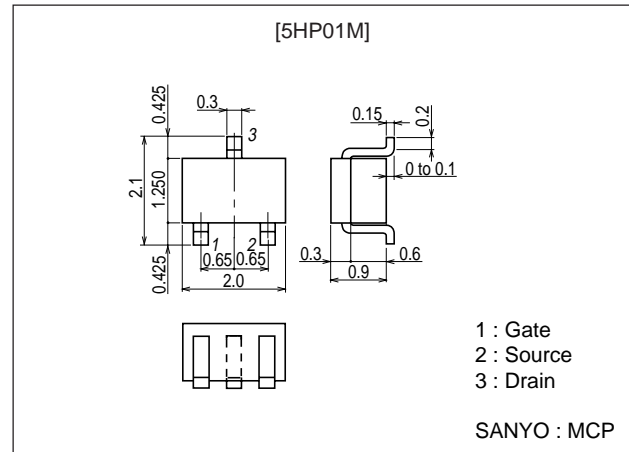


**SANYO****Ultrahigh-Speed Switching Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

**Package Dimensions**unit : mm  
2158**Specifications****Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		-50	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-0.07	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-0.28	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	$V_{(BR)DSS}$	$I_D = -1\text{mA}$ , $V_{GS} = 0$	-50			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -50\text{V}$ , $V_{GS} = 0$			-10	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16\text{V}$ , $V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$ , $I_D = -100\mu\text{A}$	-1		-2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$ , $I_D = -40\text{mA}$	50	70		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -40\text{mA}$ , $V_{GS} = -10\text{V}$		17	22	$\Omega$
	$R_{DS(on)2}$	$I_D = -20\text{mA}$ , $V_{GS} = -4\text{V}$		23	32	$\Omega$

Continued on next page.

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

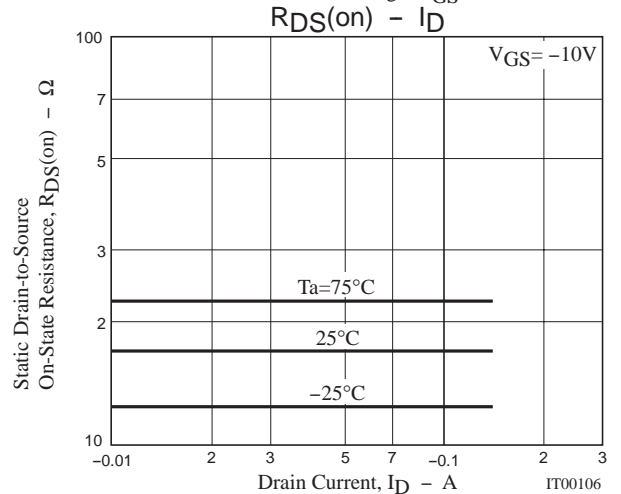
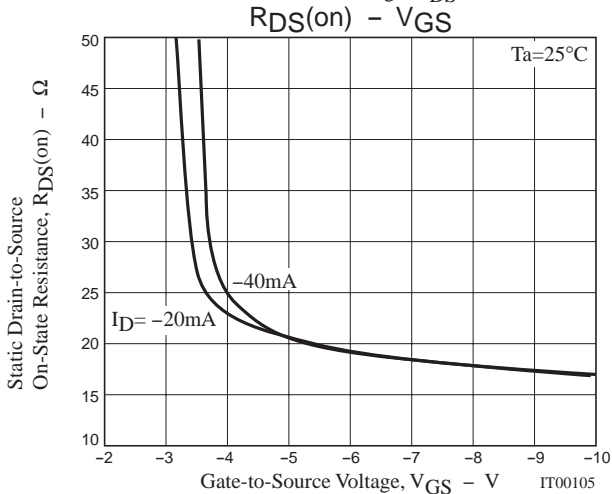
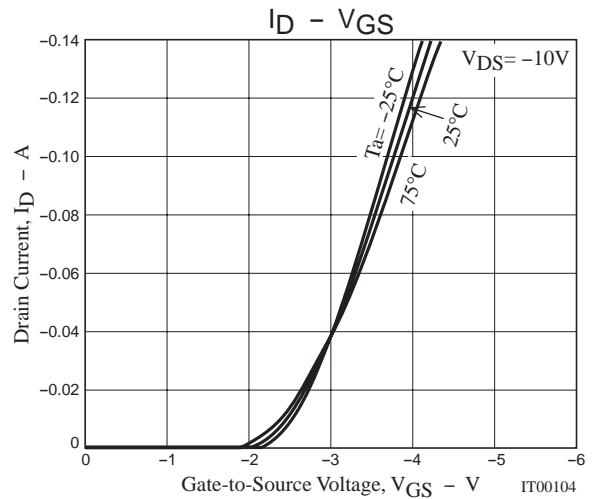
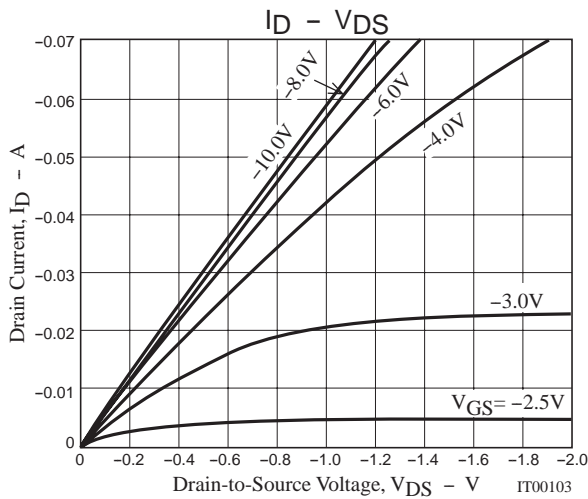
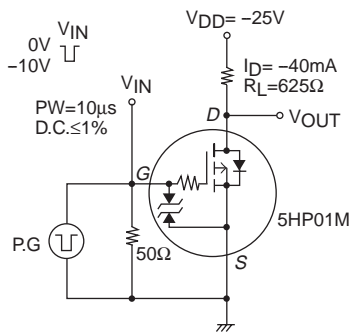
# 5HP01M

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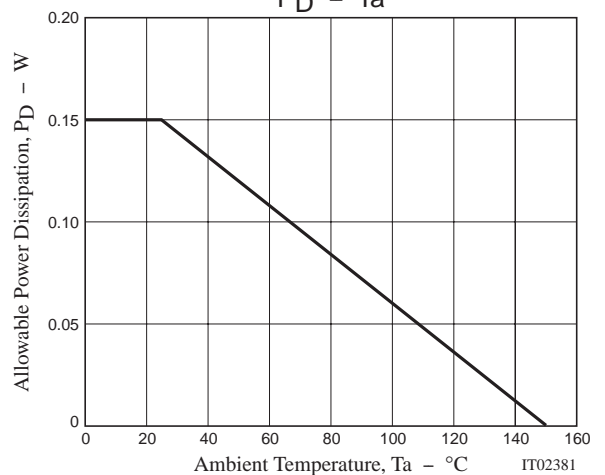
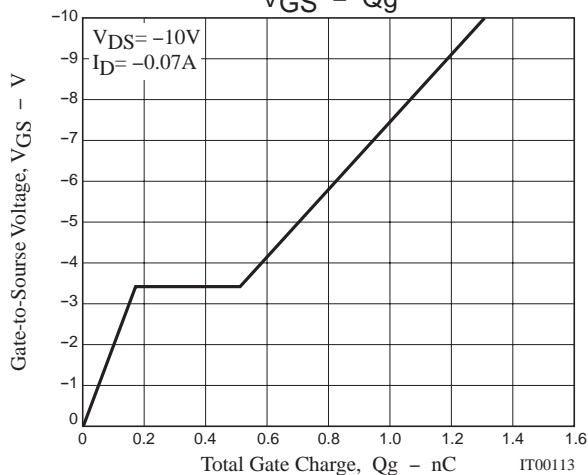
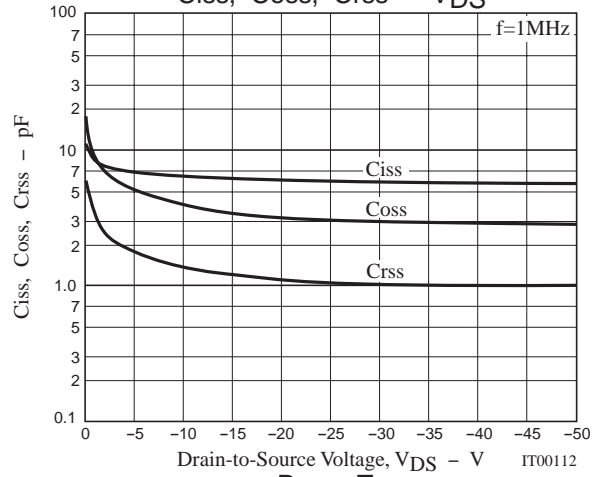
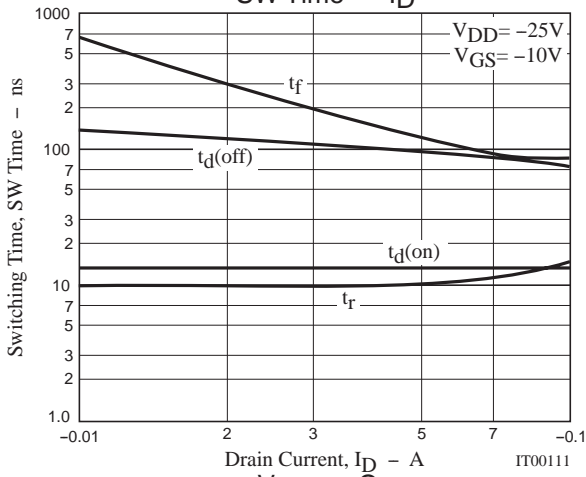
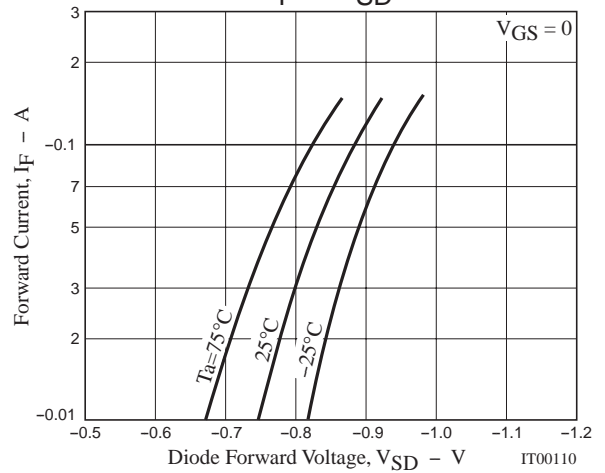
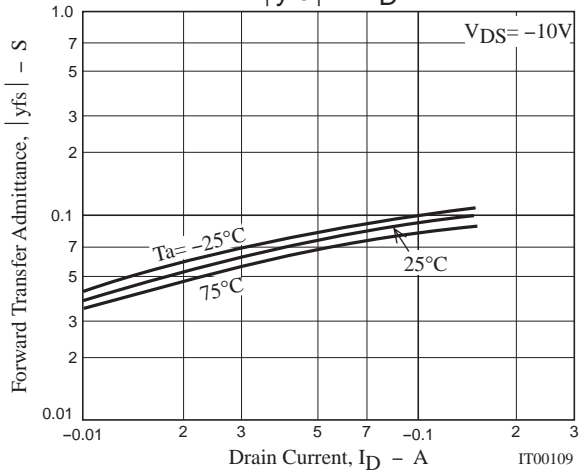
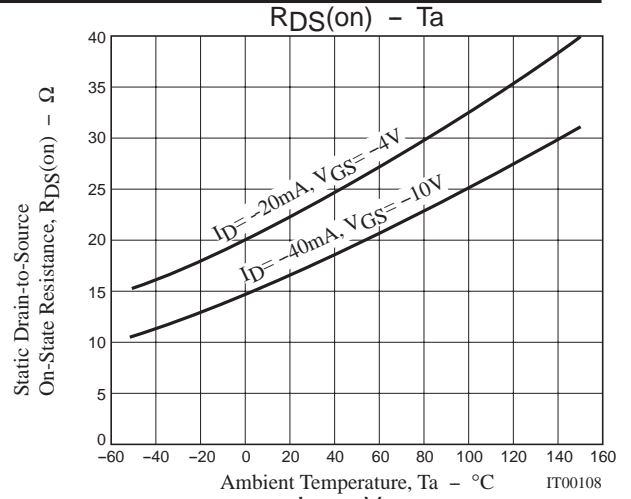
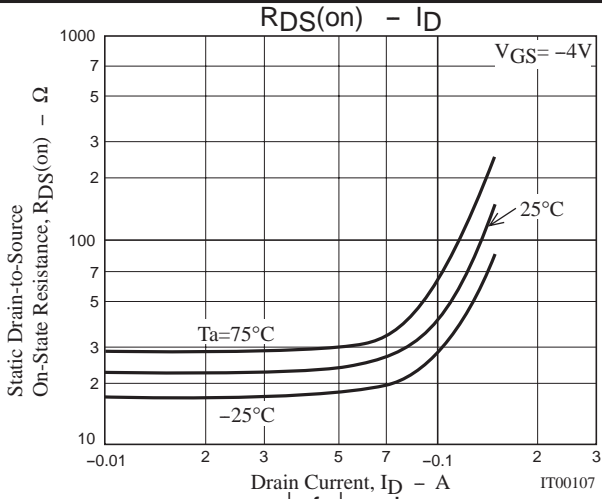
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =-10V, f=1MHz		6.2		pF
Output Capacitance	Coss	V <sub>DS</sub> =-10V, f=1MHz		4.0		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-10V, f=1MHz		1.3		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		13		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		10		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		100		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		150		ns
Total Gate Charge	Qg	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-70mA		1.32		nC
Gate Source Charge	Qgs	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-70mA		0.17		nC
Gate Drain Charge	Qgd	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-70mA		0.34		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-70mA, V <sub>GS</sub> =0		0.85	1.2	V

Marking : XC

## Switching Time Test Circuit



# 5HP01M



Note on usage : Since the 5HP01M is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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