



FW114

## S/W Load Applications

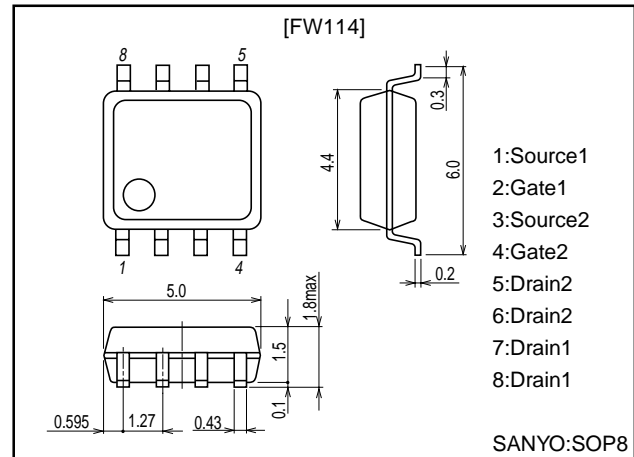
## Features

- Low ON resistance.
- 2.5V drive.

## Package Dimensions

unit:mm

2129



## 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	$V_{GSS}$		±10	V
Drain Current (DC)	$I_D$		-3	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-32	A
Allowable Power Dissipation	$P_D$	Mounted on ceramic board (1000mm <sup>2</sup> ×0.8mm) 1unit	1.7	W
Total Dissipation	$P_T$	Mounted on ceramic board (1000mm <sup>2</sup> ×0.8mm)	2.0	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

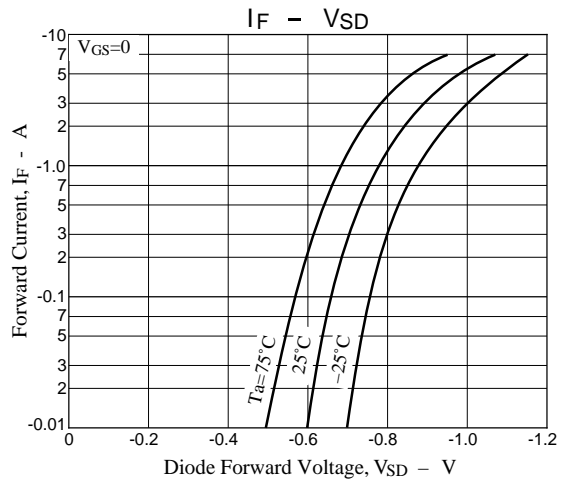
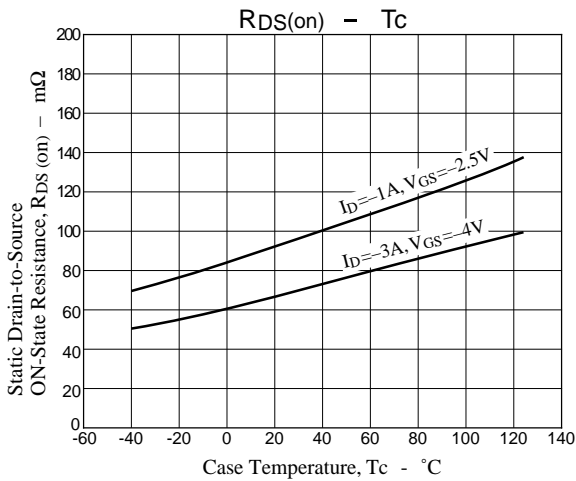
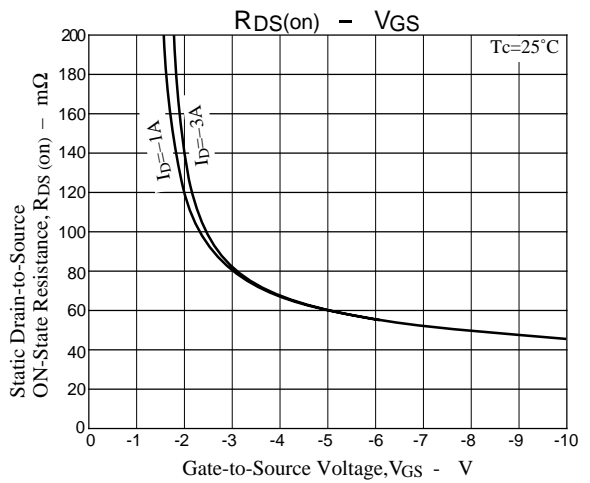
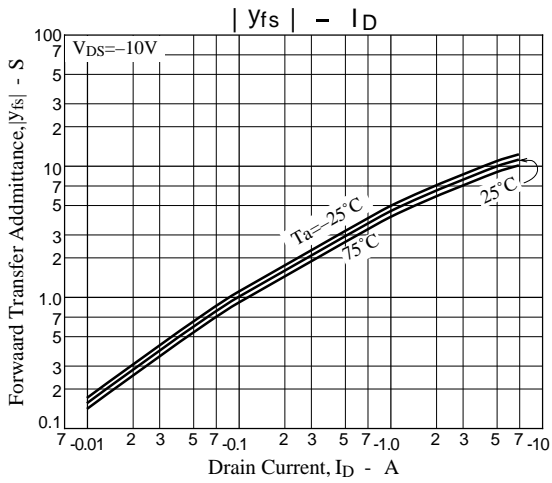
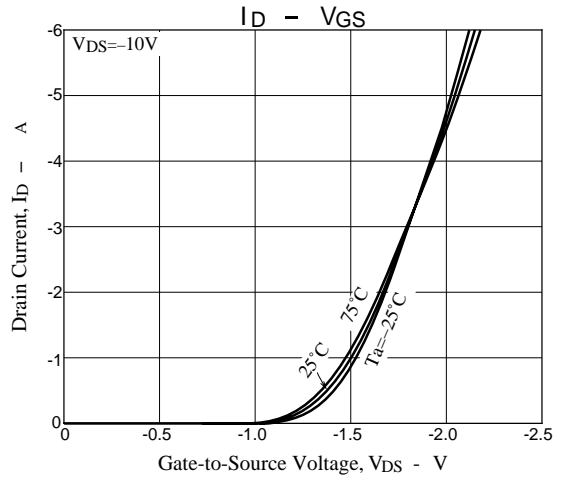
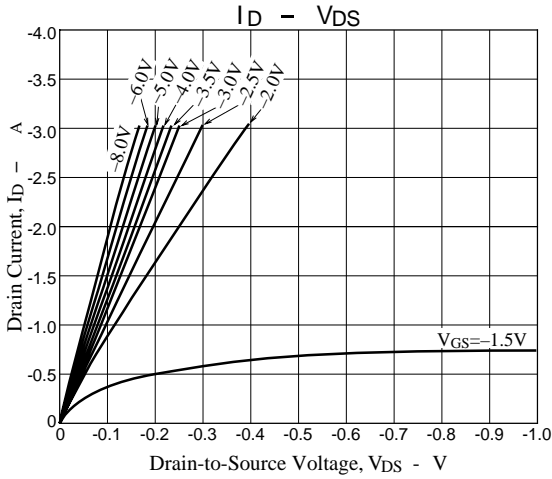
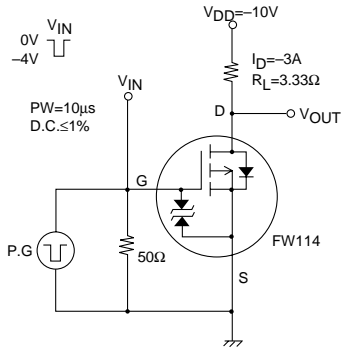
## Electrical Characteristics at Ta = 25°C

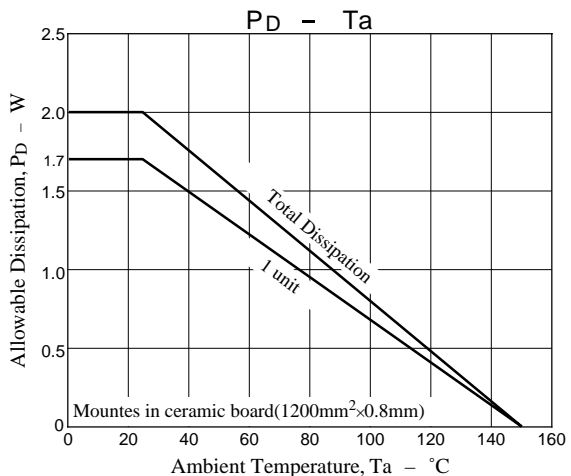
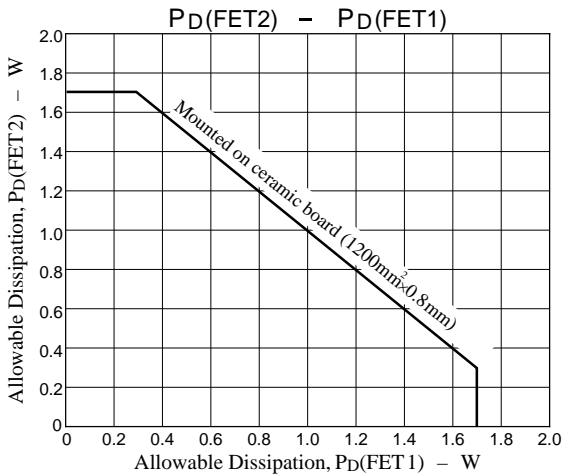
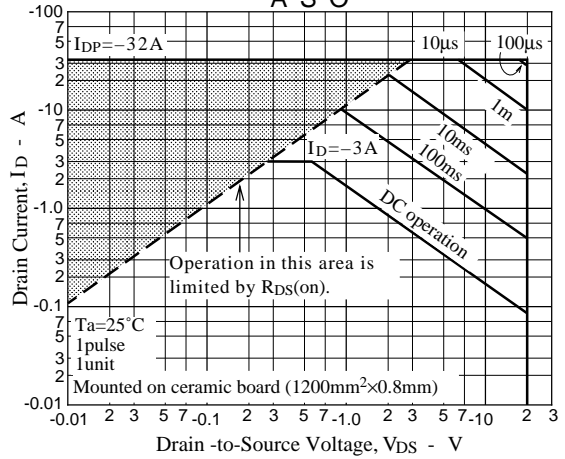
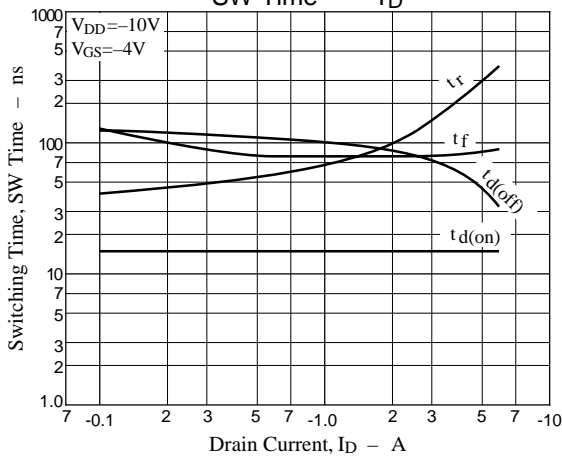
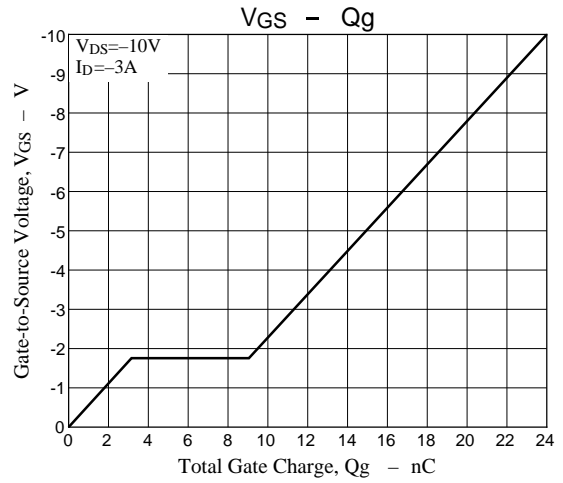
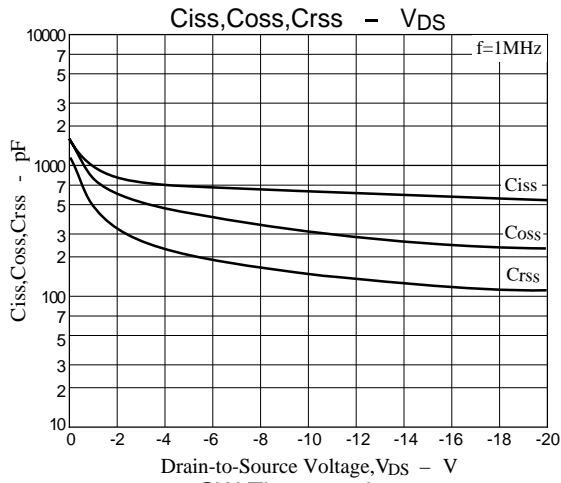
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA$ , $V_{GS} = 0$	-20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V$ , $V_{GS} = 0$			-100	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8V$ , $V_{DS} = 0$			±10	μA
Cutoff Current	$V_{GS(off)}$	$V_{DS} = -10V$ , $I_D = -1mA$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$ , $I_D = -3A$	5	8		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)1}$	$I_D = -3A$ , $V_{GS} = -4V$		70	90	mΩ
	$R_{DS(on)2}$	$I_D = -1A$ , $V_{GS} = -2.5V$		92	130	mΩ
Input Capacitance	$C_{iss}$	$V_{DS} = -10V$ , $f = 1MHz$		600		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10V$ , $f = 1MHz$		300		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10V$ , $f = 1MHz$		150		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		15		ns
Rise Time	$t_r$	See specified Test Circuit		140		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		80		ns
Fall Time	$t_f$	See specified Test Circuit		85		ns
Total Gate Charge	$Q_g$	$V_{DS} = -10V$ , $V_{GS} = -10V$ , $I_D = -3A$		24		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -10V$ , $V_{GS} = -10V$ , $I_D = -3A$		3		nC
Gate-to-Drain ("Miller") Charge	$Q_{gd}$	$V_{DS} = -10V$ , $V_{GS} = -10V$ , $I_D = -3A$		6		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -3A$ , $V_{GS} = 0$		-1.0	-1.5	V

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Switching Time Test Circuit





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