



ON Semiconductor®

ON Semiconductor DATA SHEET

FW705 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Composite type with a P-channel MOSFET driving from a 2.5V 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 _{DSS}		-20	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-6	A
Drain Current (PW≤10μs)	I _{DP}	Duty cycle≤1%	-52	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (1500mm²×0.8mm) 1unit, PW≤10s	2.3	W
Total Dissipation	P _T	When mounted on ceramic substrate (1500mm²×0.8mm), PW≤10s	2.5	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	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =-1mA, V _{GS} =0V	-20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} = ±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-6A	7.8	13		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-6A, V _{GS} =-4V		30	40	mΩ
	R _{DS(on)2}	I _D =-3A, V _{GS} =-2.5V		42	59	mΩ

Marking : W705

Continued on next page.

FW705

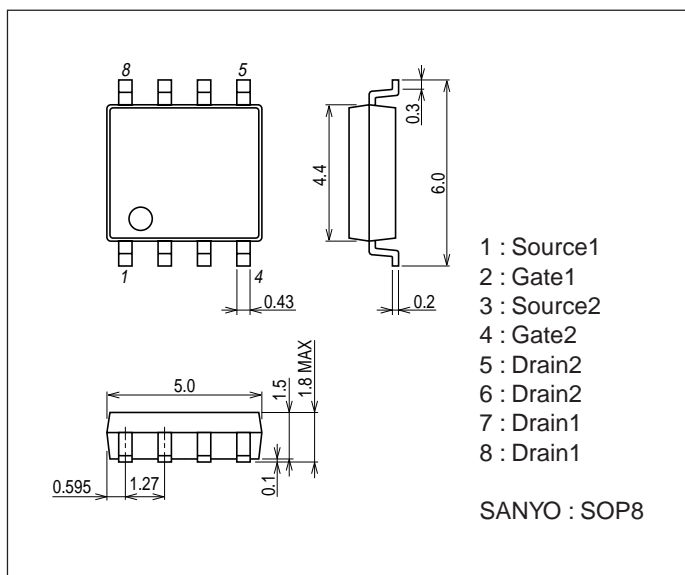
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =-10V, f=1MHz		1720		pF
Output Capacitance	Coss	V _{DS} =-10V, f=1MHz		260		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-10V, f=1MHz		245		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		19		ns
Rise Time	t _r	See specified Test Circuit.		390		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		110		ns
Fall Time	t _f	See specified Test Circuit.		145		ns
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4V, I _D =-6A		18.4		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =-10V, V _{GS} =-4V, I _D =-6A		3.2		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =-10V, V _{GS} =-4V, I _D =-6A		5.2		nC
Diode Forward Voltage	V _{SD}	I _S =-6A, V _{GS} =0V		-0.82	-1.2	V

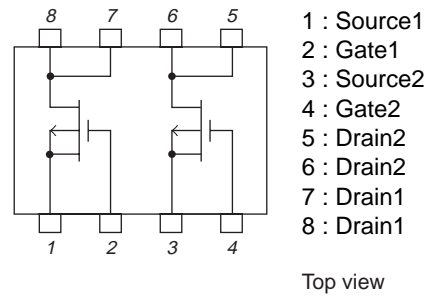
Package Dimensions

unit : mm (typ)

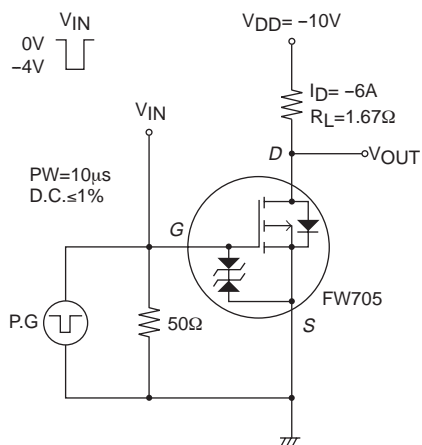
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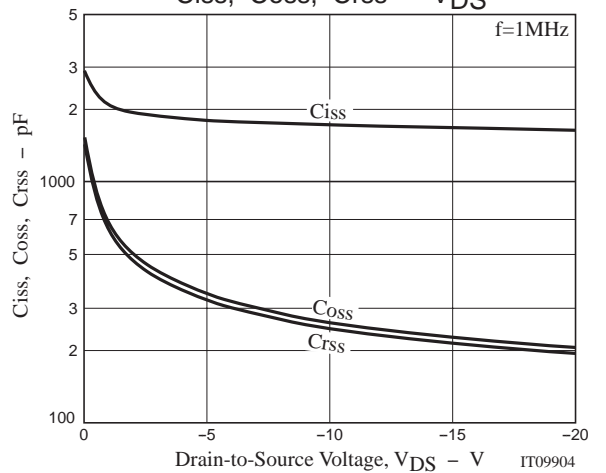
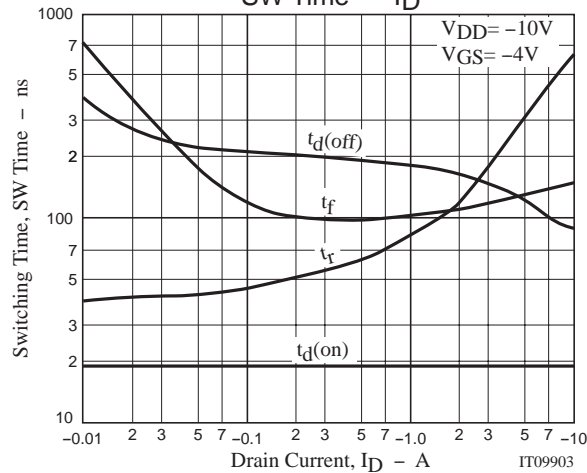
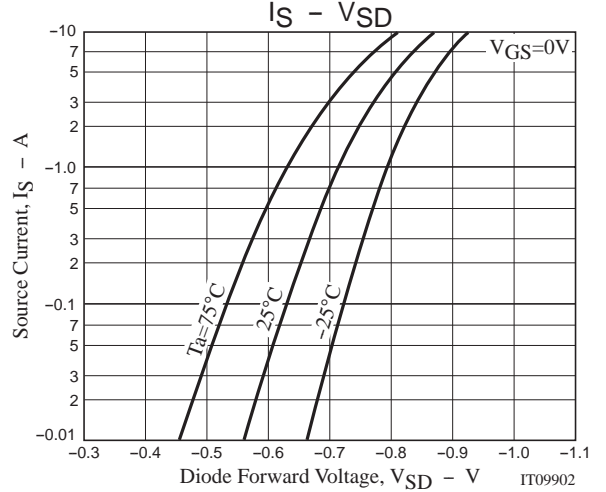
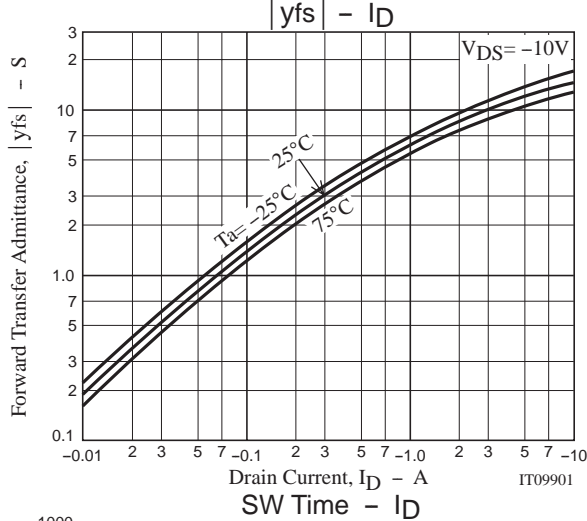
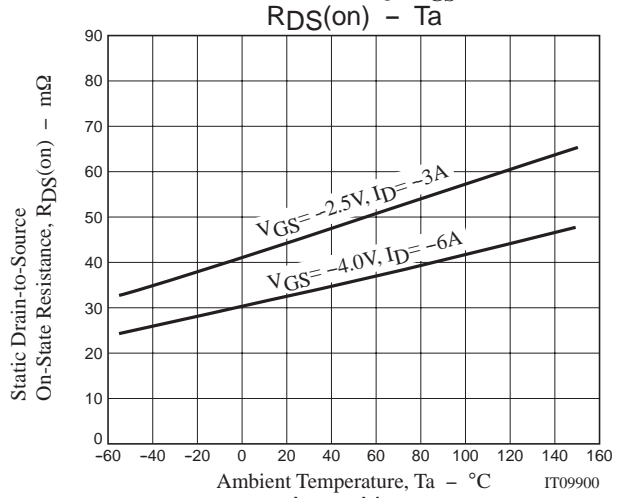
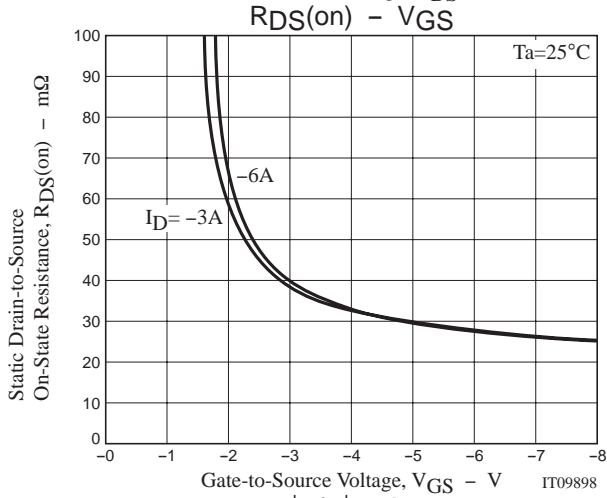
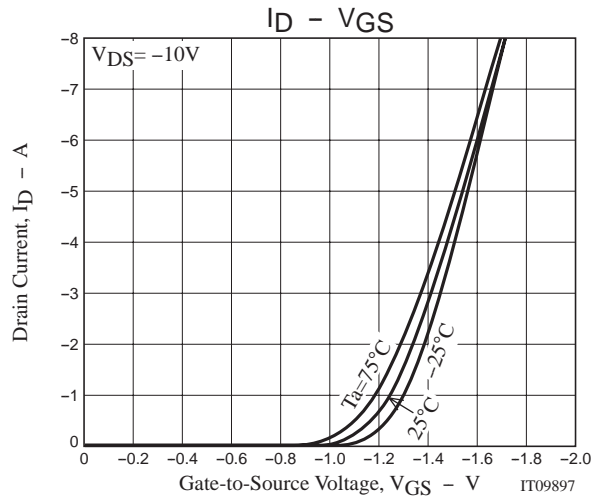
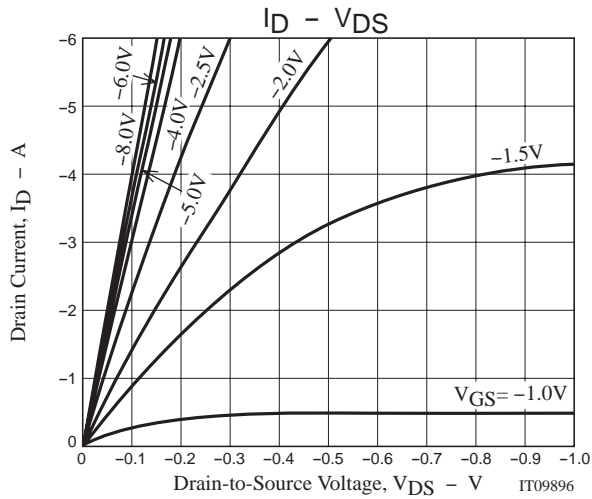


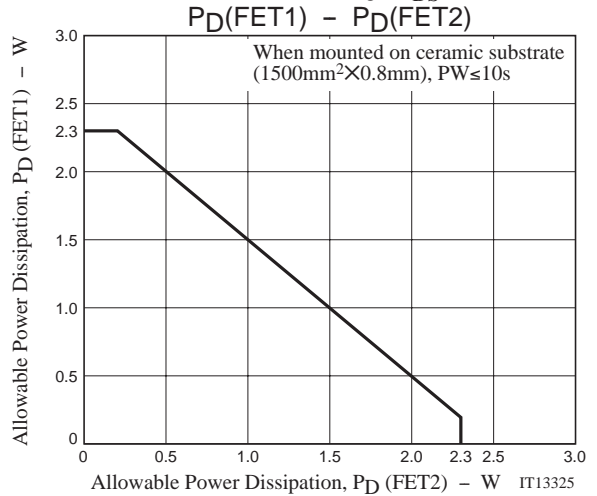
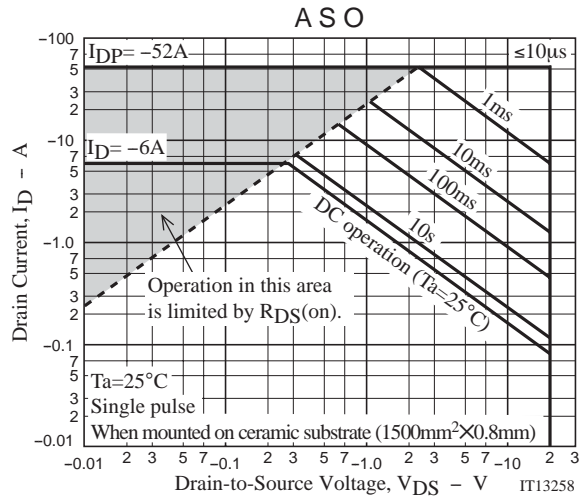
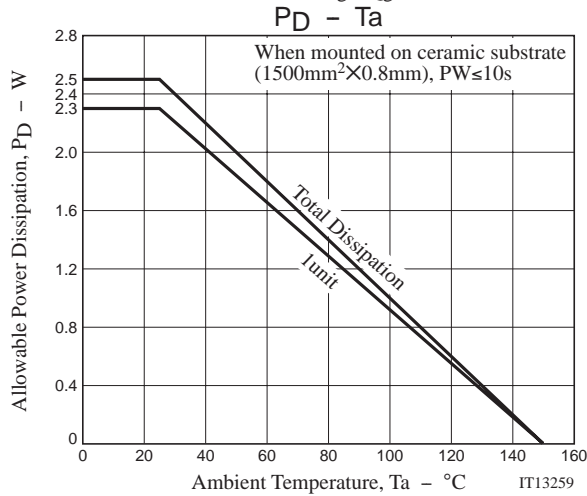
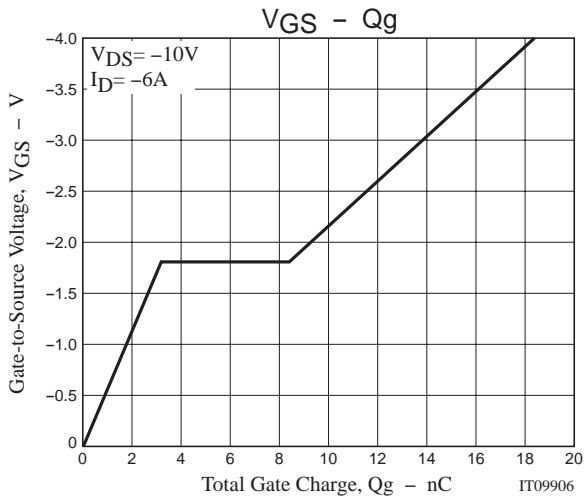
Electrical Connection



Switching Time Test Circuit







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