



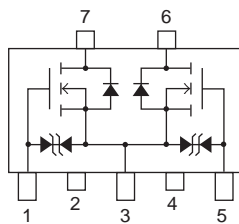
# FP402

## Ultrahigh-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



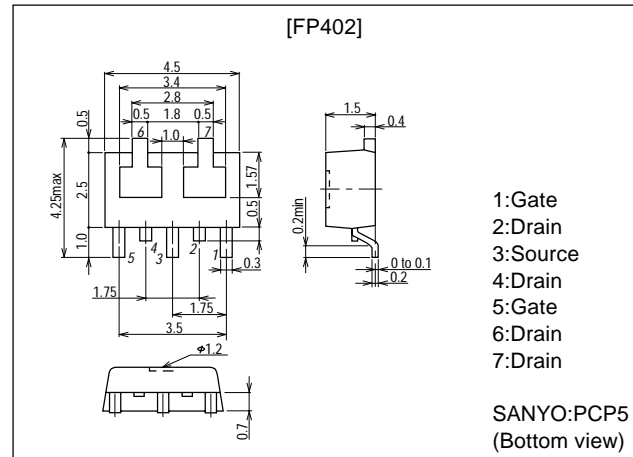
- 1:Gate
- 2:Drain
- 3:Source
- 4:Drain
- 5:Gate
- 6:Drain
- 7:Drain

(Top view)

### Package Dimensions

unit:mm

2102A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		20	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 15$	V
Drain Current (DC)	$I_D$		1	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	4	A
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ\text{C}$ , 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	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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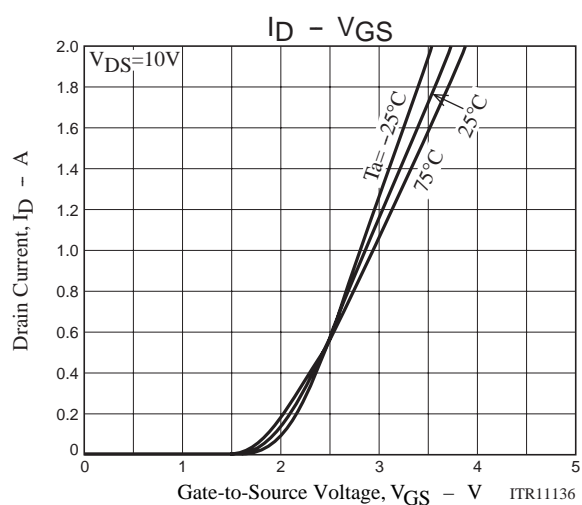
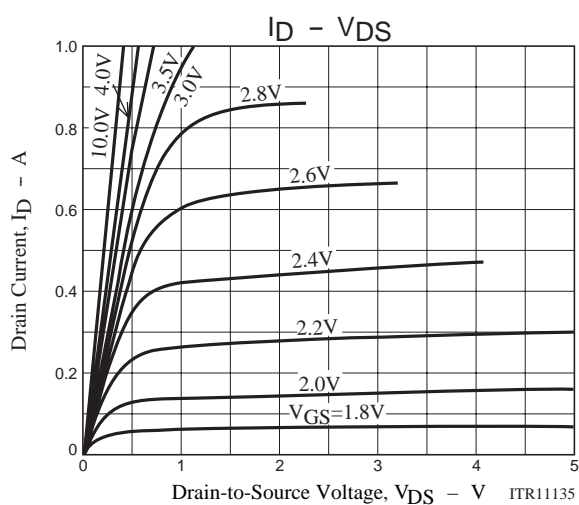
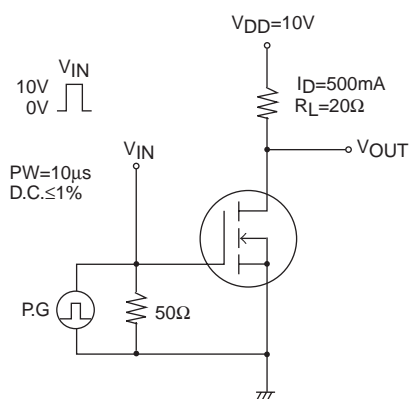
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## Electrical Characteristics at Ta=25°C

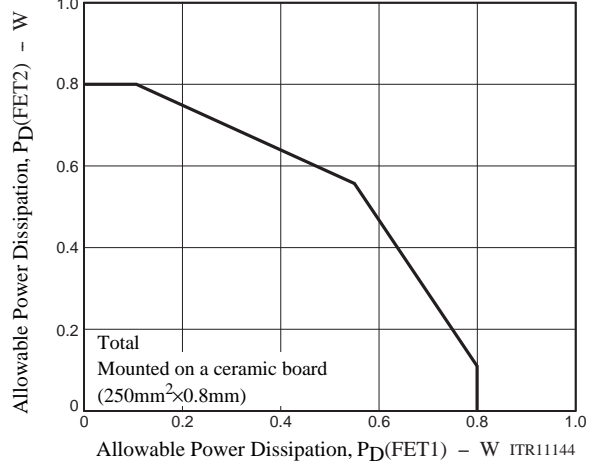
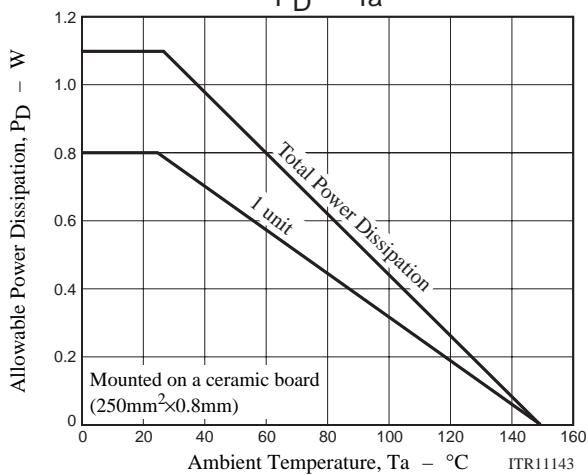
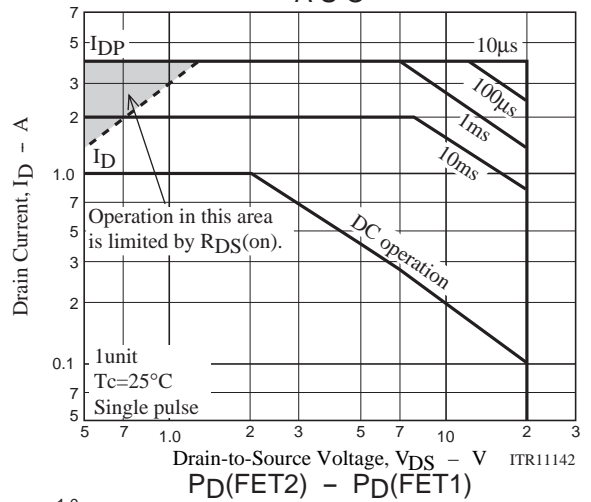
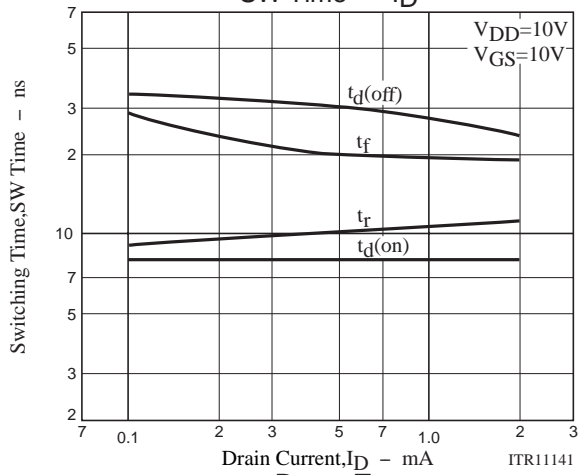
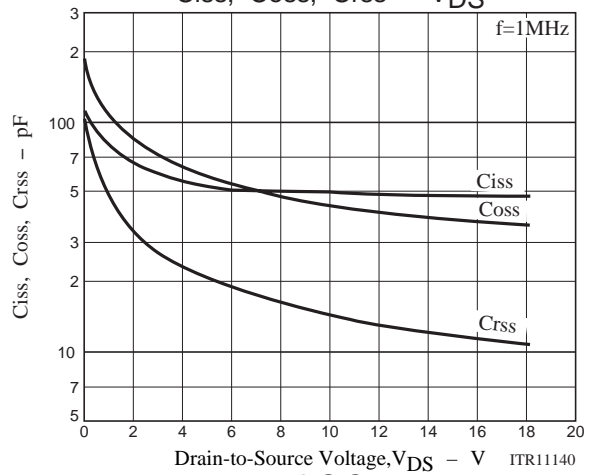
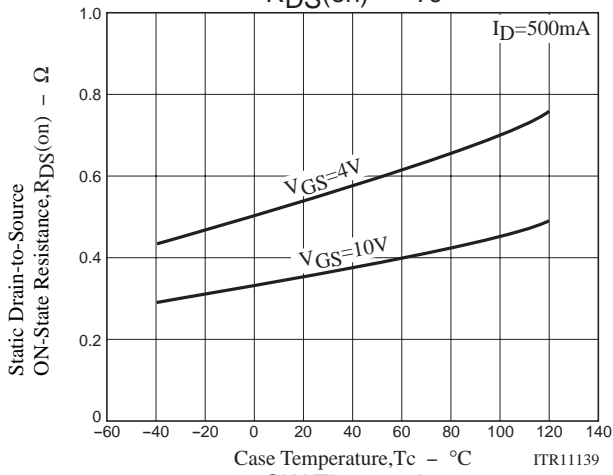
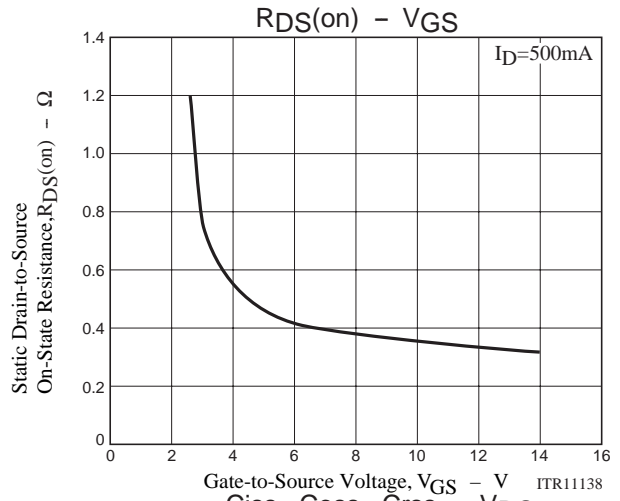
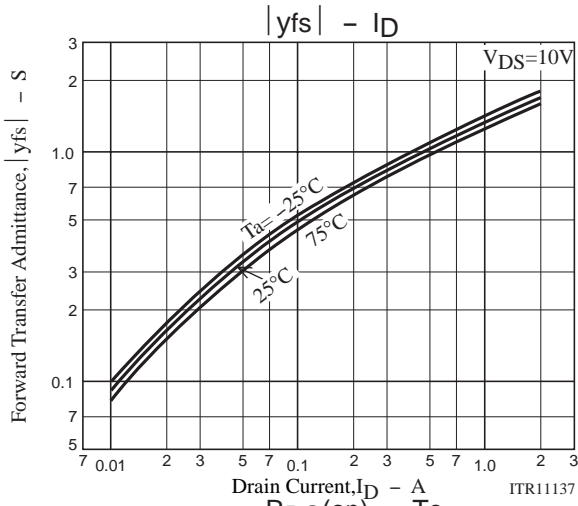
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V, V_{GS}=0$			100	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 12V, V_{DS}=0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	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

## Switching Time Test Circuit



# FP402



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