



# FW707 — P-Channel Silicon MOSFET

## General-Purpose Switching Device

### Applications

#### Features

- Composite type with a P-channel MOSFET driving from a 4V supply voltage contained in a single package
- High-density mounting

#### Specifications

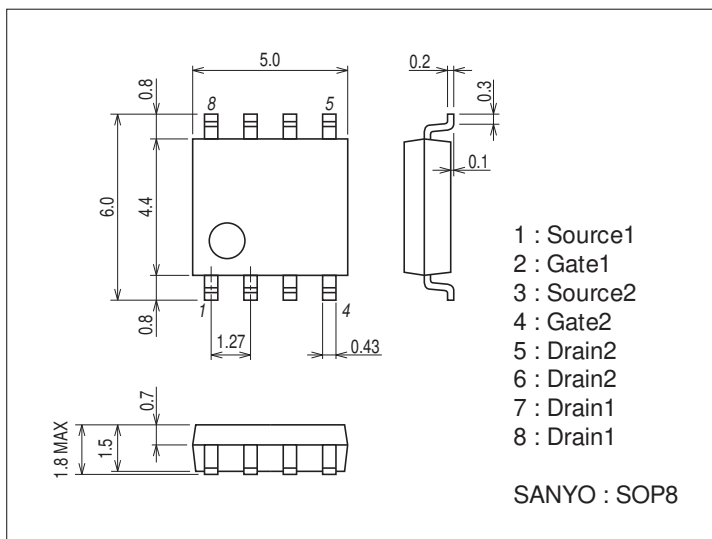
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-8	A
Drain Current (PW≤10s)	I <sub>D</sub>	Duty cycle≤1%	-9	A
Drain Current (PW≤100ms)	I <sub>D</sub>	Duty cycle≤1%	-19	A
Drain Current (PW≤10μs)	I <sub>DP</sub>	Duty cycle≤1%	-52	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (2000mm <sup>2</sup> ×0.8mm) 1unit, PW≤10s	2.3	W
Total Dissipation	P <sub>T</sub>	When mounted on ceramic substrate (2000mm <sup>2</sup> ×0.8mm), PW≤10s	2.5	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Package Dimensions

unit : mm (typ)

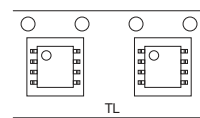
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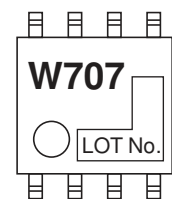
#### Product & Package Information

- Package : SOP8
- JEITA, JEDEC : SC-87, SOT96
- Minimum Packing Quantity : 1,000 pcs./reel

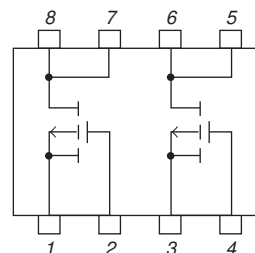
#### Packing Type : TL



#### Marking



#### Electrical Connection

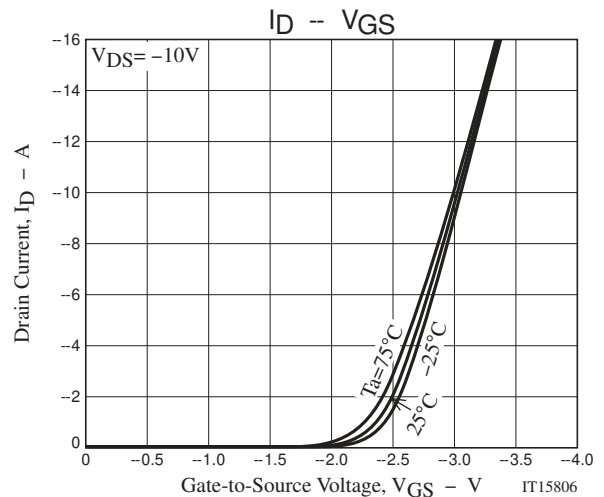
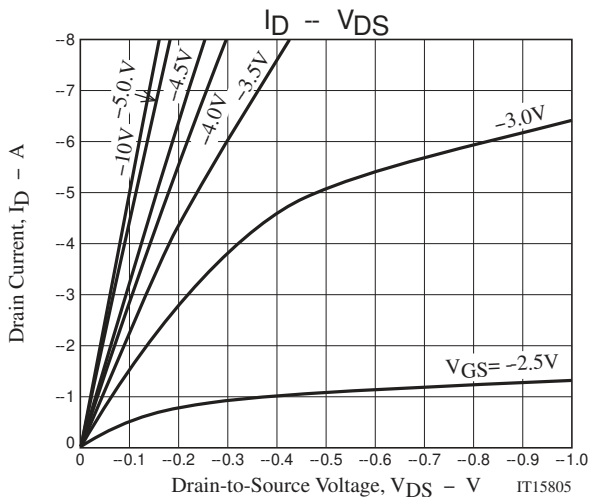
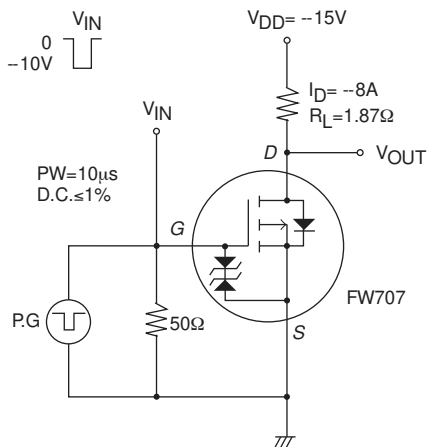


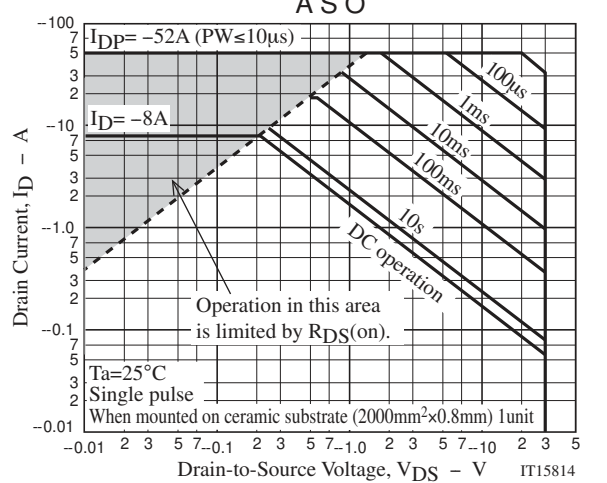
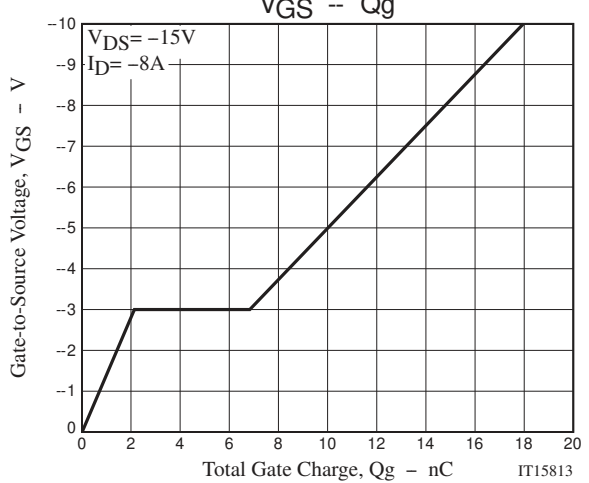
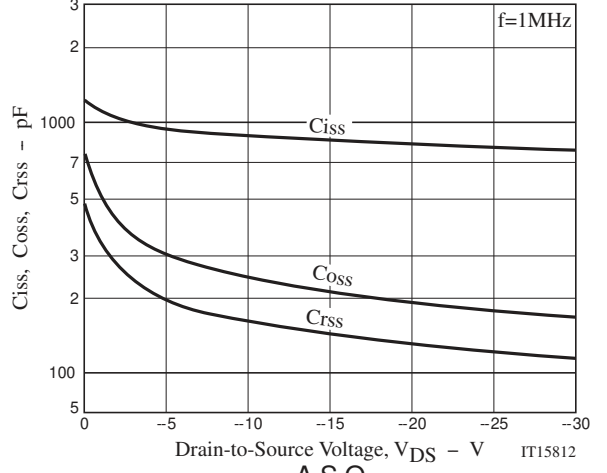
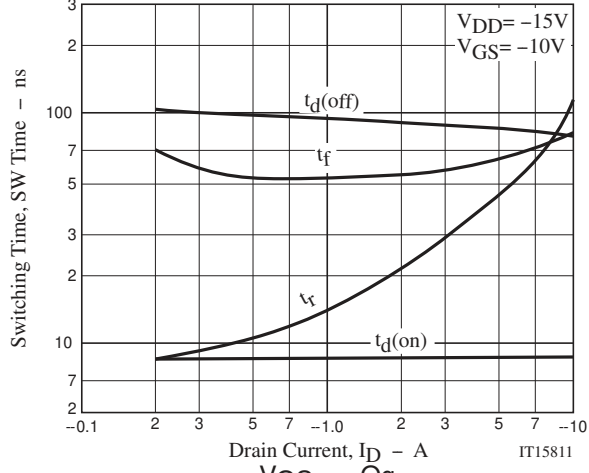
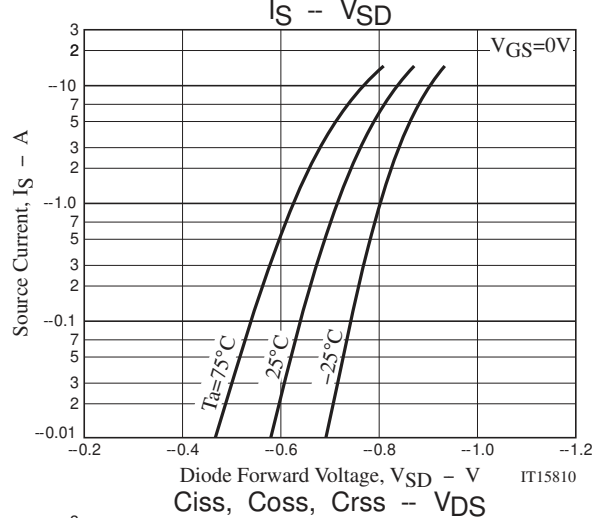
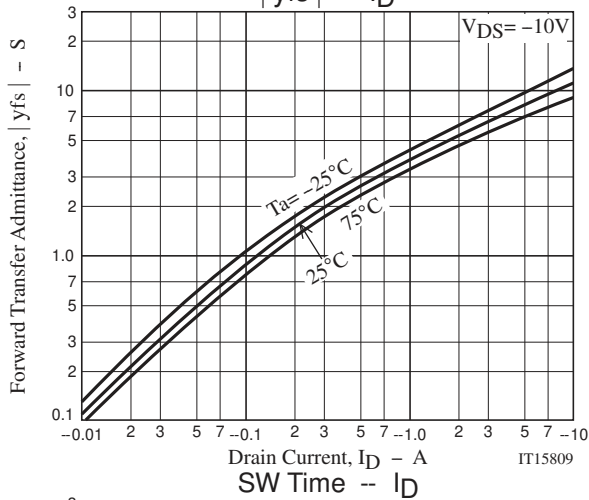
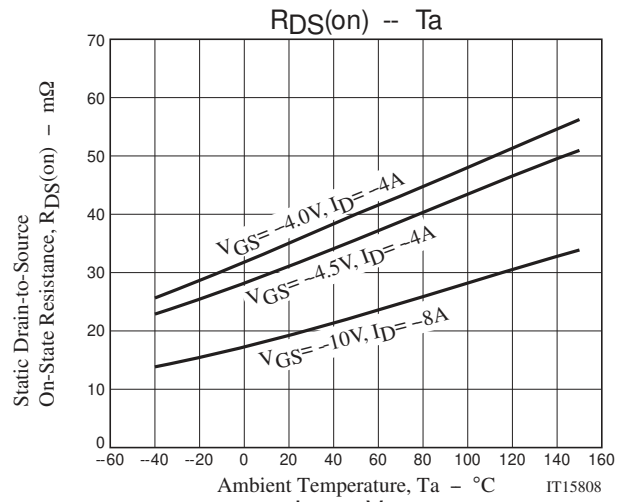
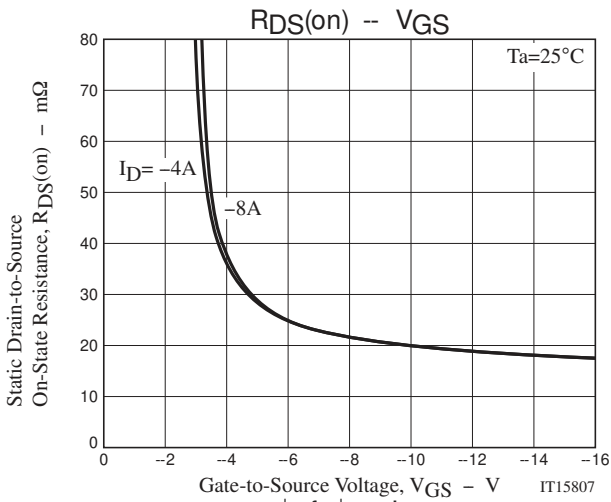
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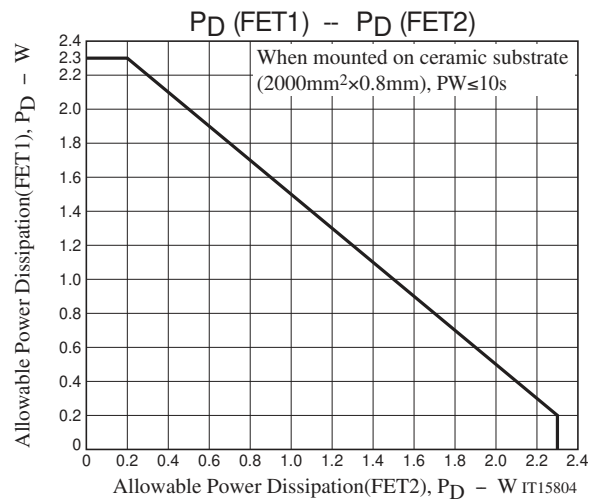
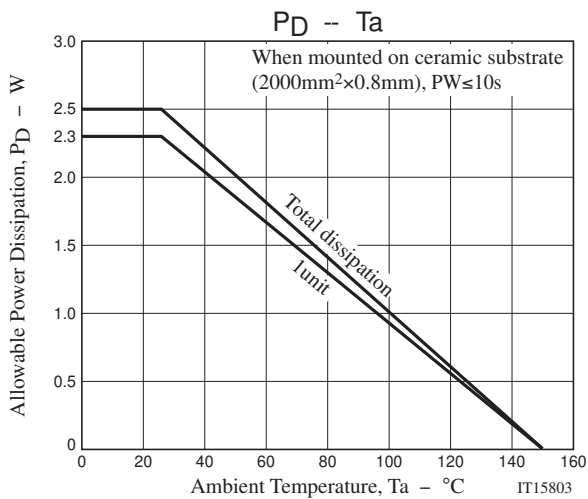
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}, V_{GS} = 0\text{V}$	-30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30\text{V}, V_{GS} = 0\text{V}$			-1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16\text{V}, V_{DS} = 0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}, I_D = -1\text{mA}$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}, I_D = -8\text{A}$		10		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -8\text{A}, V_{GS} = -10\text{V}$		20	26	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -4\text{A}, V_{GS} = -4.5\text{V}$		32	45	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D = -4\text{A}, V_{GS} = -4\text{V}$		36	51	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10\text{V}, f = 1\text{MHz}$		900		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10\text{V}, f = 1\text{MHz}$		240		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10\text{V}, f = 1\text{MHz}$		160		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		8.7		ns
Rise Time	$t_r$	See specified Test Circuit.		73		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		84		ns
Fall Time	$t_f$	See specified Test Circuit.		74		ns
Total Gate Charge	$Q_g$	$V_{DS} = -15\text{V}, V_{GS} = -10\text{V}, I_D = -8\text{A}$		18		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -15\text{V}, V_{GS} = -10\text{V}, I_D = -8\text{A}$		2.1		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = -15\text{V}, V_{GS} = -10\text{V}, I_D = -8\text{A}$		4.7		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -8\text{A}, V_{GS} = 0\text{V}$		-0.82	-1.2	V

## Switching Time Test Circuit







Note on usage : Since the FW707 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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