



# FP402

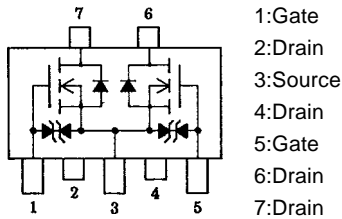
## N-Channel MOS Silicon FET

### Very High-Speed Switching Applications

## Features

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

## Electrical Connection



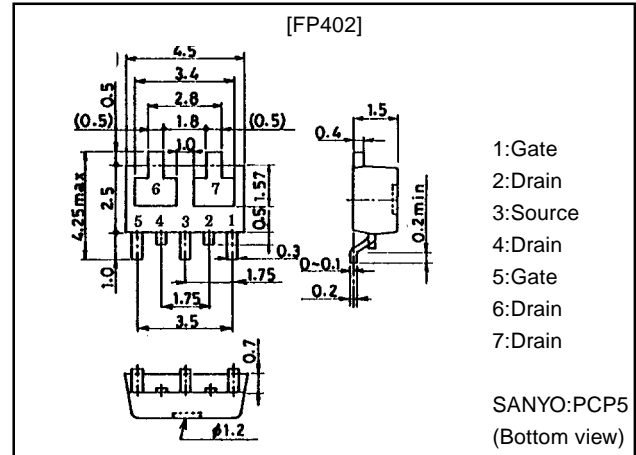
- 1: Gate
- 2: Drain
- 3: Source
- 4: Drain
- 5: Gate
- 6: Drain
- 7: Drain

(Top view)

## Package Dimensions

unit:mm

2102A



## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		20	V
Gate-to-Source Voltage	$V_{GSS}$		±15	V
Drain Current (DC)	$I_D$		1	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	4	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	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

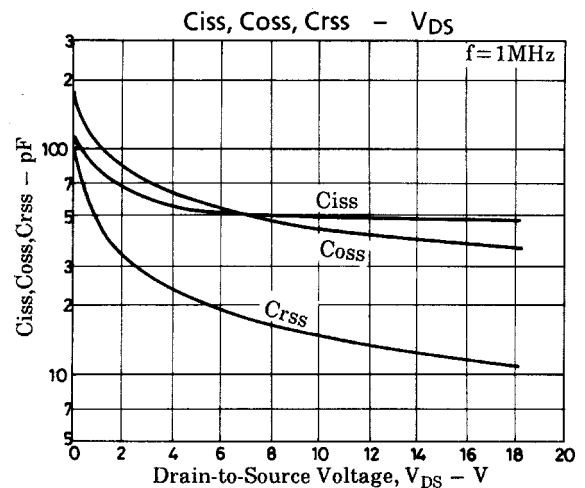
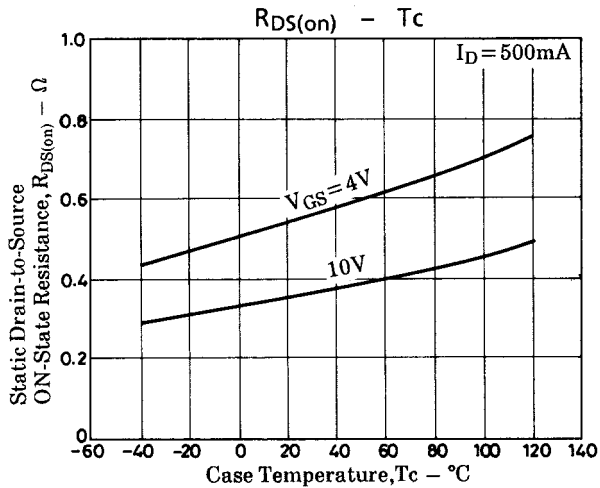
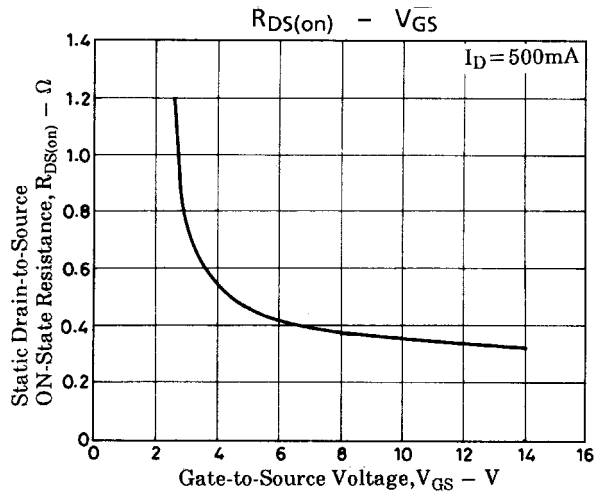
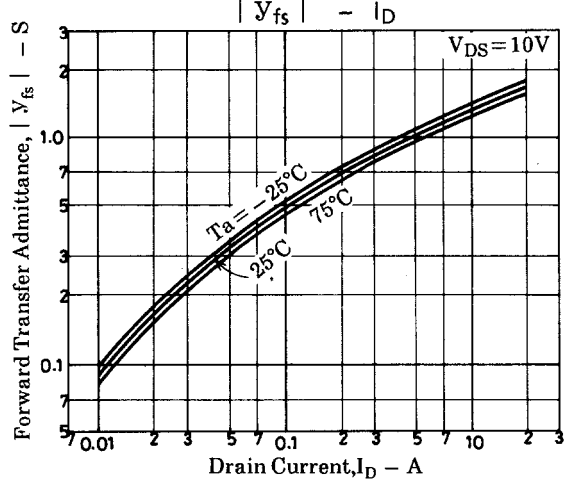
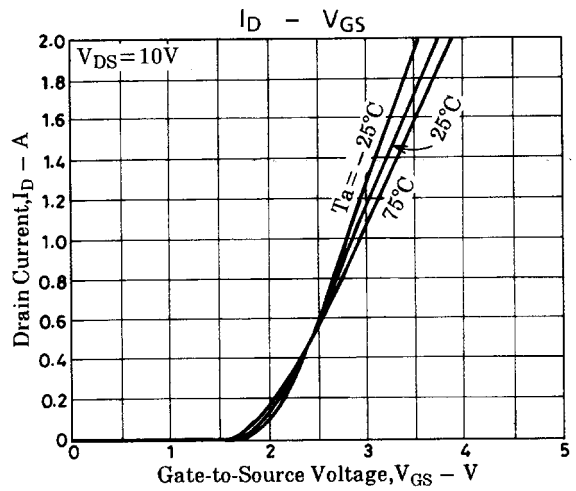
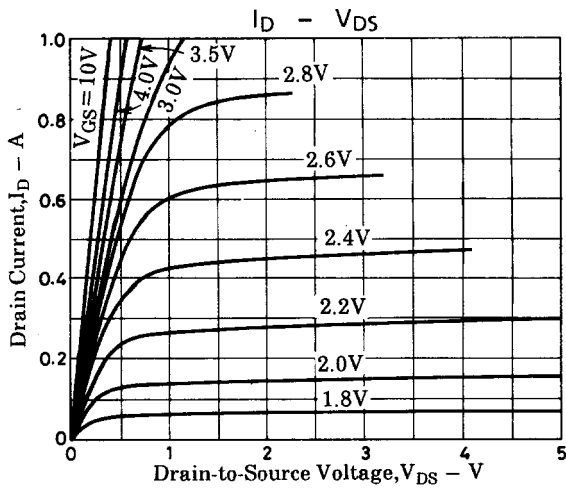
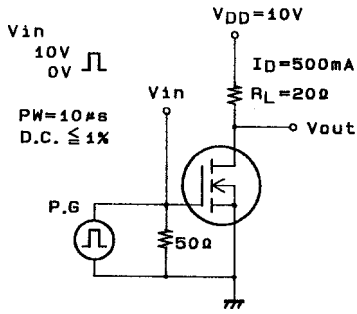
### Electrical Characteristics at Ta=25°C

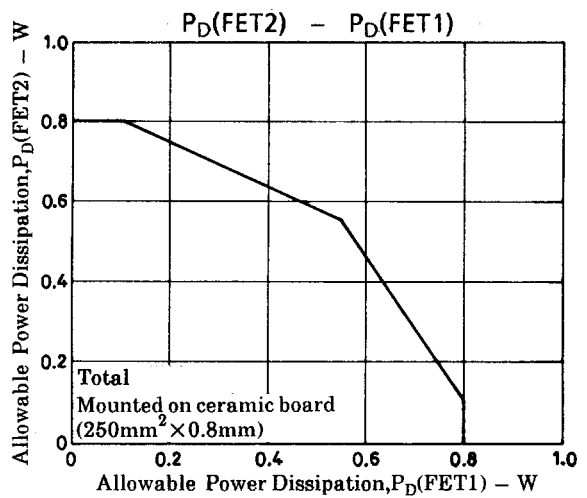
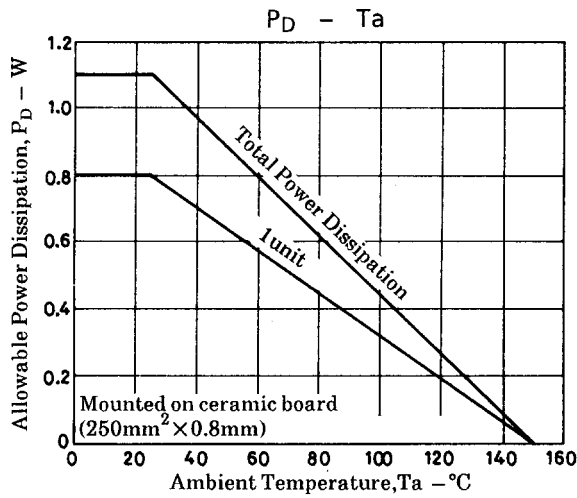
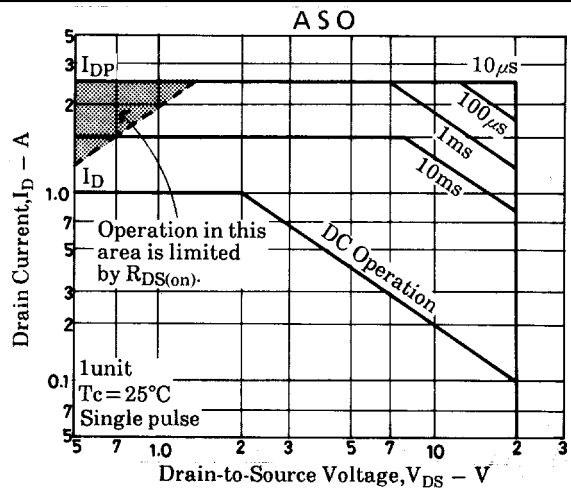
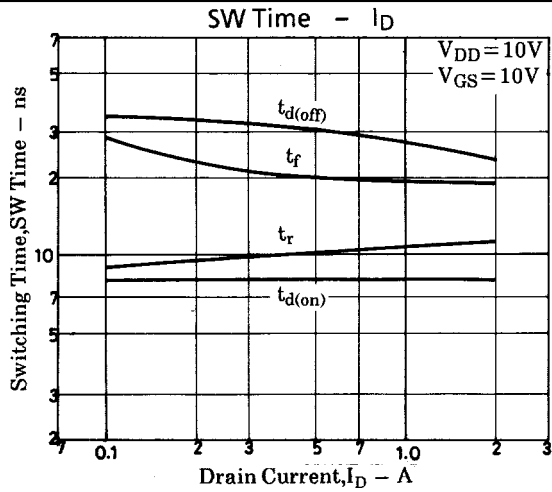
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA$ , $V_{GS} = 0$	20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 20V$ , $V_{GS} = 0$			100	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 12V$ , $V_{DS} = 0$			±10	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	0.8		2.0	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10V$ , $I_D = 500mA$	0.6	1.0		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = 500mA$ , $V_{GS} = 10V$		350	480	$m\Omega$
	$R_{DS(on)}$	$I_D = 500mA$ , $V_{GS} = 4V$		550	750	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 10V$ , $f = 1MHz$		50		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 10V$ , $f = 1MHz$		45		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 10V$ , $f = 1MHz$		15		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		8		ns
Rise Time	$t_r$	See specified Test Circuit		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		30		ns
Fall Time	$t_f$	See specified Test Circuit		20		ns
Diode Forward Voltage	$V_{SD}$	$I_S = 1A$ , $V_{GS} = 0$		1.0		V

Marking:402

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Switching Time Test Circuit





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