



# FW341 — N-Channel and P-Channel Silicon MOSFETs

## General-Purpose Switching Device Applications

### Features

www.DataSheet4U.com Low ON-resistance.

- Ultrahigh-speed switching.
- Composite type with an N-channel MOSFET and a P-channel MOSFET driving from a 4V supply voltage contained in a single package.
- High-density mounting.
- Best suited for motor drive application.

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		30	-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	±20	V
Drain Current (DC)	I <sub>D</sub>		3.5	-2.5	A
Drain Current (PW≤10s)	I <sub>D</sub>	duty cycle≤1%	4	-3	A
Drain Current (PW≤100ms)	I <sub>D</sub>	duty cycle≤1%	6	-4.5	A
Drain Current (PW≤10μs)	I <sub>DP</sub>	duty cycle≤1%	14	-10	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (2000mm <sup>2</sup> ×0.8mm)1unit	1.4		W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (2000mm <sup>2</sup> ×0.8mm)	1.7		W
Channel Temperature	T <sub>ch</sub>		150		°C
Storage Temperature	T <sub>stg</sub>		-55 to +150		°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[N-channel]						
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =3.5A	3.0	5.3		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =3.5A, V <sub>GS</sub> =10V		64	84	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =1.8A, V <sub>GS</sub> =4V		105	150	mΩ

Marking : W341

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# FW341

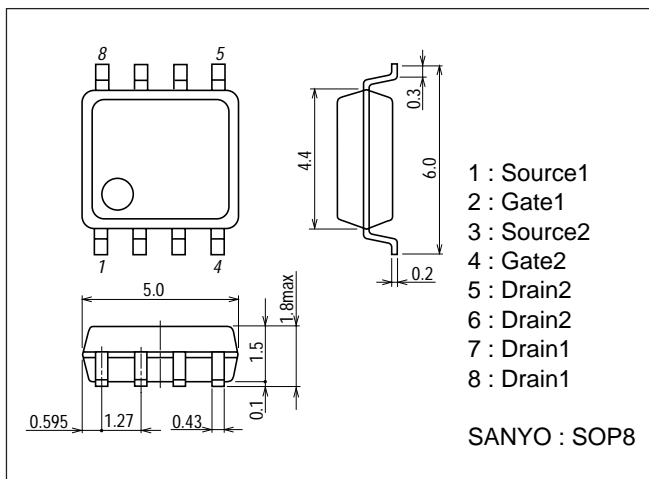
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		180		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		42		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		25		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		7		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		15		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		19		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		5		ns
Total Gate Charge	Qg	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =3.5A		5.0		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =3.5A		0.9		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =3.5A		0.6		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =3.5A, V <sub>GS</sub> =0		0.88	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-2.5A	2	3		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-2.5A, V <sub>GS</sub> =-10V		110	145	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-4V		240	340	mΩ
Input Capacitance	Ciss	V <sub>DS</sub> =-10V, f=1MHz		200		pF
Output Capacitance	Coss	V <sub>DS</sub> =-10V, f=1MHz		47		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-10V, f=1MHz		32		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		7		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		3.5		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		20		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		8		ns
Total Gate Charge	Qg	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-2.5A		5.5		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-2.5A		0.98		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-2.5A		0.82		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-2.5A, V <sub>GS</sub> =0		-0.87	-1.5	V

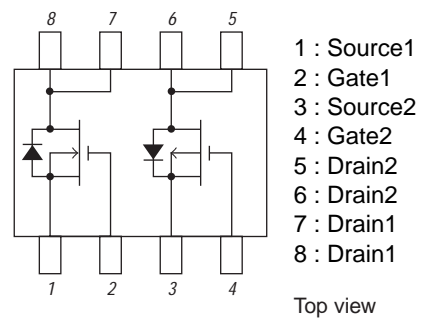
## Package Dimensions

unit : mm

2129

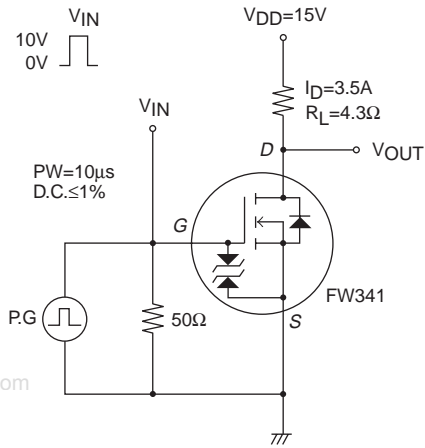


## Electrical Connection

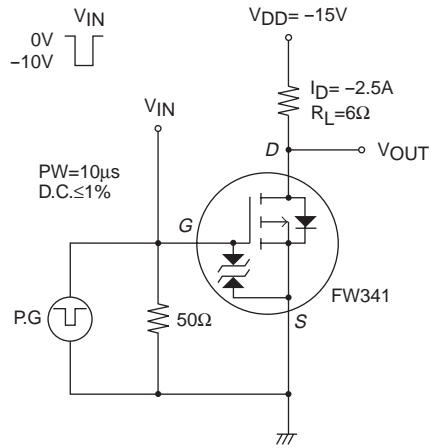


Switching Time Test Circuit

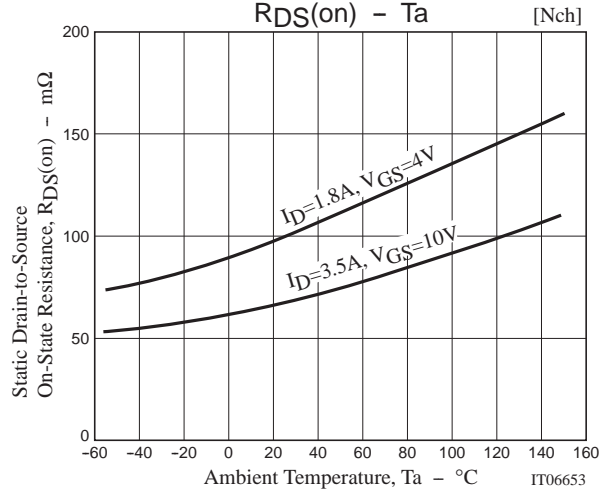
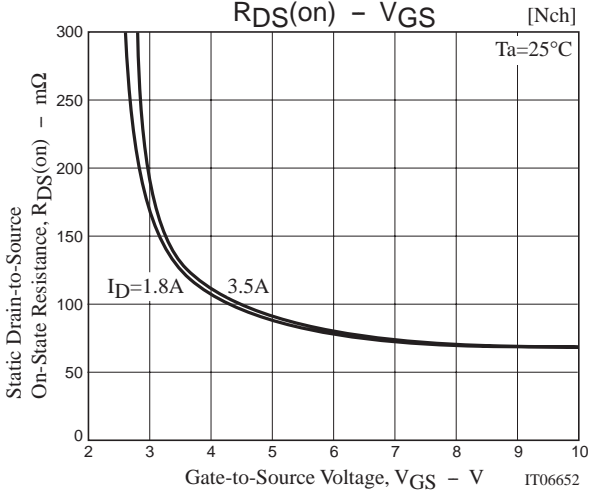
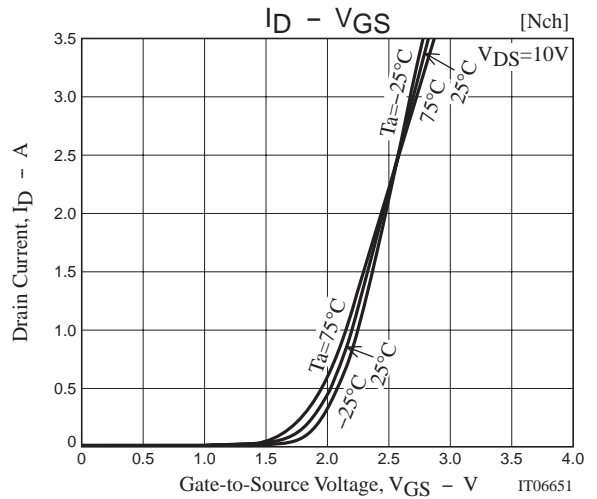
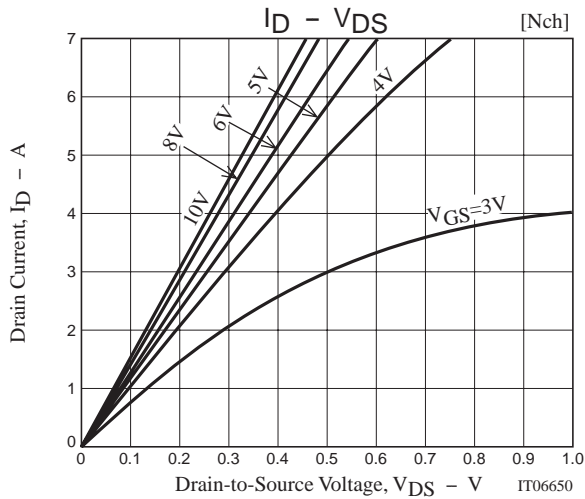
[N-channel]

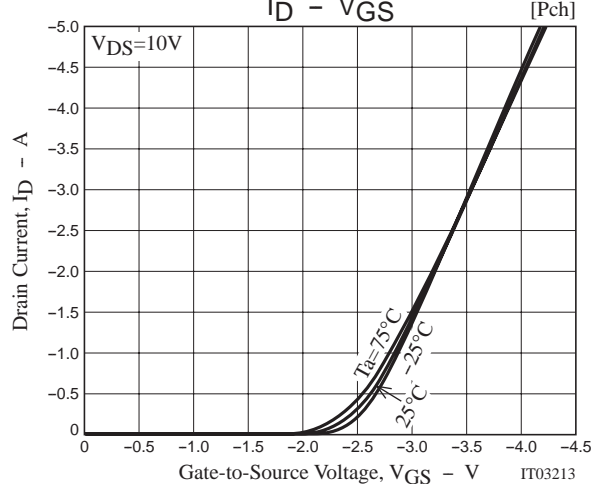
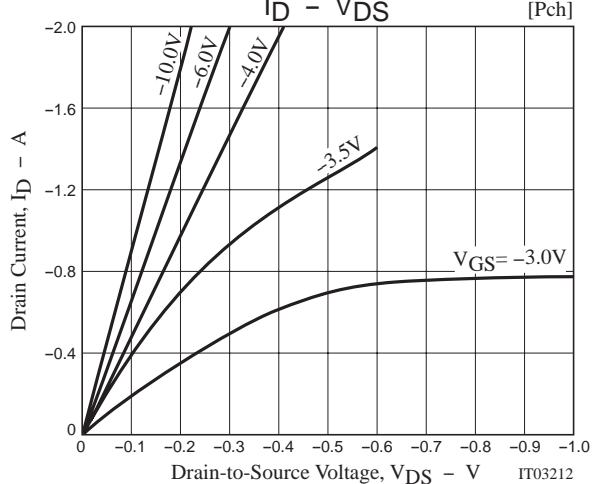
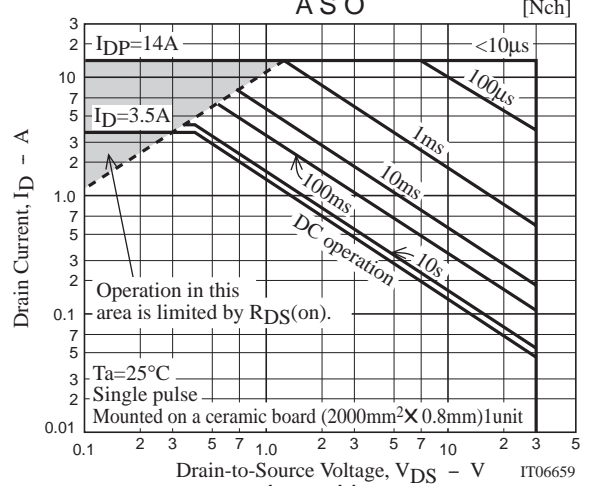
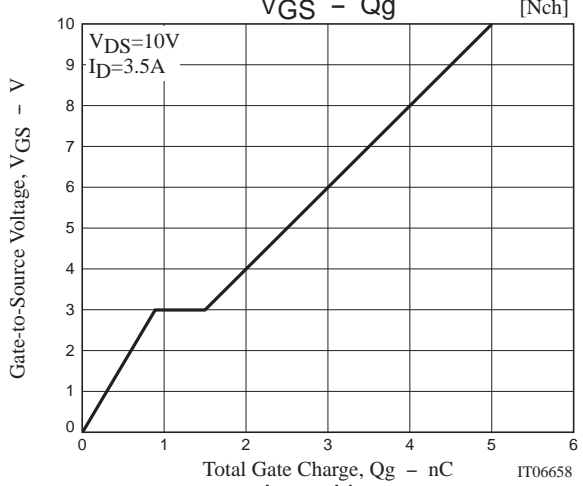
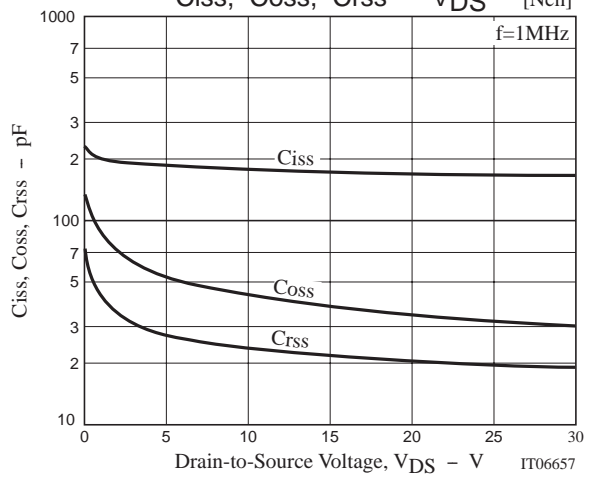
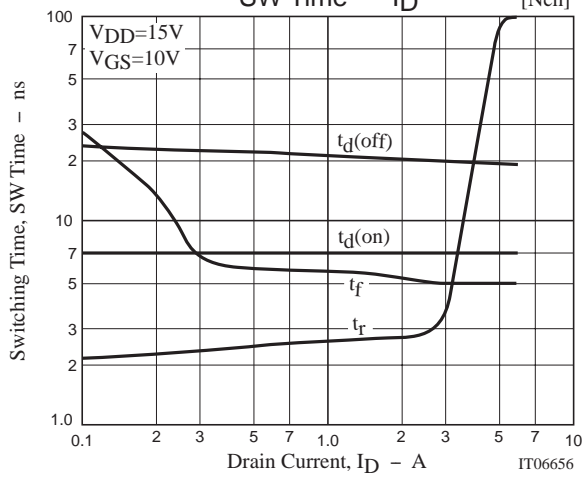
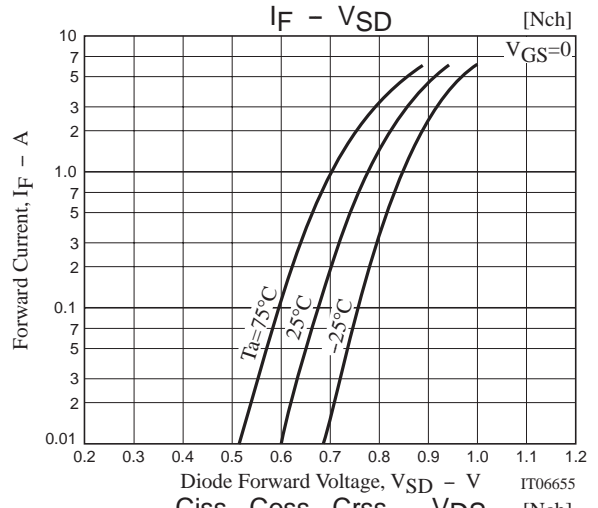
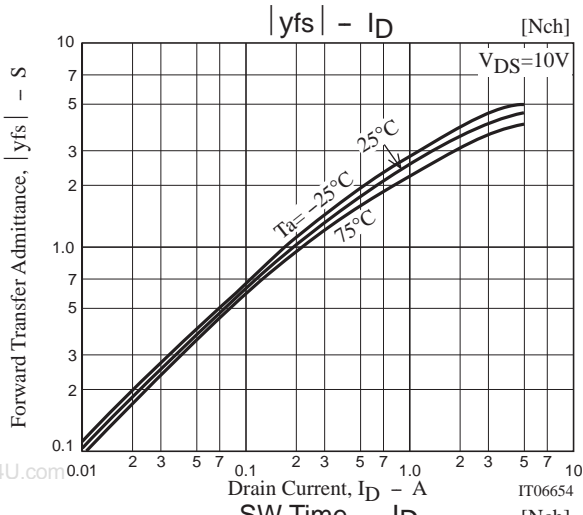


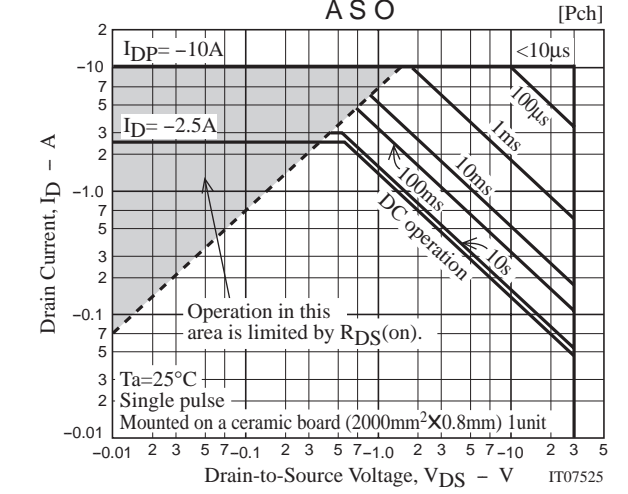
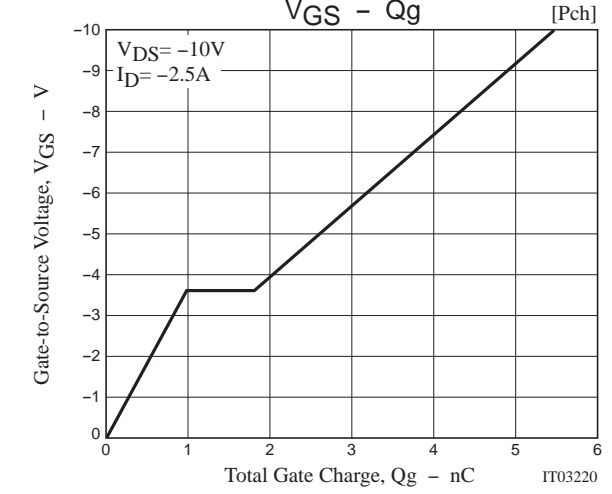
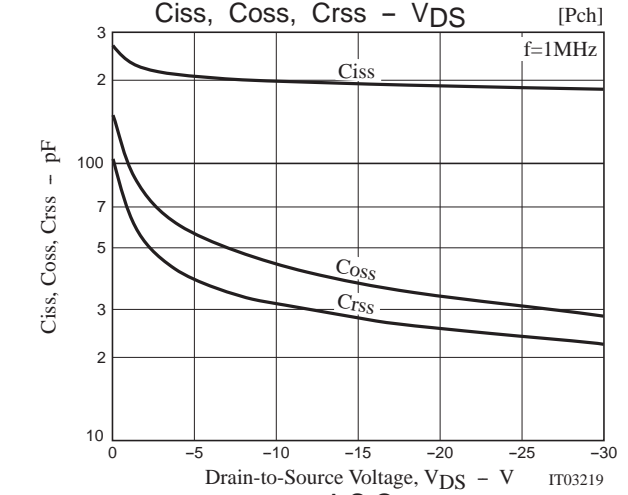
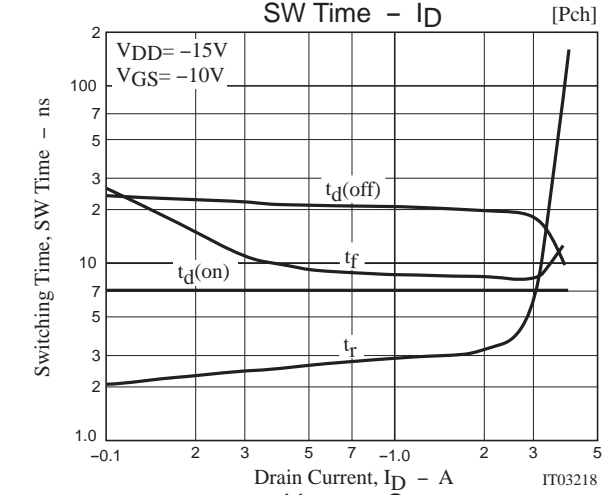
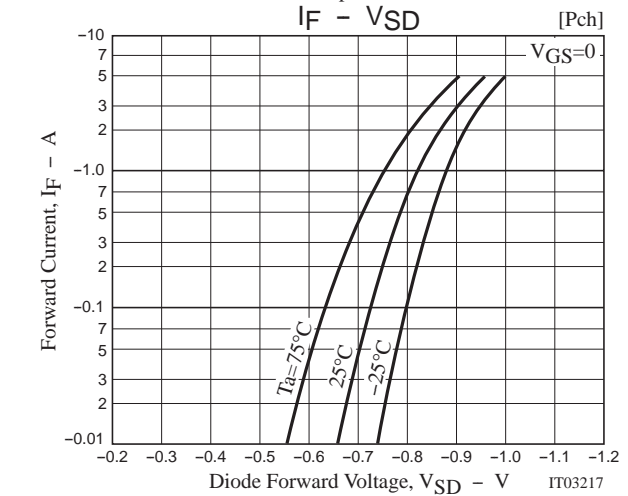
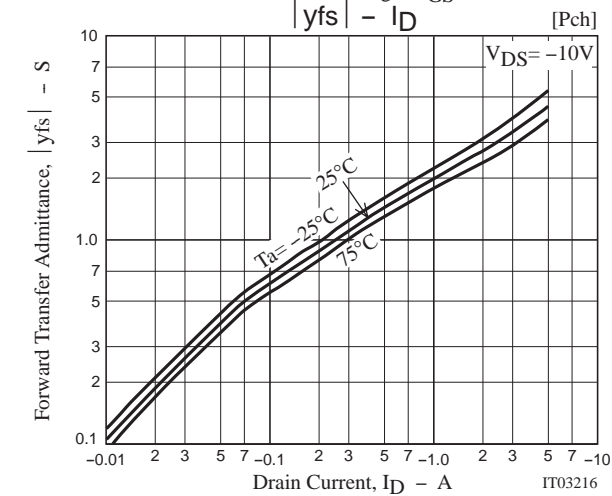
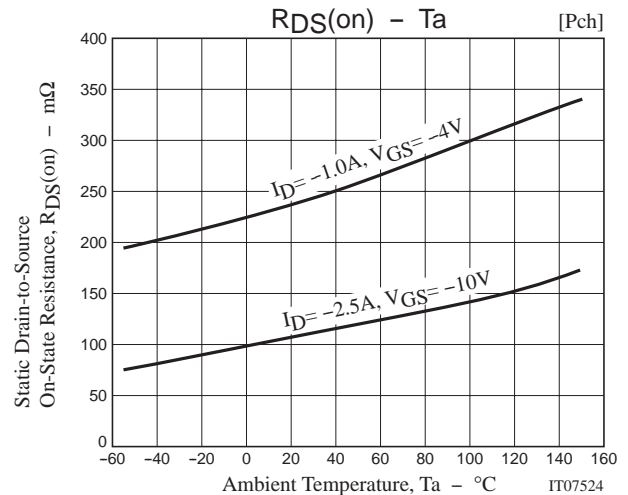
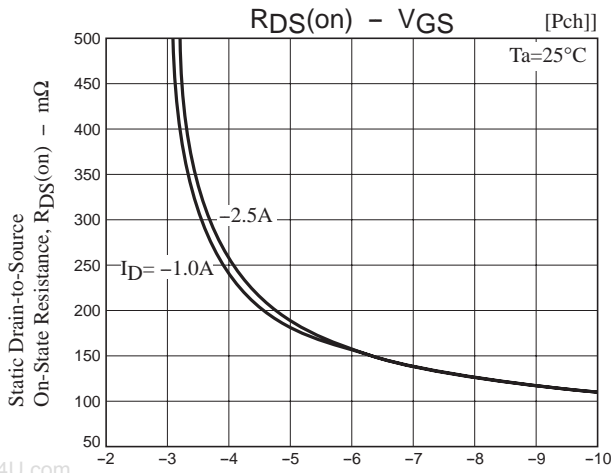
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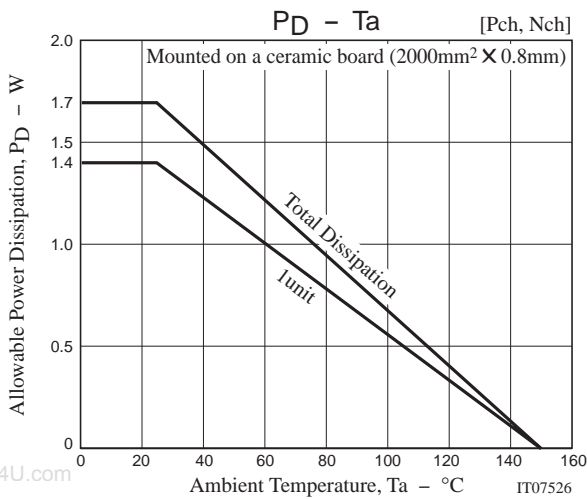


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Note on usage : Since the FW341 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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