



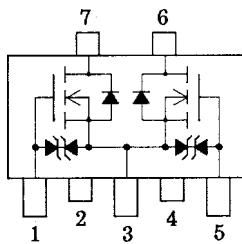
# FP401

## N-Channel MOS Silicon FET Very High-Speed Switching Applications

### Features

- Low ON resistance.
- Very high-speed switching.
- Composite type with 2 low-voltage-drive N-channel MOSFETs facilitating high-density mounting.

### Electrical Connection



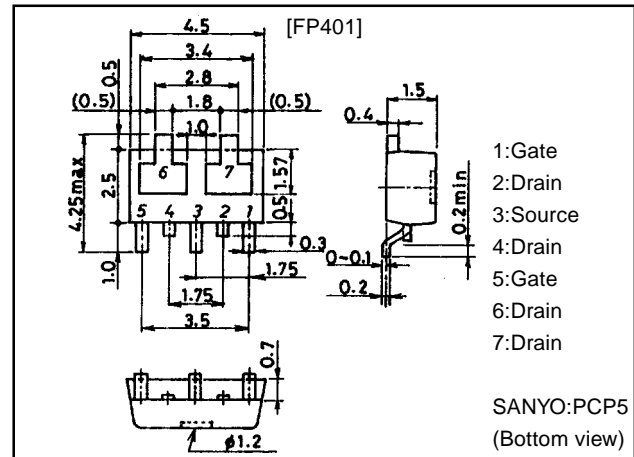
- 1: Gate  
2: Drain  
3: Source  
4: Drain  
5: Gate  
6: Drain  
7: Drain

(Top view)

### Package Dimensions

unit:mm

2102A



### Specifications

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		250	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		400	mA
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	1.6	A
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ C$ , 1 unit	2.0	W
	$P_D$	Mounted on ceramic board (250mm $\times$ 0.8mm) 1 unit	0.8	W
Total Power Dissipation	$P_T$	Mounted on ceramic board (250mm $\times$ 0.8mm)	1.1	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

#### Electrical Characteristics at Ta=25°C

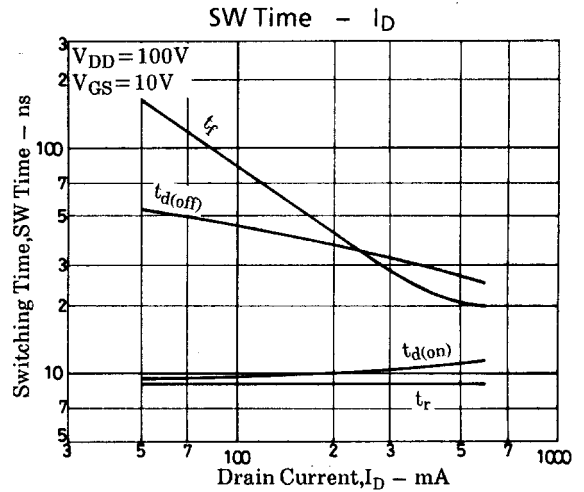
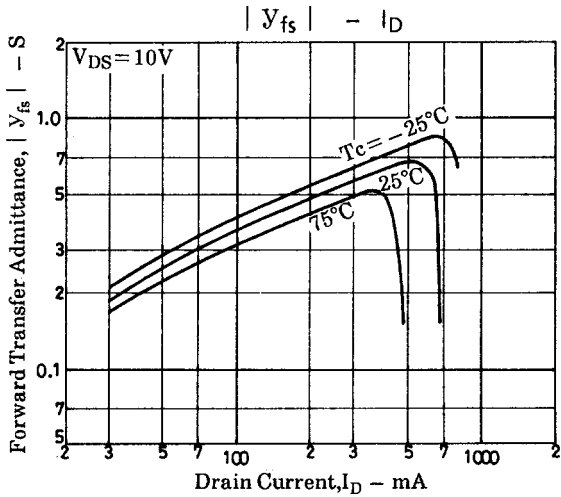
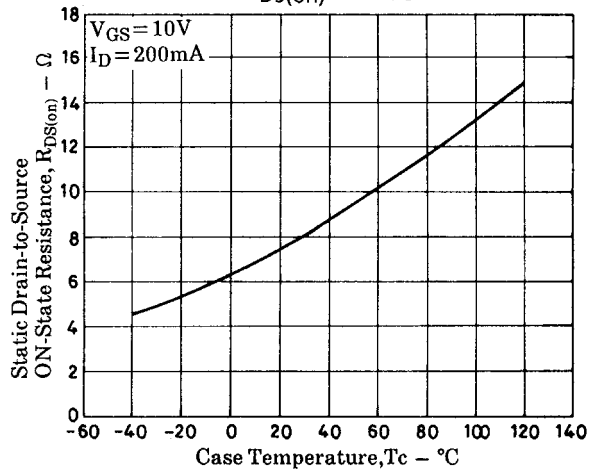
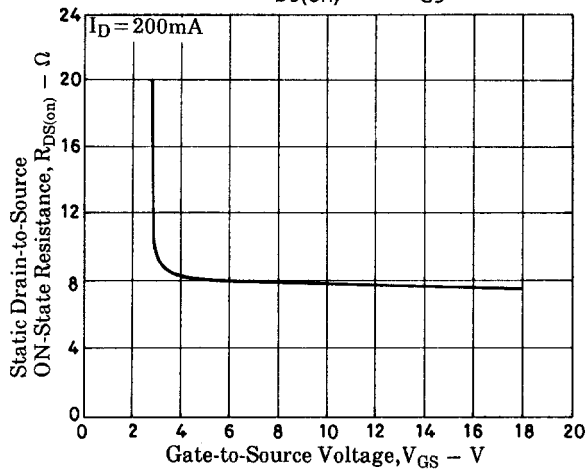
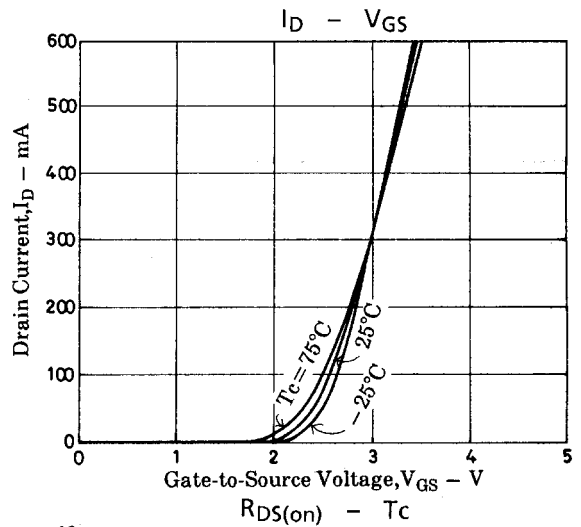
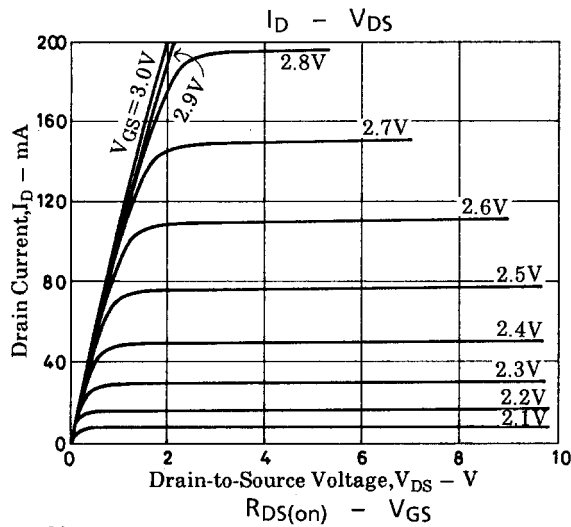
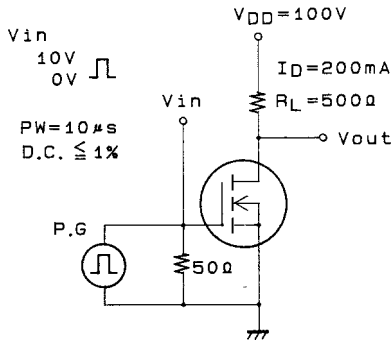
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA$ , $V_{GS} = 0$	250			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 250V$ , $V_{GS} = 0$			100	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 18V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	1.5		2.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10V$ , $I_D = 200mA$	270	400		mS
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = 200mA$ , $V_{GS} = 10V$		8	12	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 20V$ , $f = 1MHz$		37		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 20V$ , $f = 1MHz$		10		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 20V$ , $f = 1MHz$		4		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	$t_r$	See specified Test Circuit		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		35		ns
Fall Time	$t_f$	See specified Test Circuit		45		ns
Diode Forward Voltage	$V_{SD}$	$I_S = 400mA$ , $V_{GS} = 0$		1.0		V

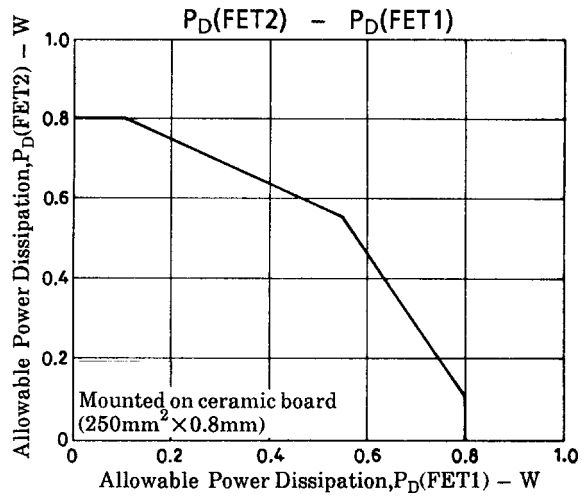
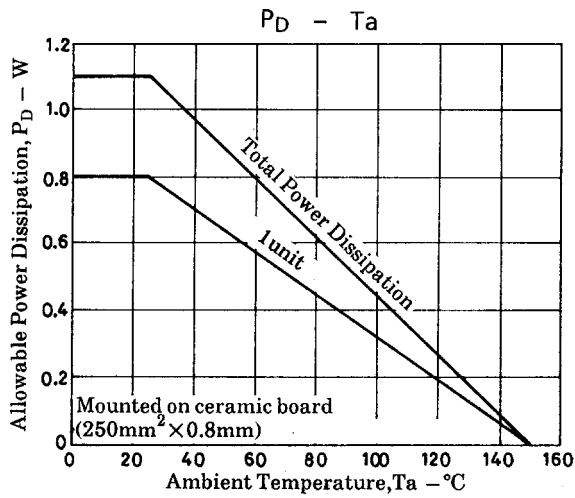
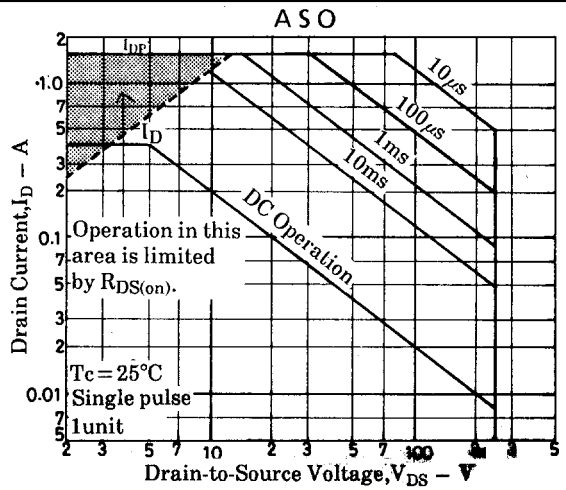
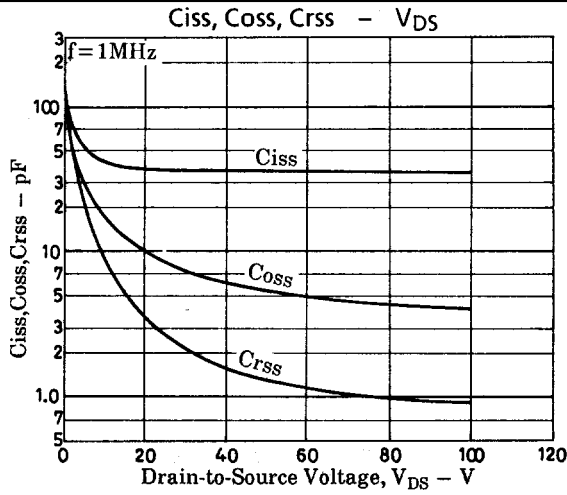
Marking:401

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Switching Time Test Circuit





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