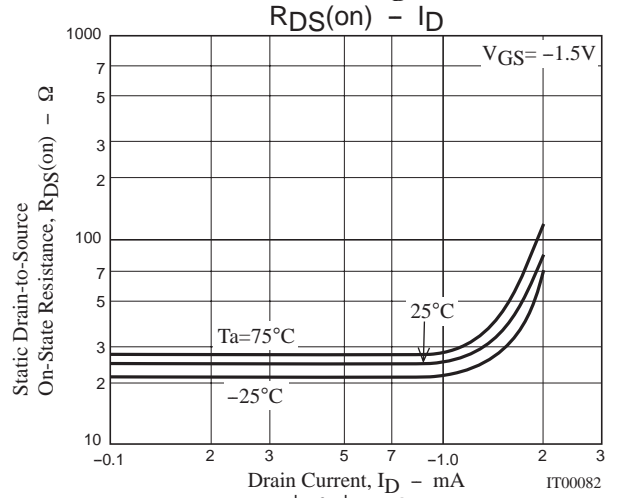
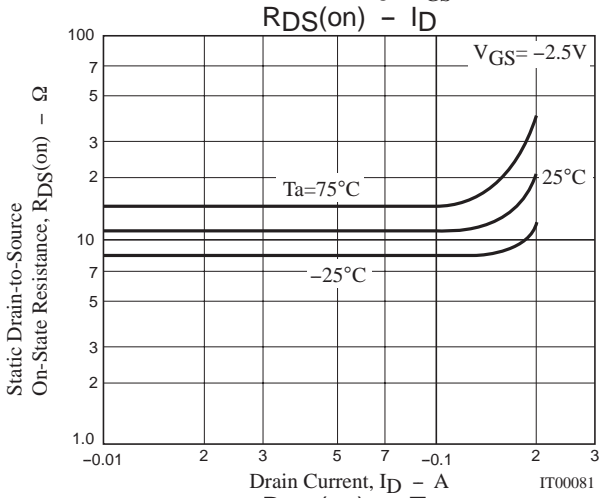
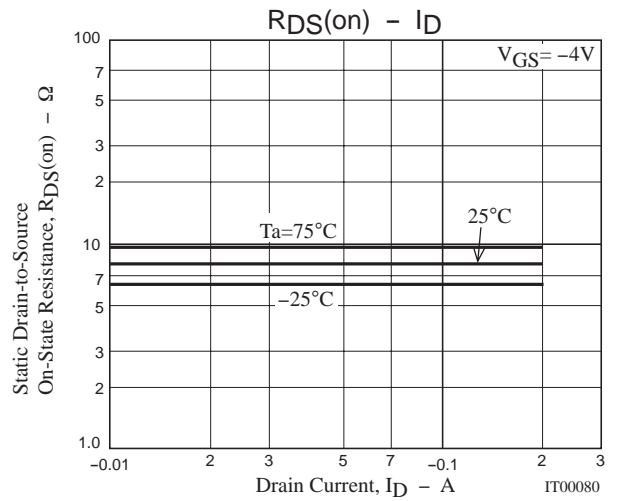
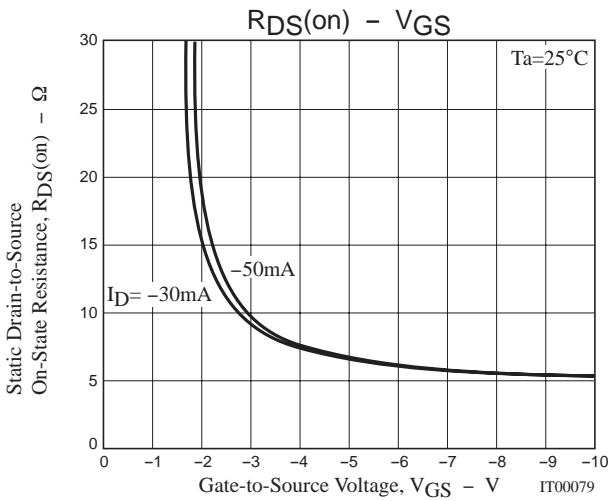
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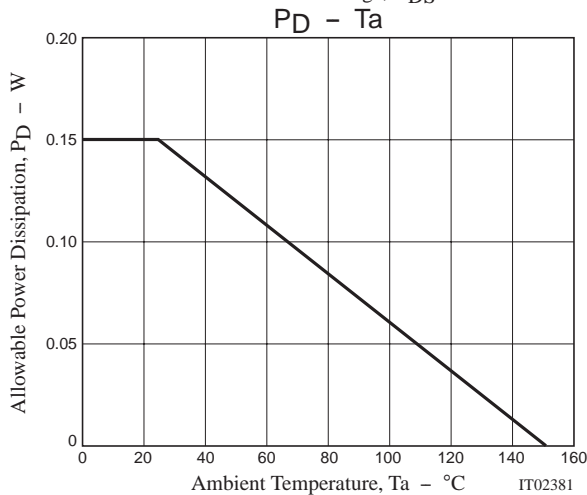
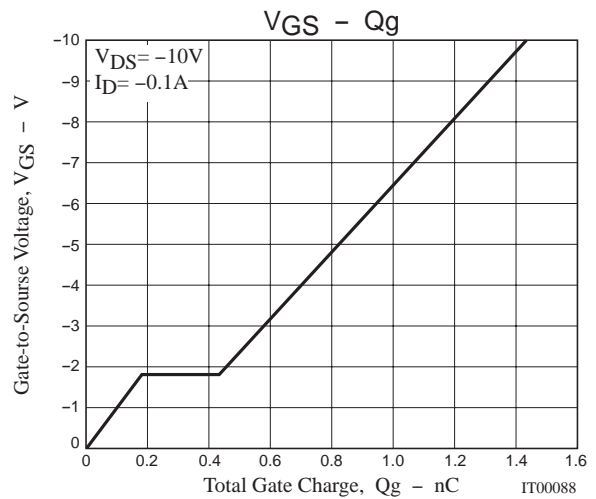
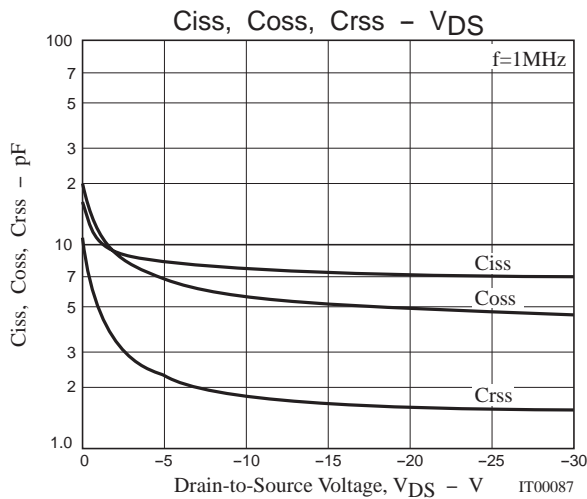
## Switching Time Test Circuit



# 3LP01M



## 3LP01M



Note on usage : Since the 3LP01M is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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