



## S/W Load Applications

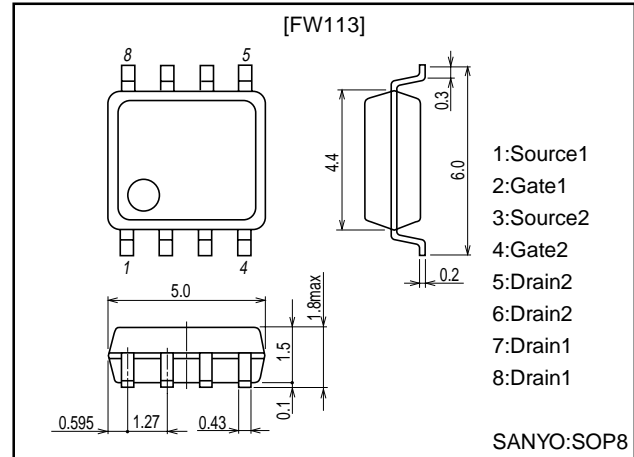
### Features

- 4V drive.
- Low ON resistance.

### Package Dimensions

unit:mm

2129



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-30	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-5	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-32	A
Allowable Power Dissipation	$P_D$	Mounted on ceramic board (1000mm <sup>2</sup> $\times$ 0.8mm) 1unit	1.7	W
Total Dissipation	$P_T$	Mounted on ceramic board (1000mm <sup>2</sup> $\times$ 0.8mm)	2.0	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

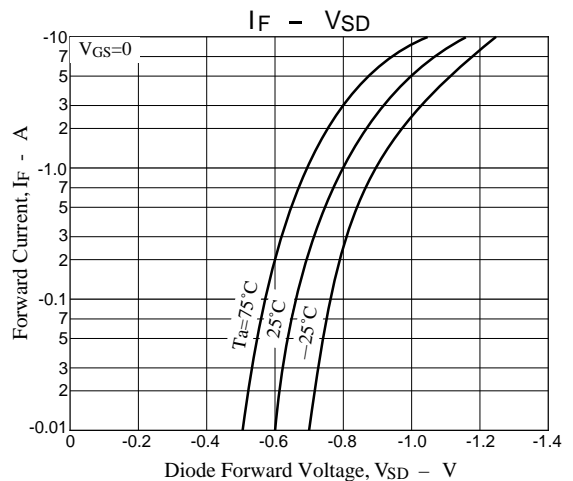
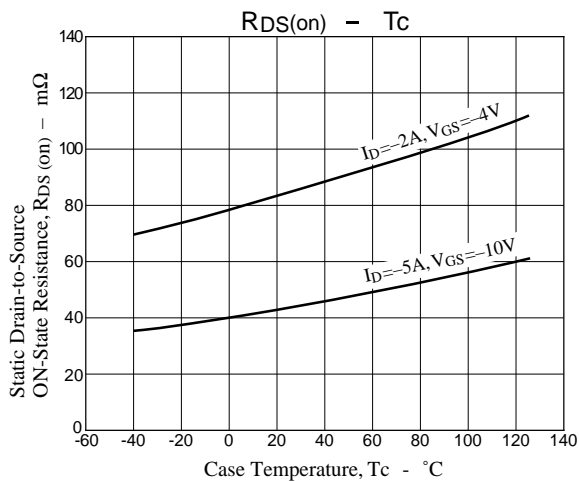
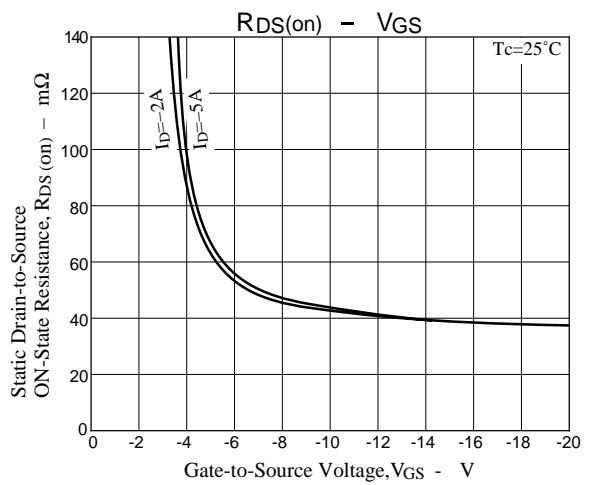
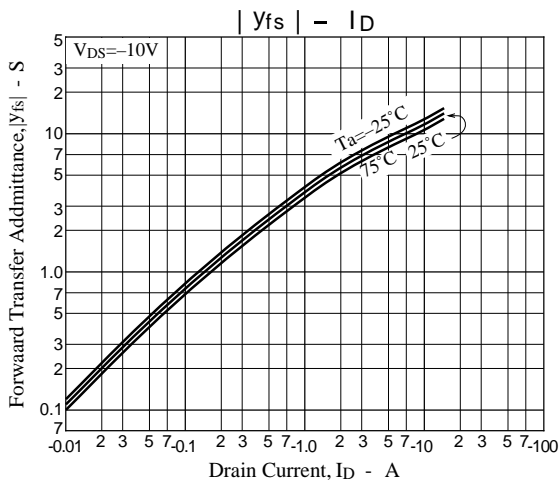
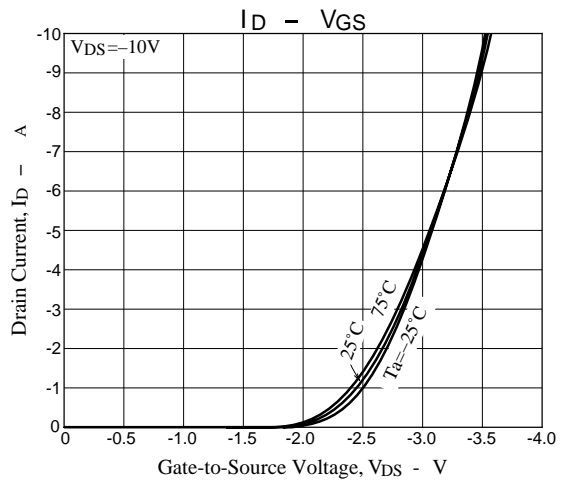
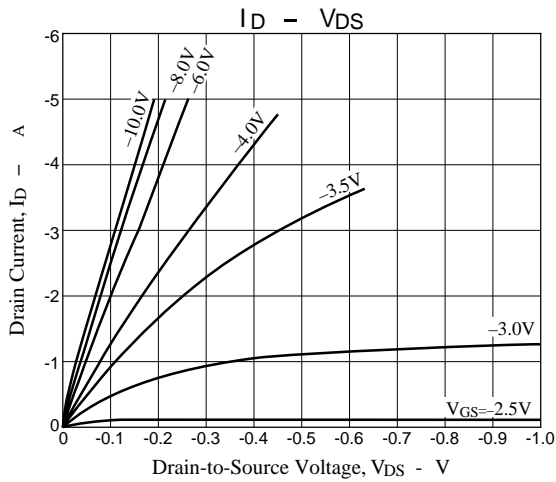
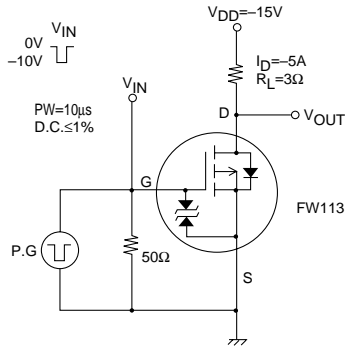
Electrical Characteristics at  $T_a = 25^\circ\text{C}$ 

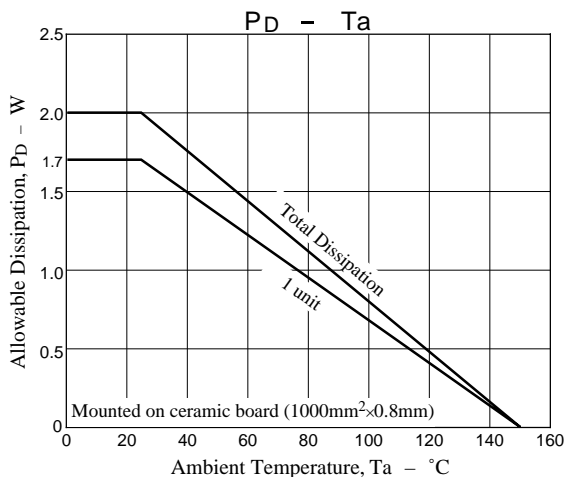
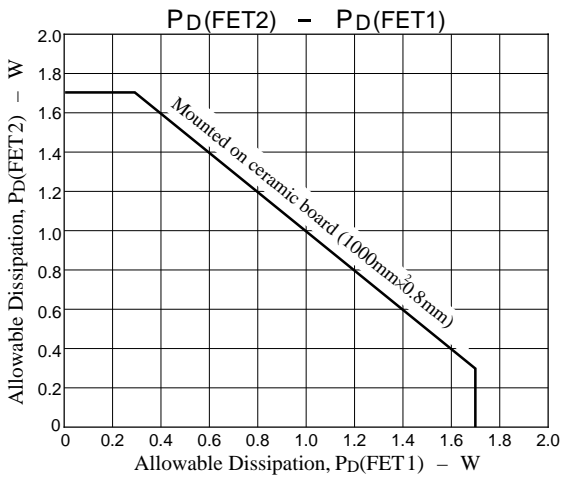
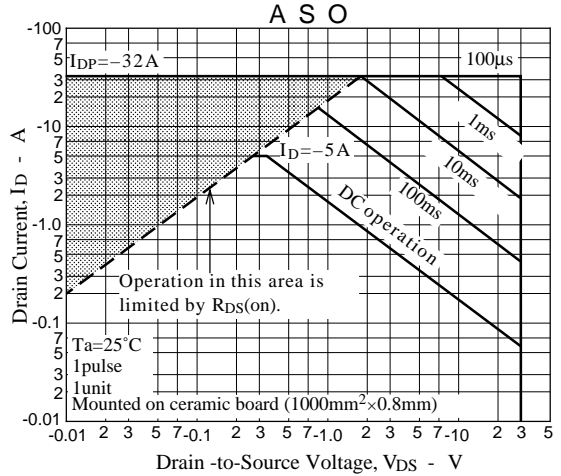
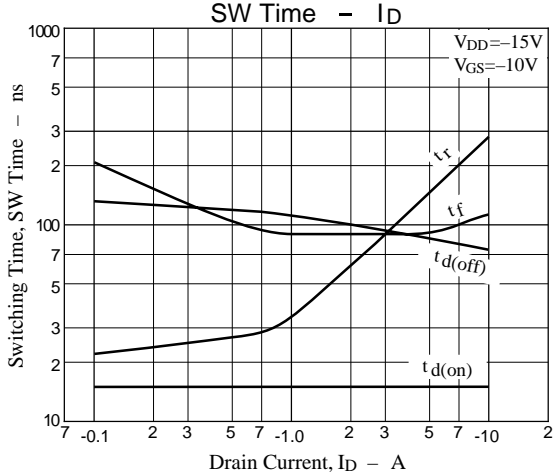
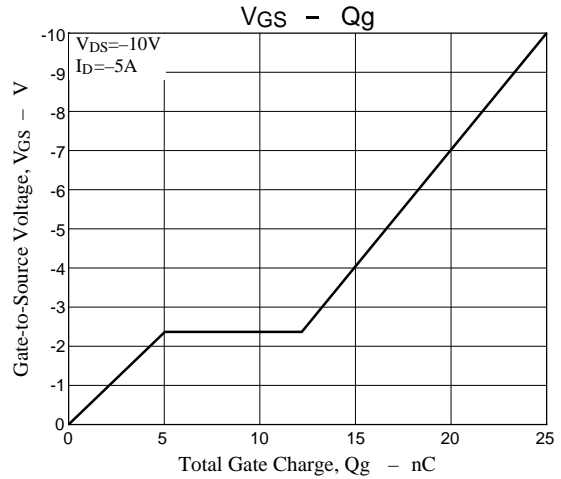
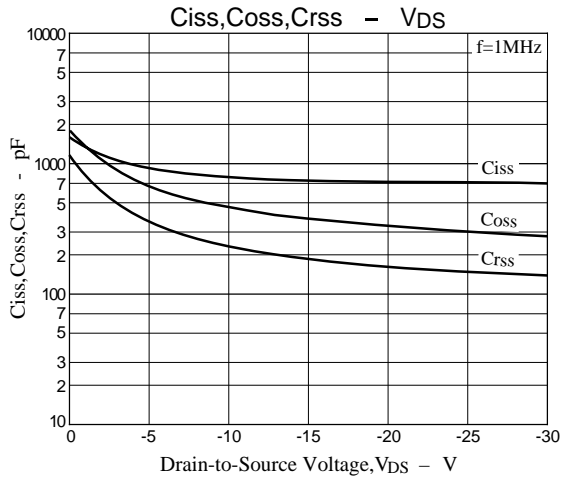
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$ , $V_{GS} = 0$	-30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30\text{V}$ , $V_{GS} = 0$			-100	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16\text{V}$ , $V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
Cutoff Current	$V_{GS(off)}$	$V_{DS} = -10\text{V}$ , $I_D = -1\text{mA}$	-1.0		-2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$ , $I_D = -5\text{A}$	5	8		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)1}$	$I_D = -5\text{A}$ , $V_{GS} = -10\text{V}$		42	53	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -2\text{A}$ , $V_{GS} = -4\text{V}$		85	120	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$		820		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$		470		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$		230		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		15		ns
Rise Time	$t_r$	See specified Test Circuit		150		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		85		ns
Fall Time	$t_f$	See specified Test Circuit		90		ns
Total Gate Charge	$Q_g$	$V_{DS} = -10\text{V}$ , $V_{GS} = -10\text{V}$ , $I_D = -5\text{A}$		25		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -10\text{V}$ , $V_{GS} = -10\text{V}$ , $I_D = -5\text{A}$		5		nC
Gate-to-Drain ("Miller") Charge	$Q_{gd}$	$V_{DS} = -10\text{V}$ , $V_{GS} = -10\text{V}$ , $I_D = -5\text{A}$		7		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -5\text{A}$ , $V_{GS} = 0$	-1.0	-1.5		V

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Switching Time Test Circuit





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