



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel and P-Channel Silicon MOSFETs

FW907 — General-Purpose Switching Device Applications

Features

- ON-resistance Nch: $R_{DS(on)1}=13m\Omega$ (typ.), Pch: $R_{DS(on)1}=20m\Omega$ (typ.)
- 4V drive
- N-channel MOSFET + P-channel MOSFET

Specifications

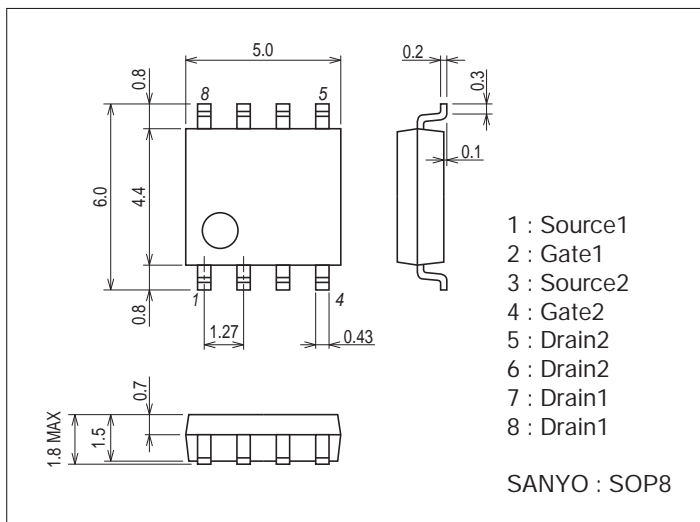
Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V_{DSS}		30	-30	V
Gate-to-Source Voltage	V_{GSS}		± 20	± 20	V
Drain Current (DC)	I_D		10	-8	A
Drain Current ($PW \leq 10s$)	I_D	Duty cycle $\leq 1\%$	11.5	-9	A
Drain Current ($PW \leq 100ms$)	I_D	Duty cycle $\leq 1\%$	24	-19	A
Drain Current ($PW \leq 10\mu s$)	I_{DP}	Duty cycle $\leq 1\%$	52	-52	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (2000mm ² ×0.8mm) 1unit, $PW \leq 10s$	2.3		W
Total Dissipation	P_T	When mounted on ceramic substrate (2000mm ² ×0.8mm), $PW \leq 10s$	2.5		W
Channel Temperature	T_{ch}		150		$^\circ C$
Storage Temperature	T_{stg}		-55 to +150		$^\circ C$

Package Dimensions

unit : mm (typ)

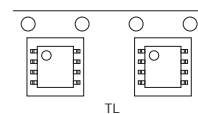
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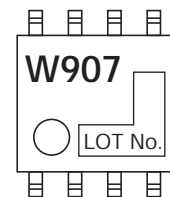
Product & Package Information

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

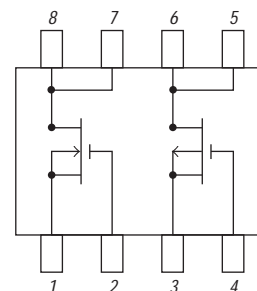
Packing Type : TL



Marking



Electrical Connection



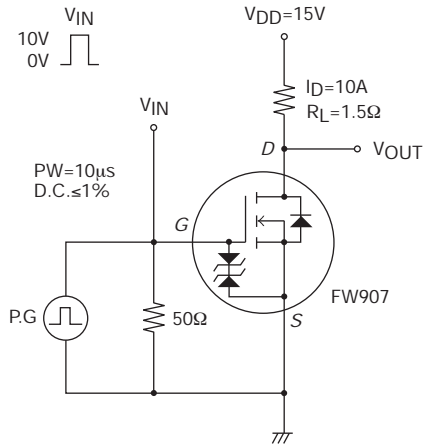
FW907

Electrical Characteristics at Ta=25°C

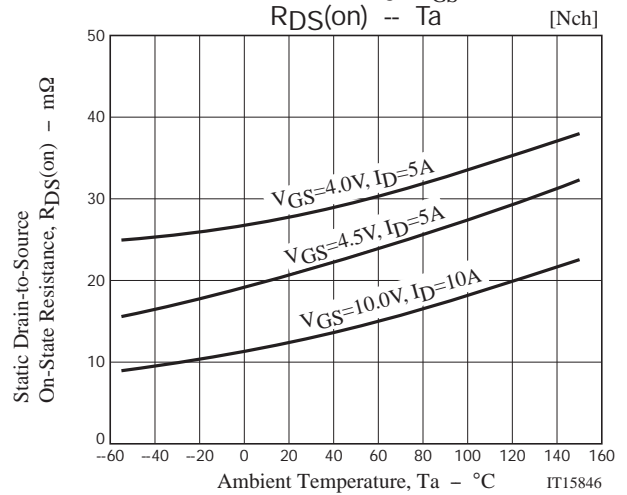
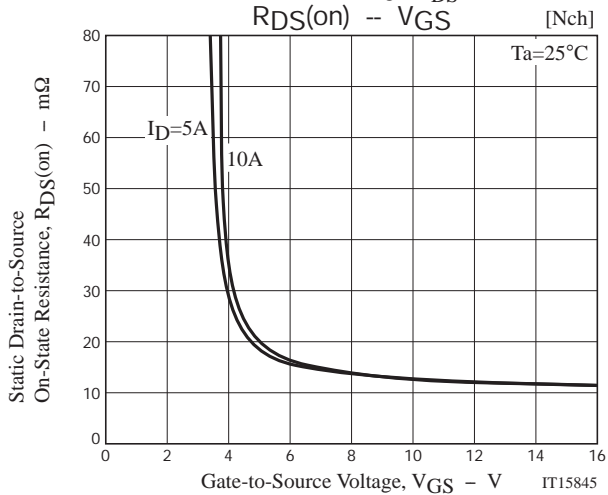
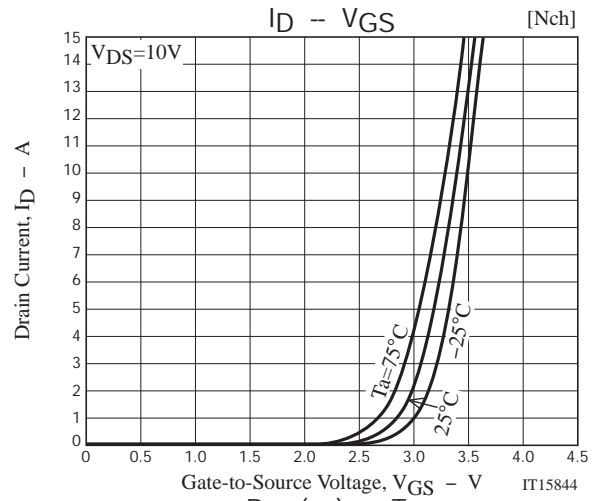
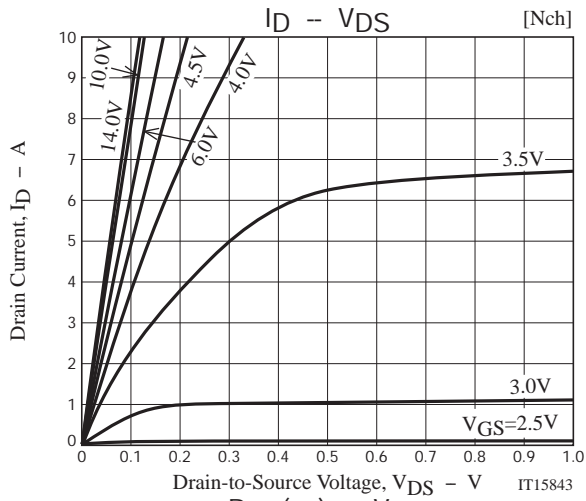
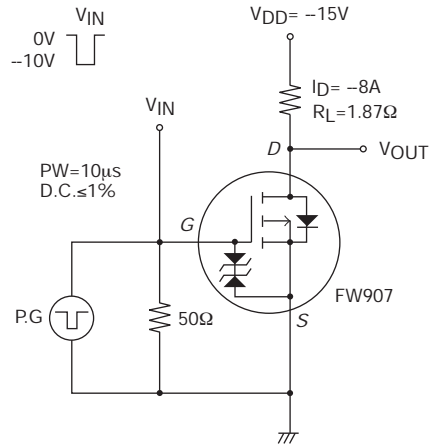
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[N-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =1mA, V _{GS} =0V	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =10A		5.2		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =10A, V _{GS} =10V		13	17	mΩ
	R _{DS(on)2}	I _D =5A, V _{GS} =4.5V		21	30	mΩ
	R _{DS(on)3}	I _D =5A, V _{GS} =4V		27	38	mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		1000		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		170		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		100		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		12		ns
Rise Time	t _r	See specified Test Circuit.		75		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		57		ns
Fall Time	t _f	See specified Test Circuit.		44		ns
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =10V, I _D =10A		17		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =15V, V _{GS} =10V, I _D =10A		3.6		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =15V, V _{GS} =10V, I _D =10A		3.0		nC
Diode Forward Voltage	V _{SD}	I _S =10A, V _{GS} =0V		0.85	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =-1mA, V _{GS} =0V	-30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-8A		10		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-8A, V _{GS} =-10V		20	26	mΩ
	R _{DS(on)2}	I _D =-4A, V _{GS} =-4.5V		32	45	mΩ
	R _{DS(on)3}	I _D =-4A, V _{GS} =-4V		36	51	mΩ
Input Capacitance	C _{iss}	V _{DS} =-10V, f=1MHz		875		pF
Output Capacitance	C _{oss}	V _{DS} =-10V, f=1MHz		200		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-10V, f=1MHz		150		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		8.1		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} =-15V, V _{GS} =-10V, I _D =-8A		18		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =-15V, V _{GS} =-10V, I _D =-8A		2.1		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =-15V, V _{GS} =-10V, I _D =-8A		4.7		nC
Diode Forward Voltage	V _{SD}	I _S =-8A, V _{GS} =0V		-0.82	-1.2	V

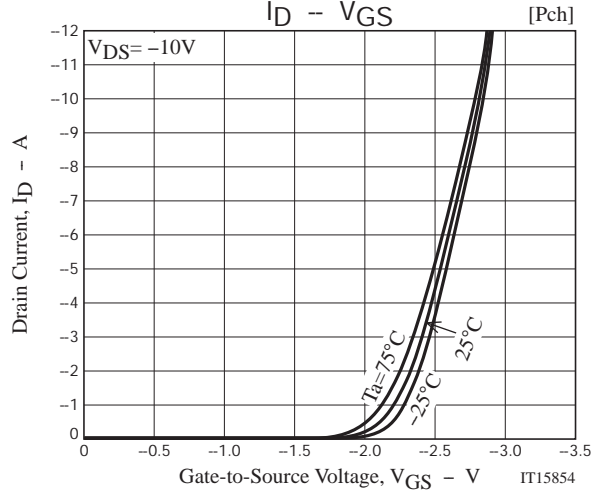
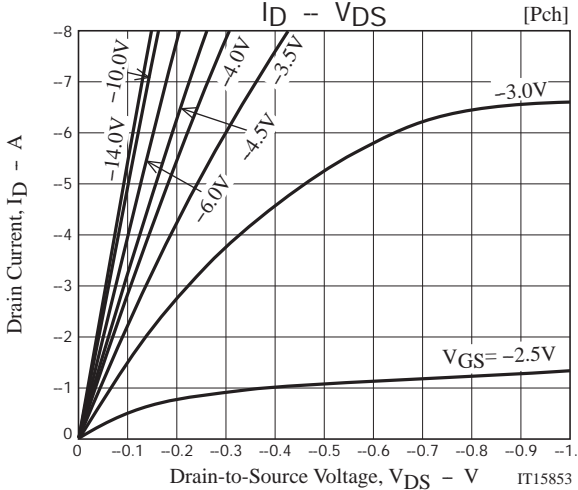
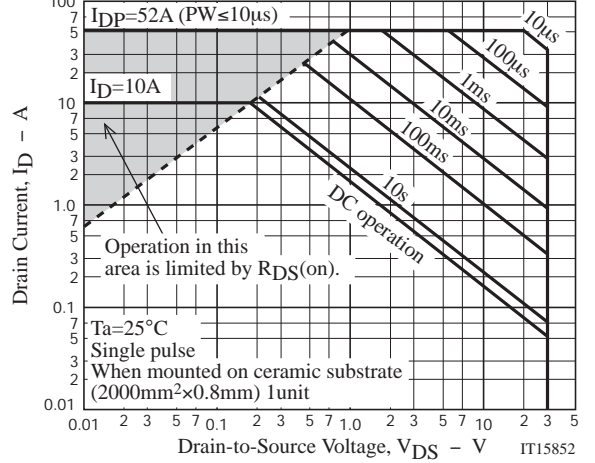
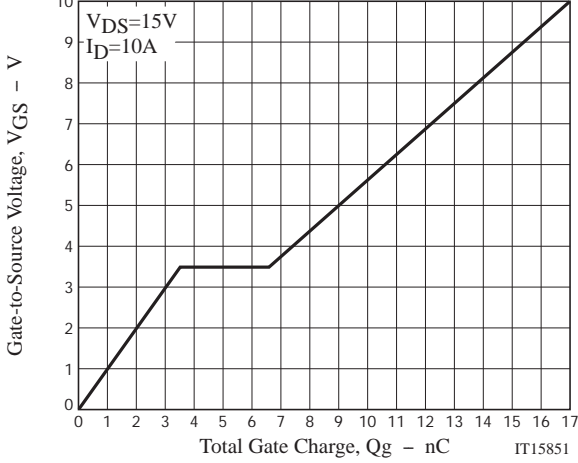
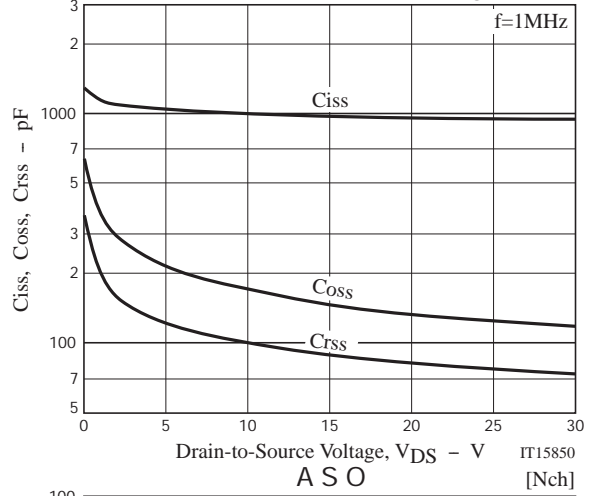
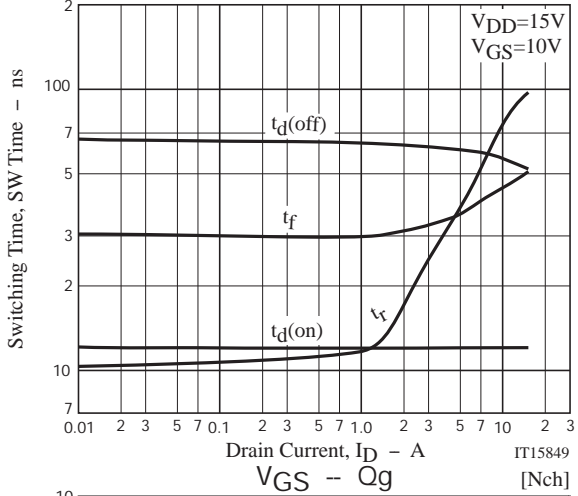
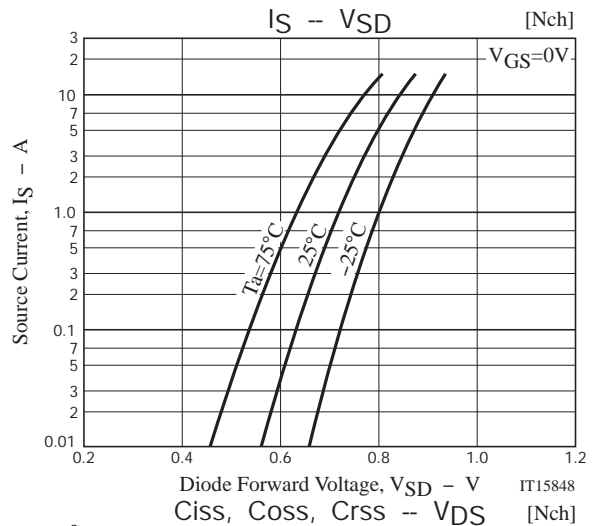
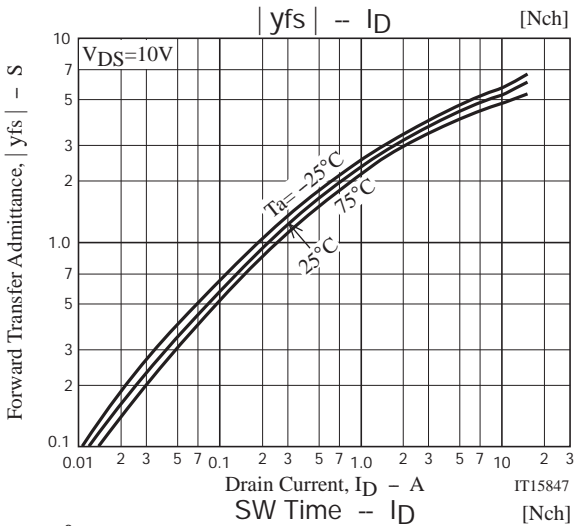
Switching Time Test Circuit

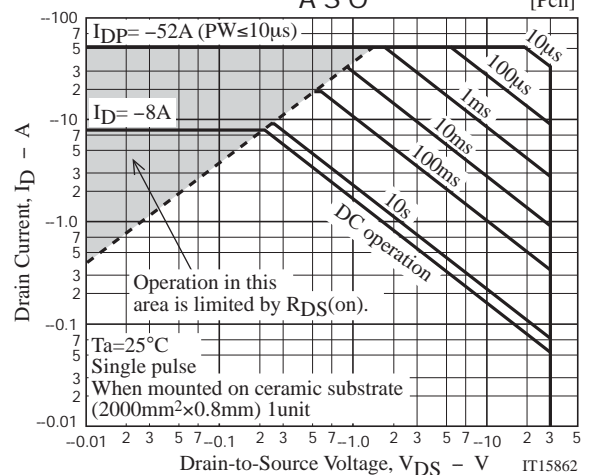
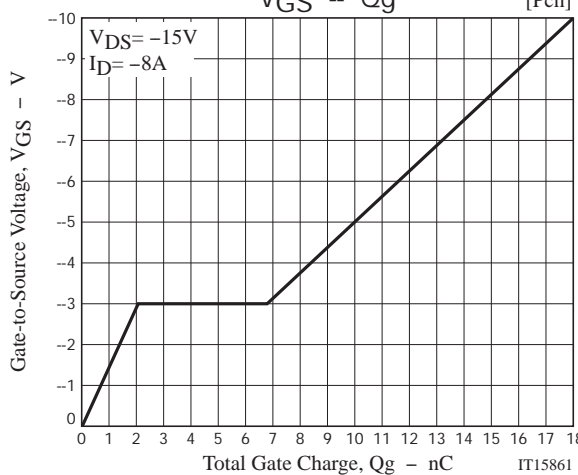
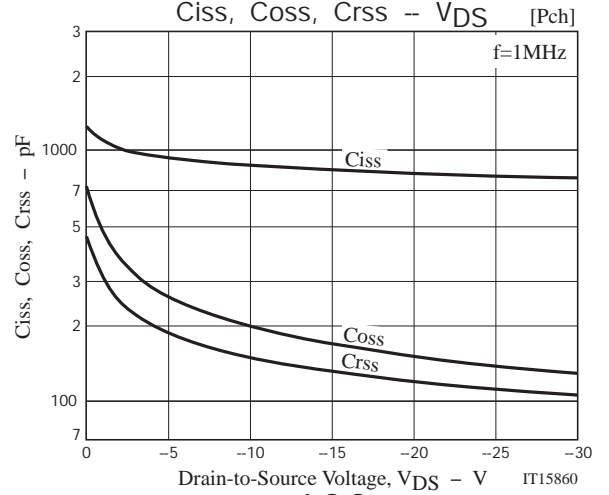
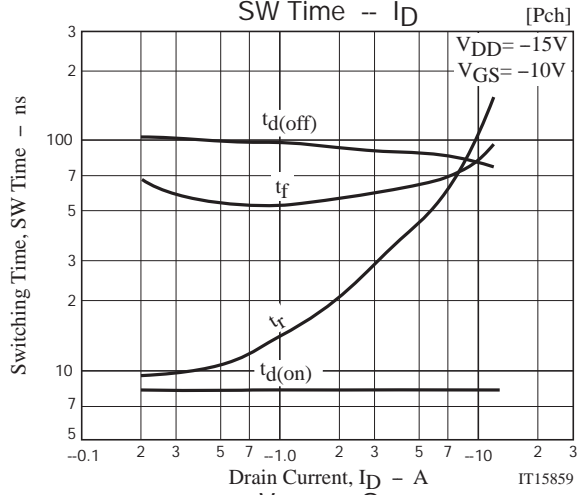
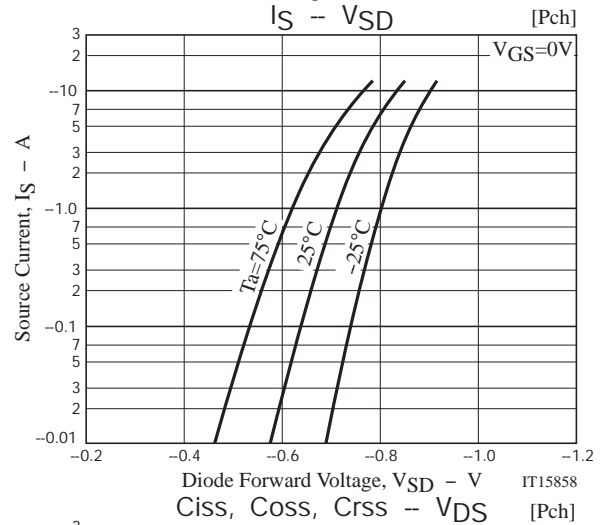
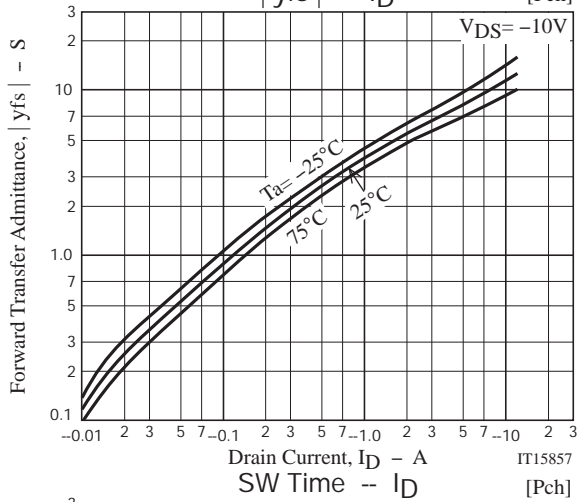
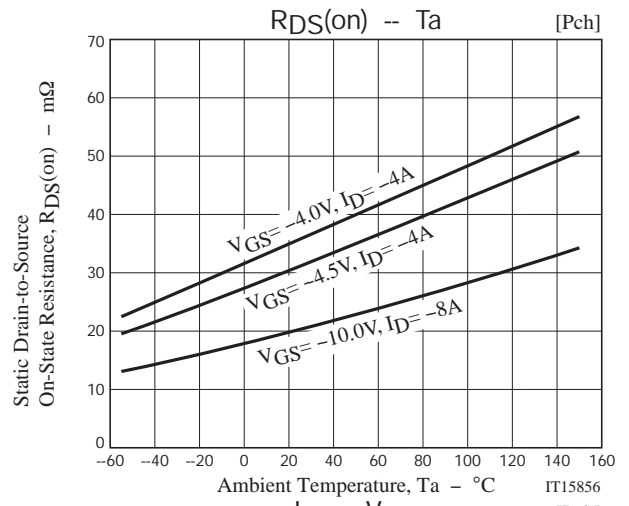
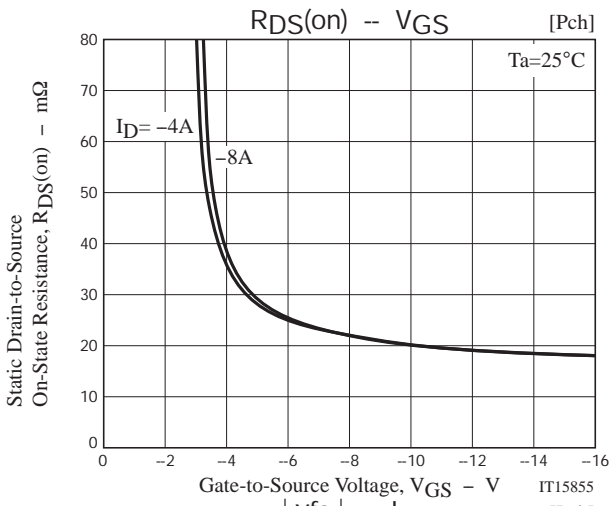
[N-channel]

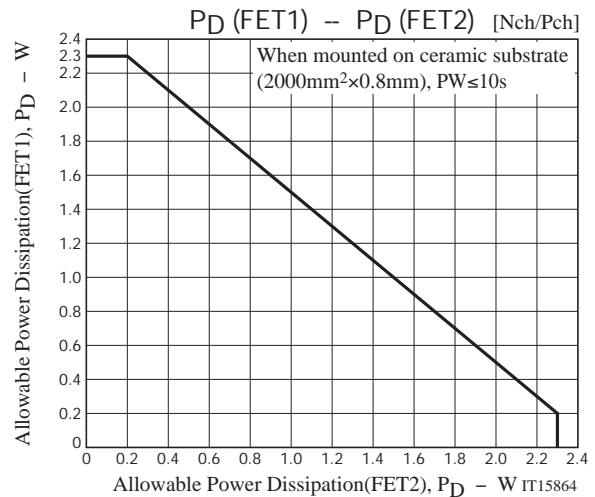
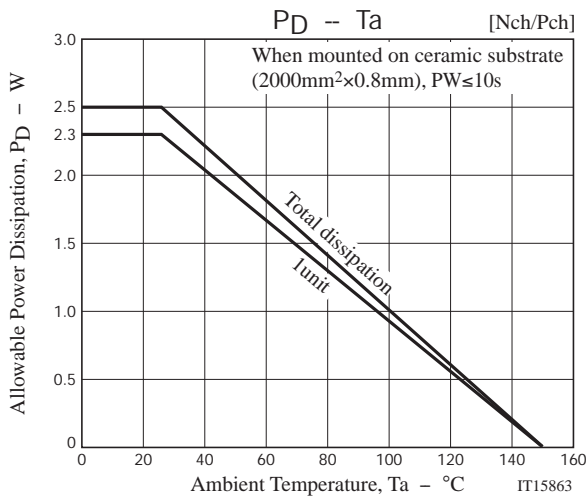


[P-channel]









Note on usage : Since the FW907 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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