



FW341 — N-Channel and P-Channel Silicon MOSFETs

General-Purpose Switching Device Applications

Features

- 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 _{DSS}		30	-30	V
Gate-to-Source Voltage	V _{GSS}		±20	±20	V
Drain Current (DC)	I _D		3.5	-2.5	A
Drain Current (PW≤10s)	I _D	duty cycle≤1%	4	-3	A
Drain Current (PW≤100ms)	I _D	duty cycle≤1%	6	-4.5	A
Drain Current (PW≤10μs)	I _{DP}	duty cycle≤1%	14	-10	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (2000mm²×0.8mm)1unit	1.4		W
Total Dissipation	P _T	Mounted on a ceramic board (2000mm²×0.8mm)	1.7		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	
[N-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0	30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	1.2		2.6	V
Forward Transfer Admittance	yfs	VDS=10V, ID=3.5A	3.0	5.3		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=3.5A, VGS=10V		64	84	mΩ
	RDS(on)2	ID=1.8A, VGS=4V		105	150	mΩ

Marking : W341

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FW341

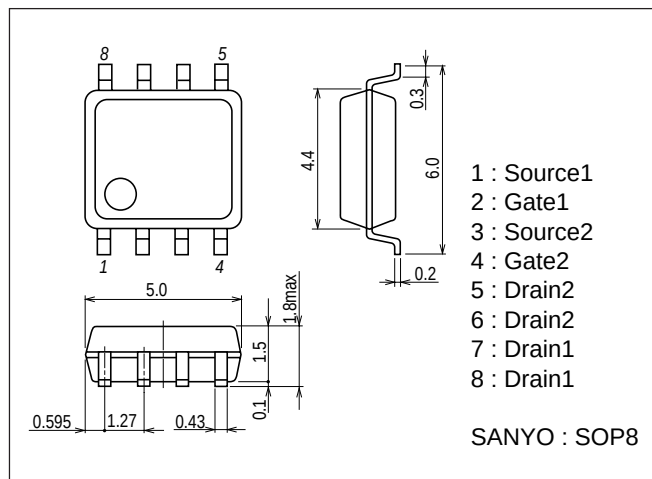
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		180		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		42		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		25		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		7		ns
Rise Time	t_r	See specified Test Circuit.		15		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		19		ns
Fall Time	t_f	See specified Test Circuit.		5		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=3.5A$		5.0		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=3.5A$		0.9		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=3.5A$		0.6		nC
Diode Forward Voltage	VSD	$I_S=3.5A, V_{GS}=0$		0.88	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1mA, V_{GS}=0$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-2.5A$	2	3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-2.5A, V_{GS}=-10V$		110	145	m Ω
	$R_{DS(on)2}$	$I_D=-1A, V_{GS}=-4V$		240	340	m Ω
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		200		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		47		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		32		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		7		ns
Rise Time	t_r	See specified Test Circuit.		3.5		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		20		ns
Fall Time	t_f	See specified Test Circuit.		8		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-2.5A$		5.5		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-2.5A$		0.98		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-2.5A$		0.82		nC
Diode Forward Voltage	VSD	$I_S=-2.5A, V_{GS}=0$		-0.87	-1.5	V

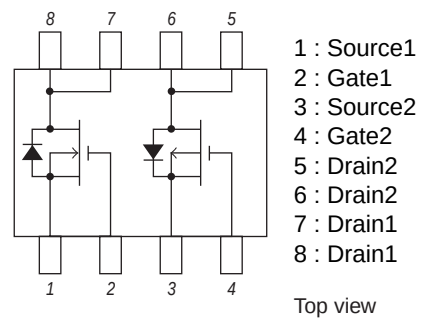
Package Dimensions

unit : mm

2129

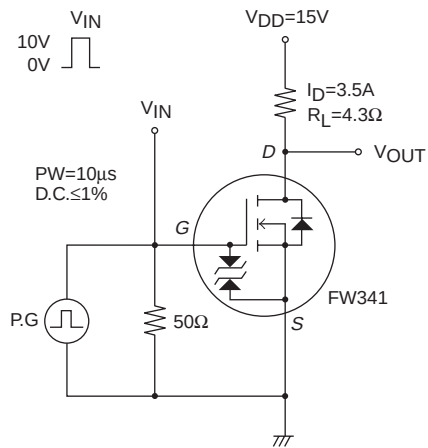


Electrical Connection

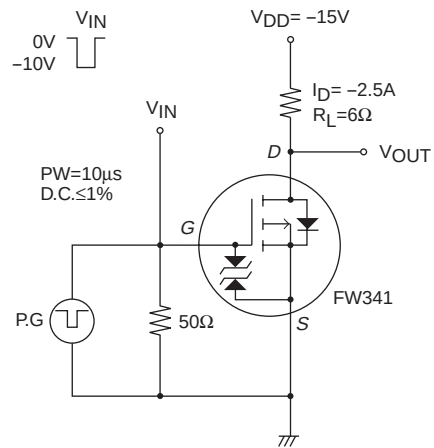
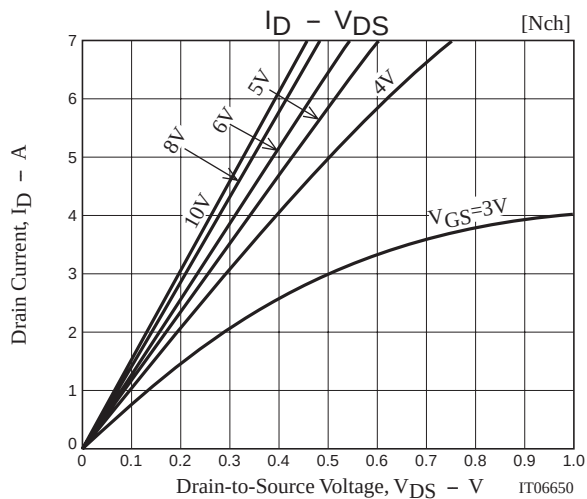
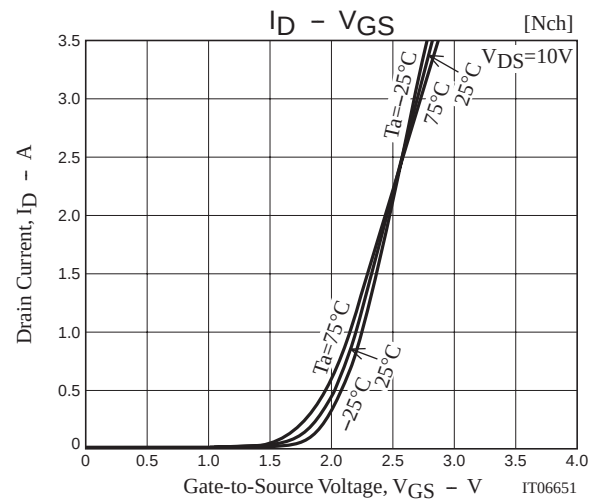
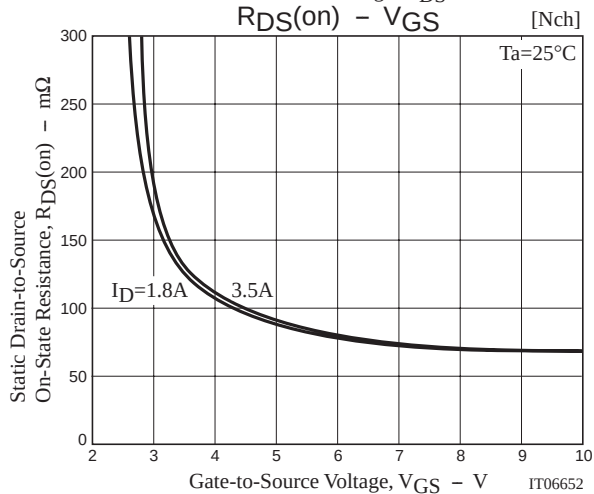
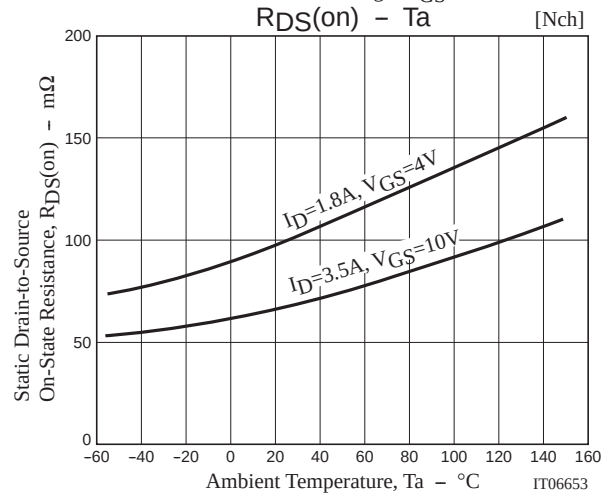


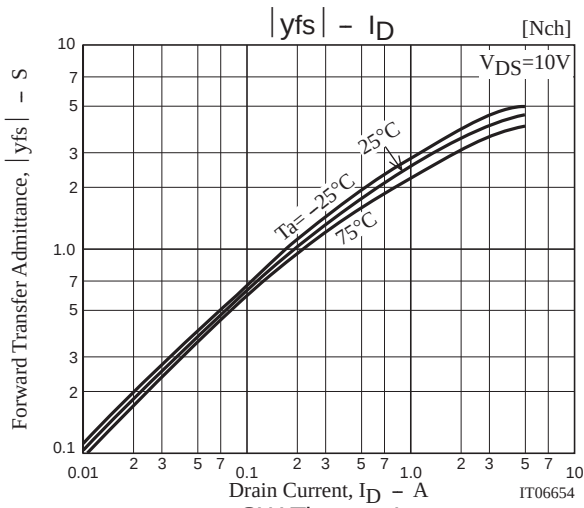
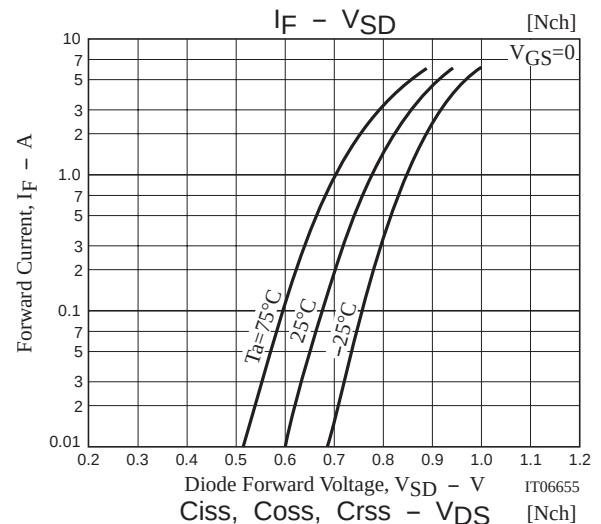
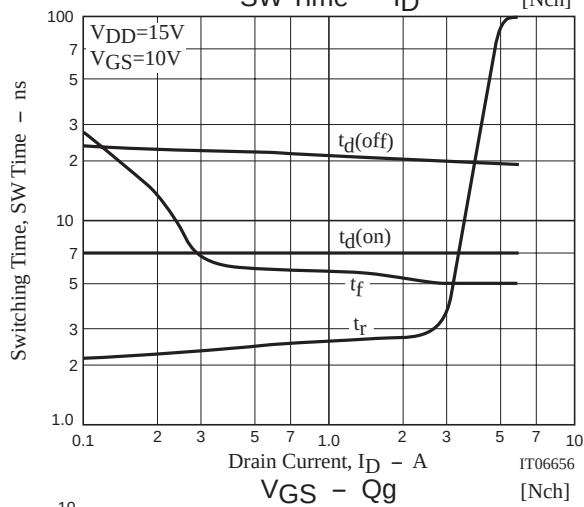
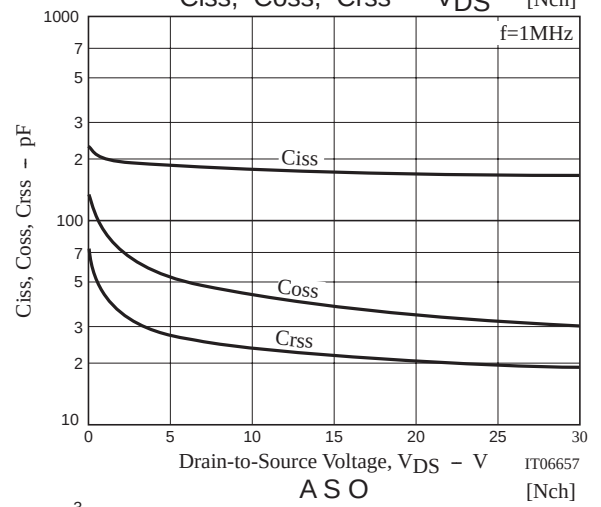
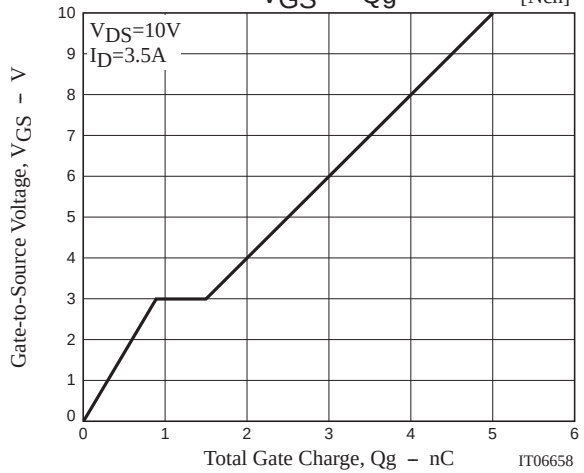
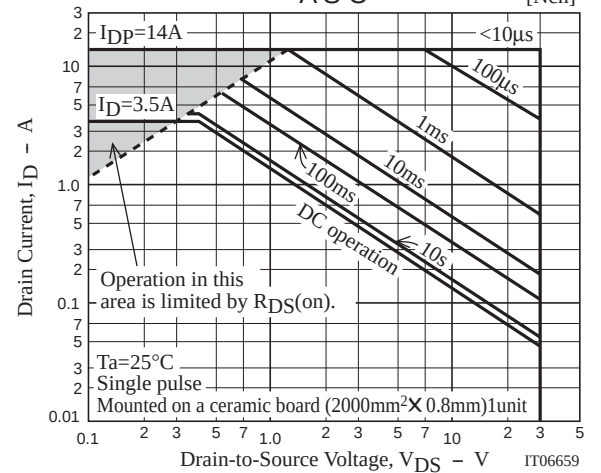
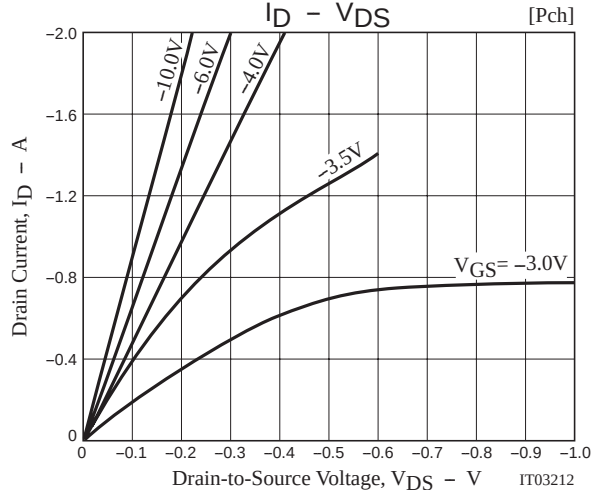
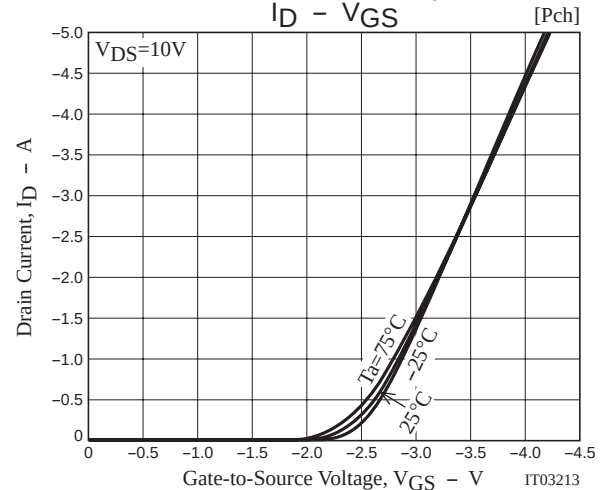
Switching Time Test Circuit

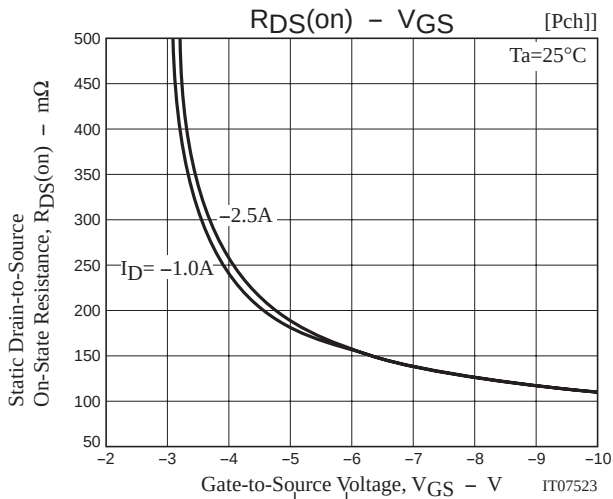
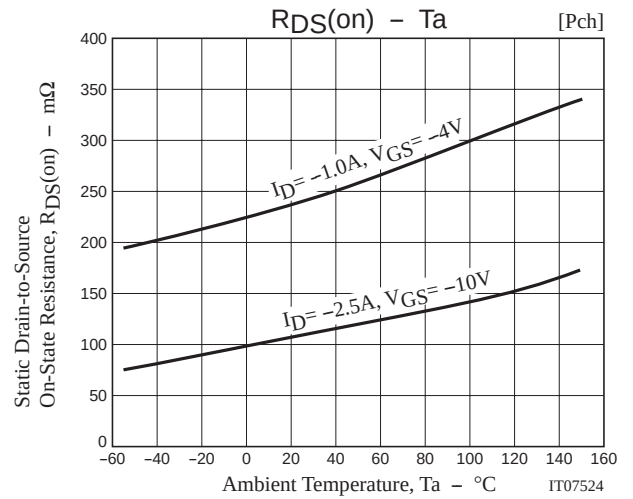
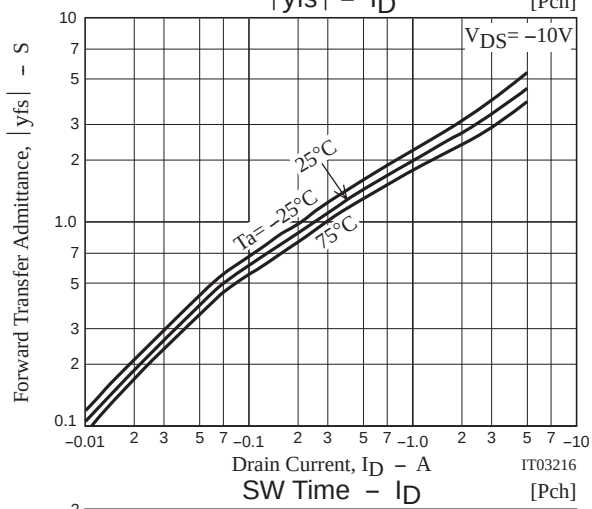
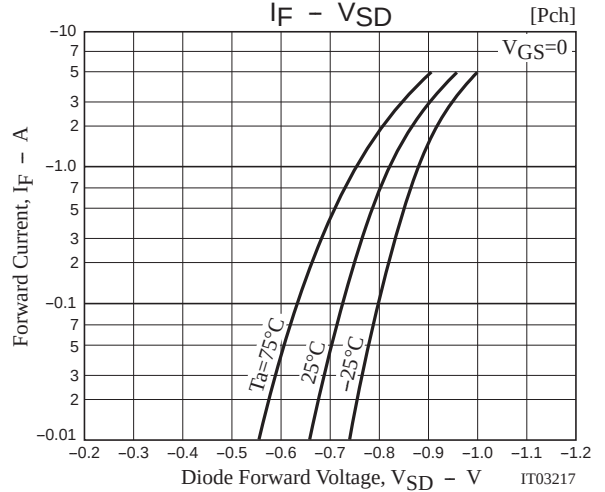
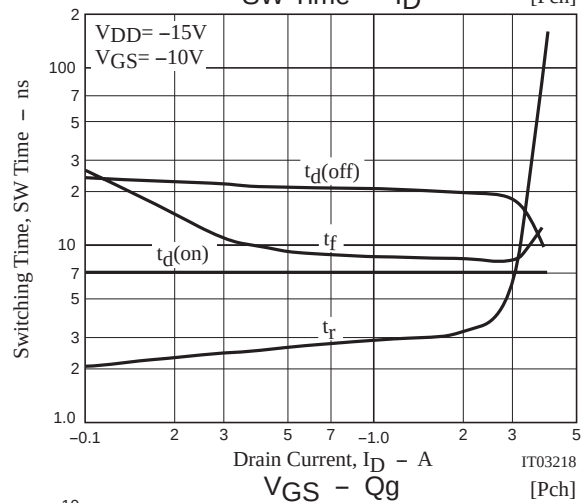
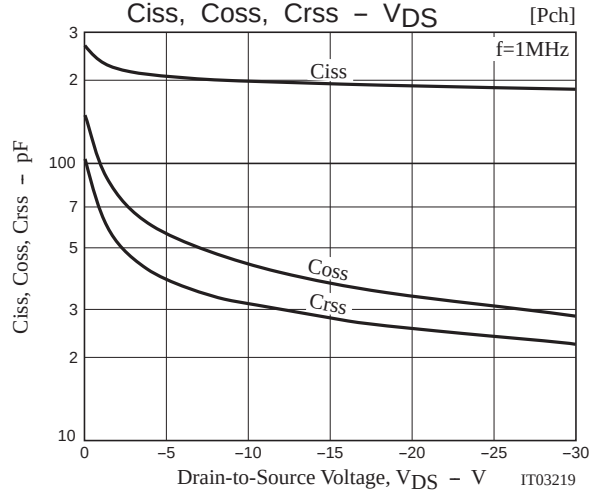
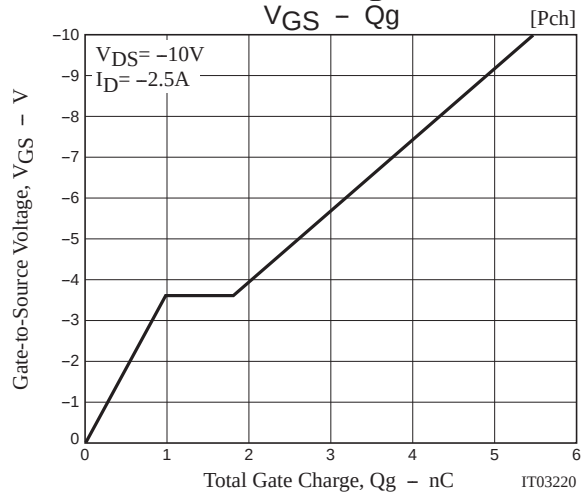
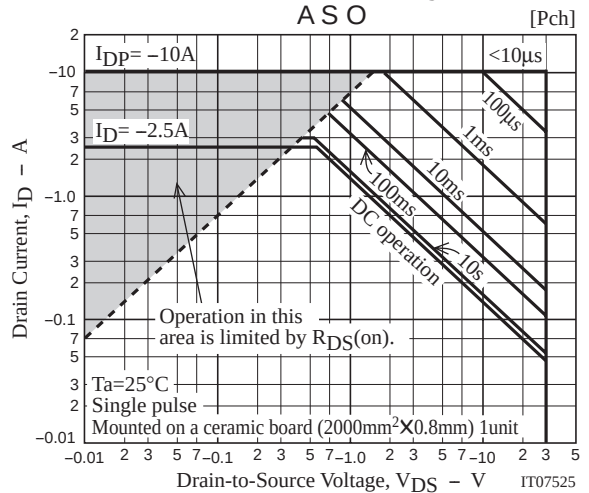
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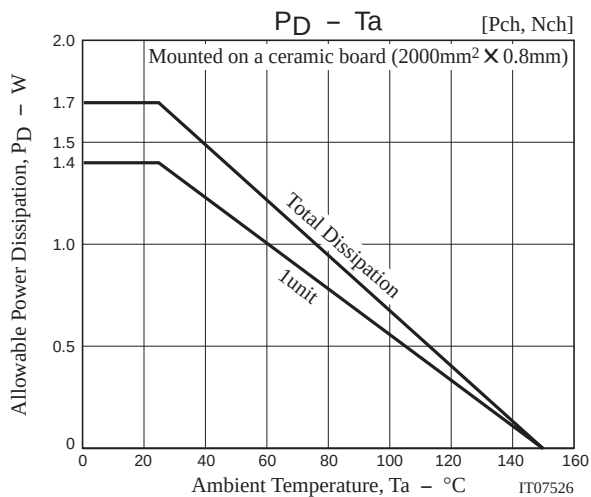


[P-channel]









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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