

P-Channel Silicon MOSFET

5HP01M



Ultrahigh-Speed Switching Applications

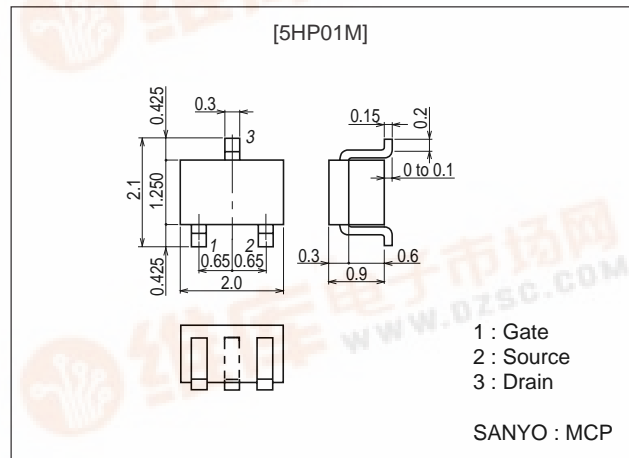
Features

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

Package Dimensions

unit : mm

2158



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-50	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-0.07	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-0.28	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	-50			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-50V, V _{GS} =0			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-100μA	-1		-2.5	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-40mA	50	70		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-40mA, V _{GS} =-10V		17	22	Ω
	R _{DS(on)2}	I _D =-20mA, V _{GS} =-4V		23	32	Ω

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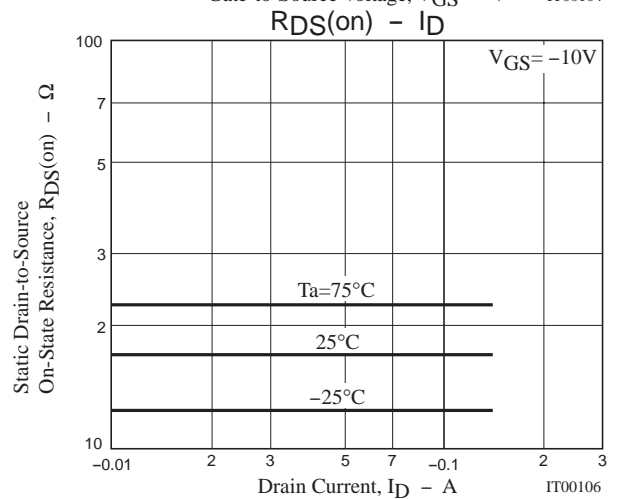
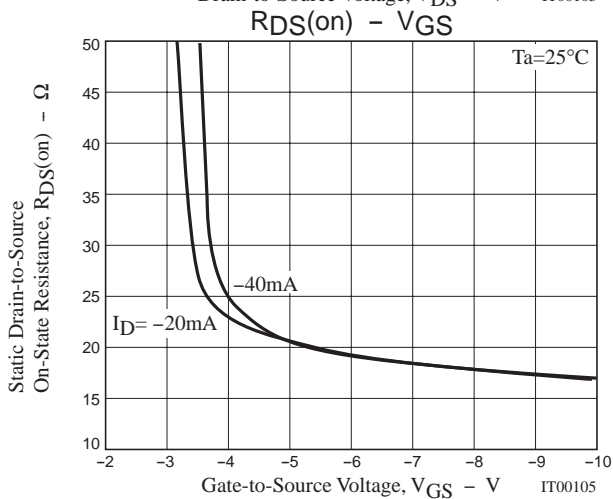
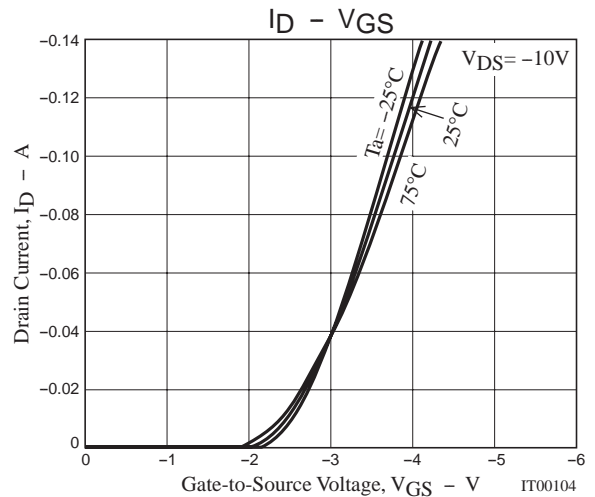
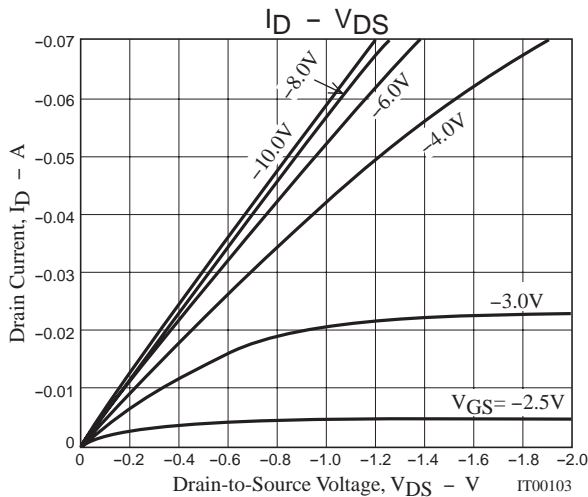
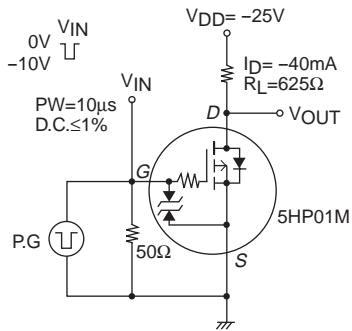
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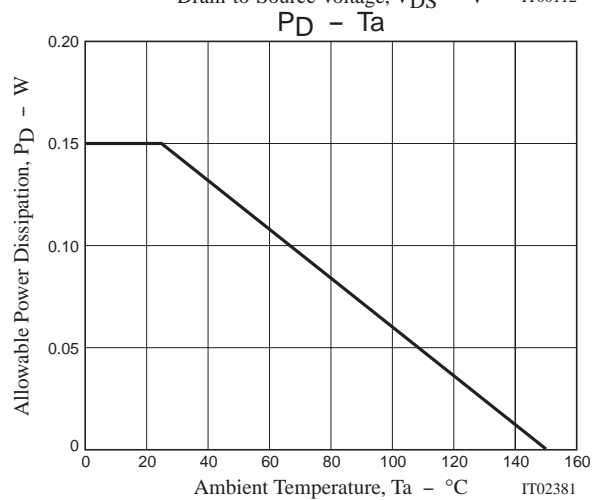
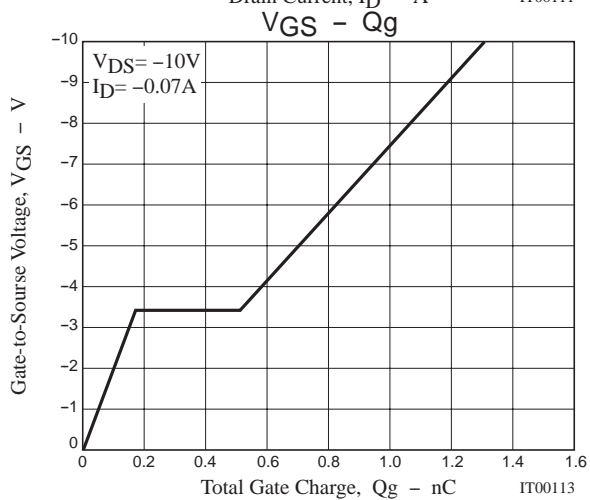
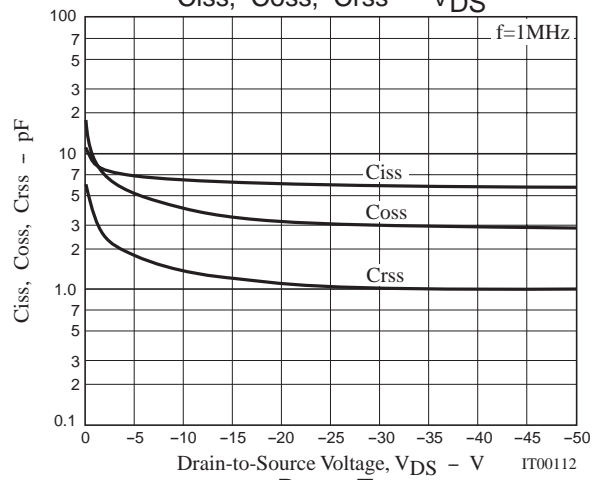
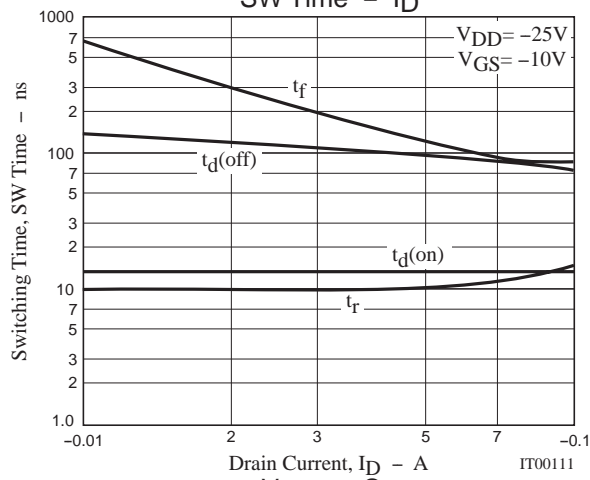
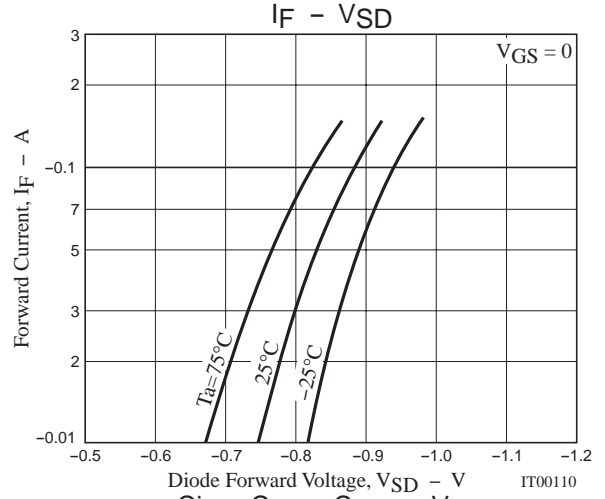
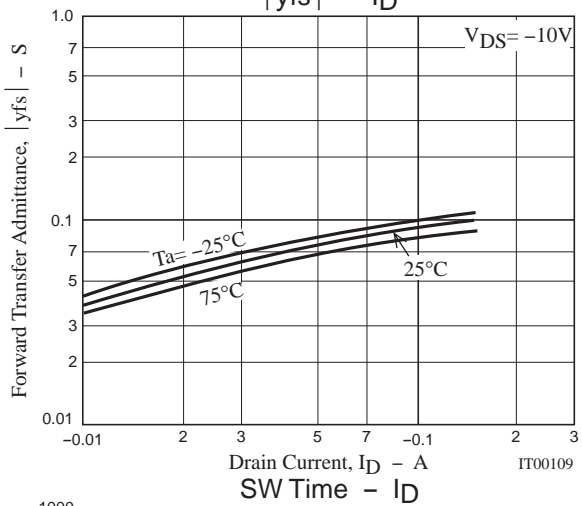
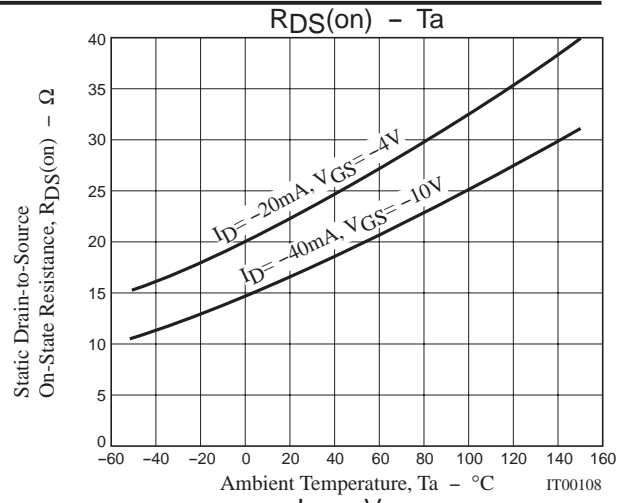
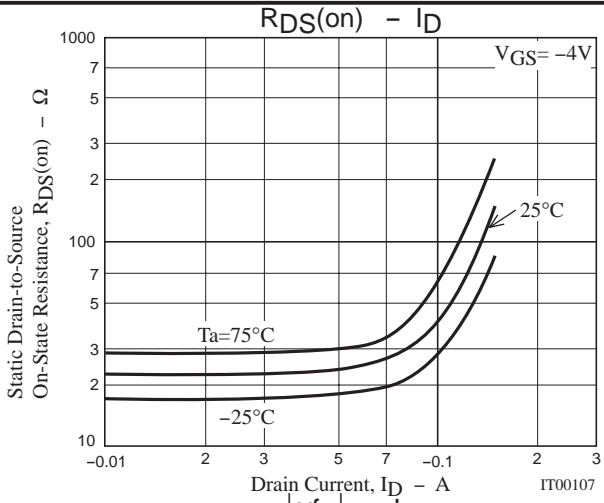
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		6.2		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		4.0		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		1.3		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		13		ns
Rise Time	t_r	See specified Test Circuit		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		100		ns
Fall Time	t_f	See specified Test Circuit		150		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		1.32		nC
Gate Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		0.17		nC
Gate Drain Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		0.34		nC
Diode Forward Voltage	VSD	$I_S=-70mA, V_{GS}=0$		0.85	1.2	V

Marking : XC

Switching Time Test Circuit



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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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