

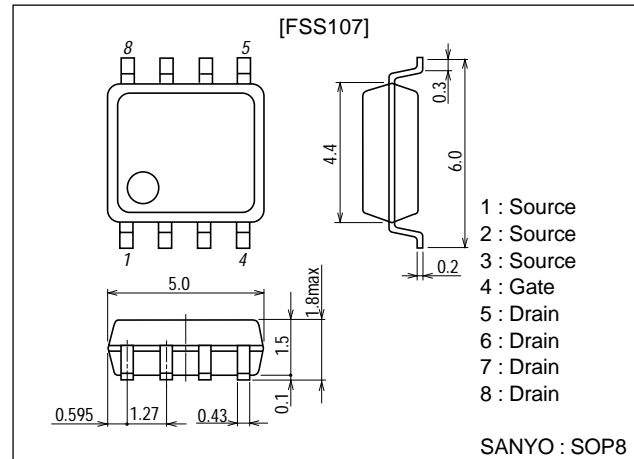
**FSS107****Load Switching Applications****Features**

- Low ON resistance.
- 2.5V drive.

**Package Dimensions**

unit:mm

2116

**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	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		-8	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-48	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1000mm <sup>2</sup> ×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	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$ , $V_{GS} = 0$	-20			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20\text{V}$ , $V_{GS} = 0$			-10	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8\text{V}$ , $V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$ , $I_D = -1\text{mA}$	-0.4		-1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$ , $I_D = -8\text{A}$	15	25		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -8\text{A}$ , $V_{GS} = -4\text{V}$		18	23	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -5\text{A}$ , $V_{GS} = -2.5\text{V}$		26	37	$\text{m}\Omega$

Marking : S107

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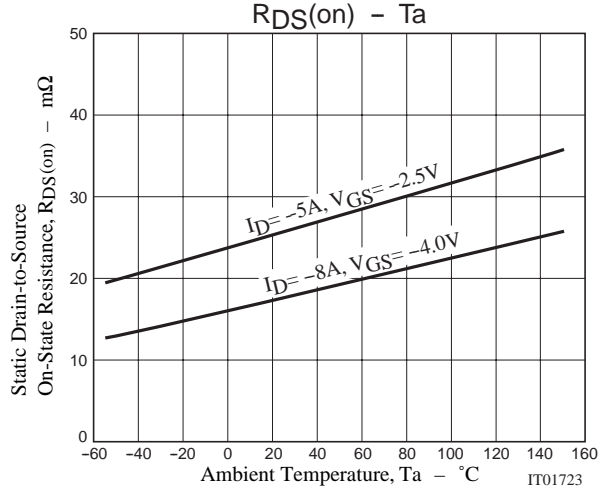
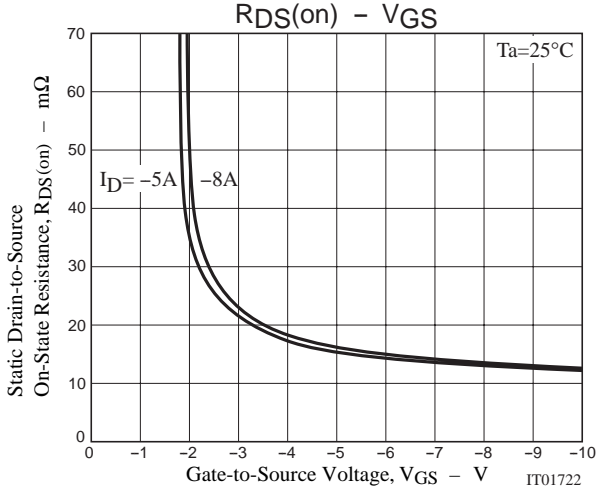
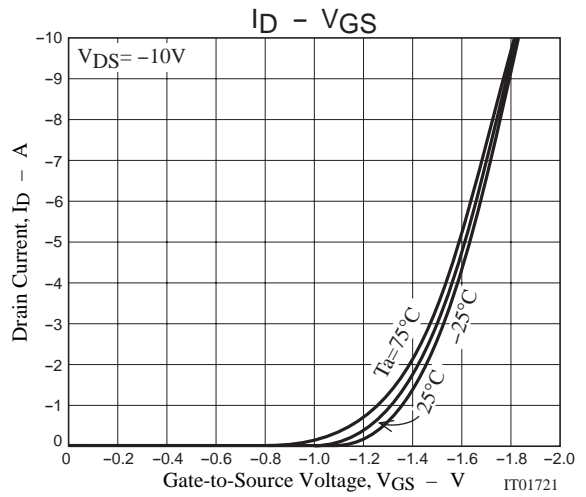
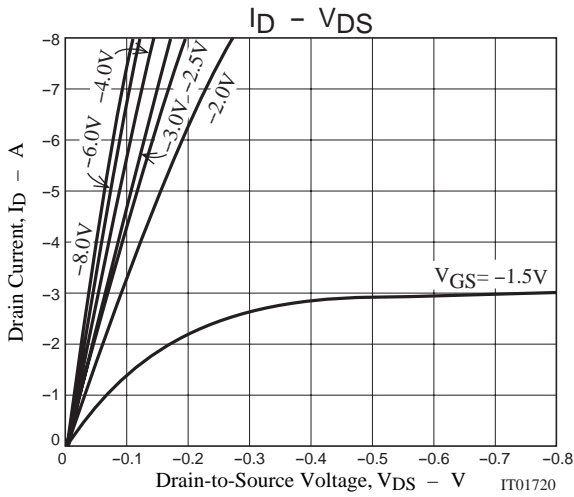
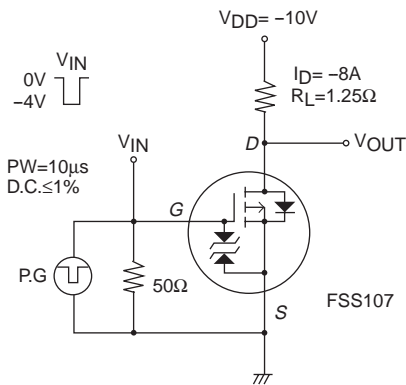
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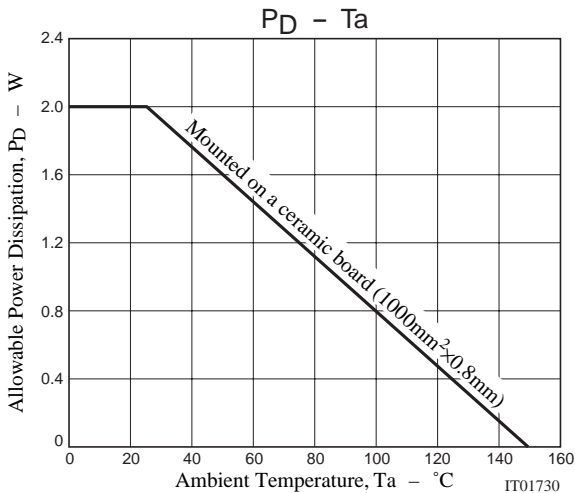
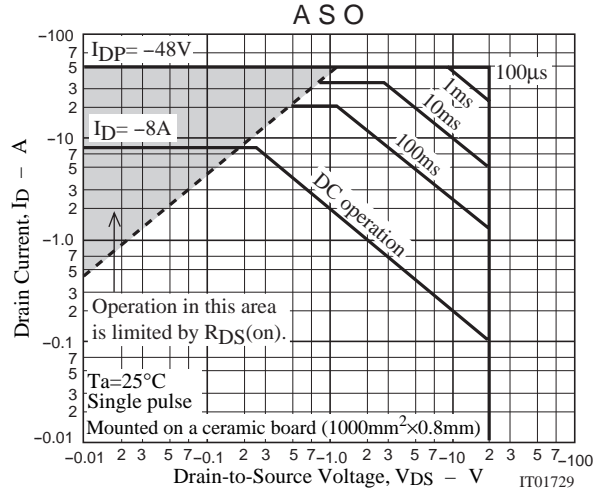
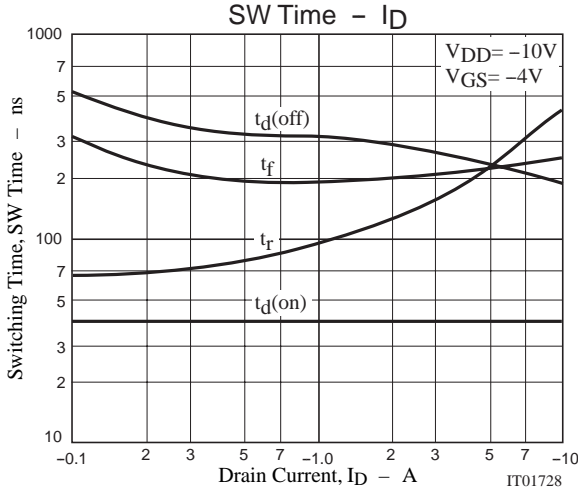
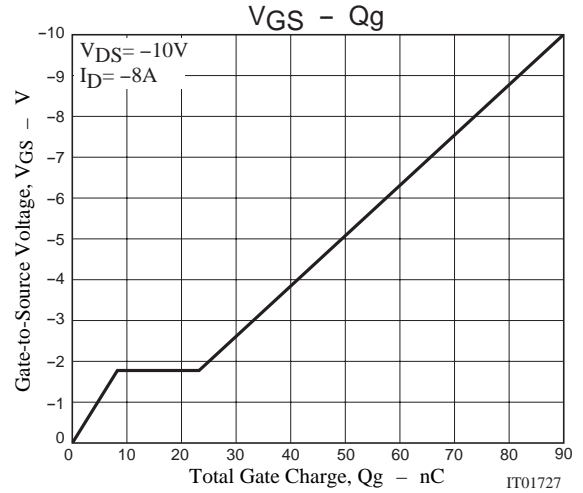
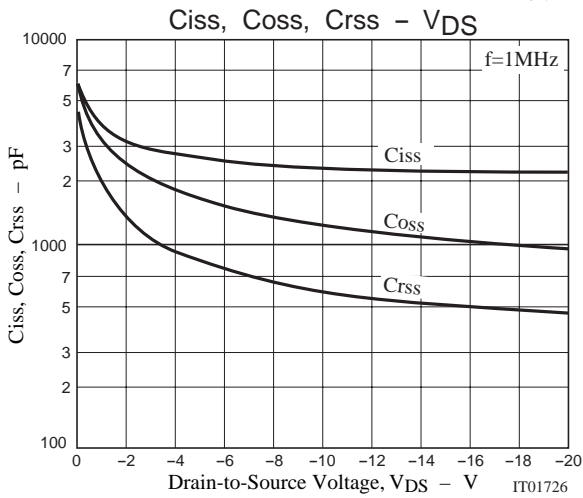
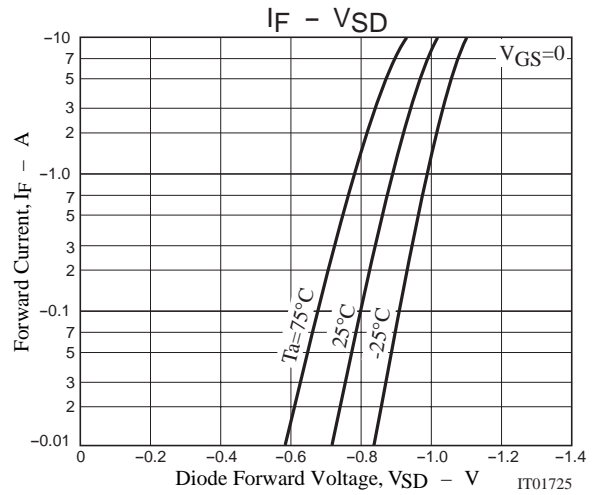
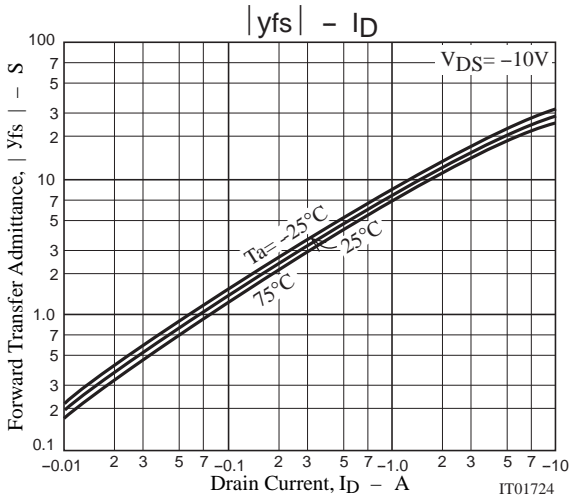
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS} = -10V, f = 1MHz$		2400		pF
Output Capacitance	Coss	$V_{DS} = -10V, f = 1MHz$		1200		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = -10V, f = 1MHz$		600		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		40		ns
Rise Time	$t_r$	See specified Test Circuit		350		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		200		ns
Fall Time	$t_f$	See specified Test Circuit		240		ns
Total Gate Charge	Qg	$V_{DS} = -10V, V_{GS} = -10V, I_D = -8A$		90		nC
Gate-to-Source Charge	Qgs	$V_{DS} = -10V, V_{GS} = -10V, I_D = -8A$		8		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS} = -10V, V_{GS} = -10V, I_D = -8A$		16		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -8A, V_{GS} = 0$		-1.0	-1.5	V

## Switching Time Test Circuit



# FSS107



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