



## General-Purpose Switching Device Applications

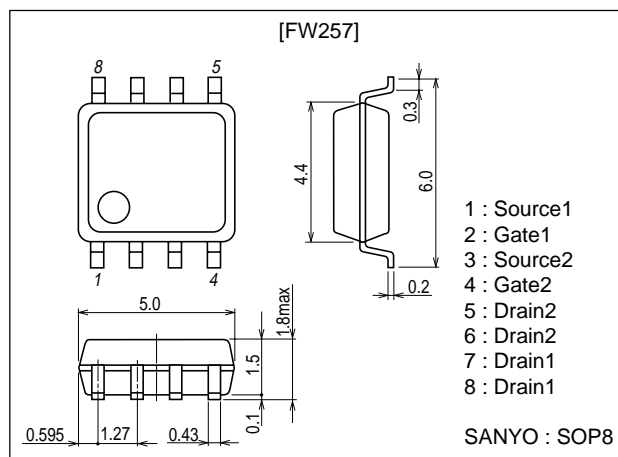
### Features

- Motor drive.
- 4V drive.

### Package Dimensions

unit : mm

2129



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		100	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		2	A
Drain Current (PW≤10s)	$I_D$	duty cycle≤1%	2.5	A
Drain Current (PW≤100ms)	$I_D$	duty cycle≤1%	5	A
Drain Current (PW≤10μs)	$I_{DP}$	duty cycle≤1%	8	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1200mm <sup>2</sup> ×0.8mm) 1unit (PW≤10s)	1.4	W
Total Dissipation	$P_T$	Mounted on a ceramic board (1200mm <sup>2</sup> ×0.8mm) (PW≤10s)	2.0	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	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	100			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0$			$\pm 10$	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=1A$	1.8	3		S

Marking : W257

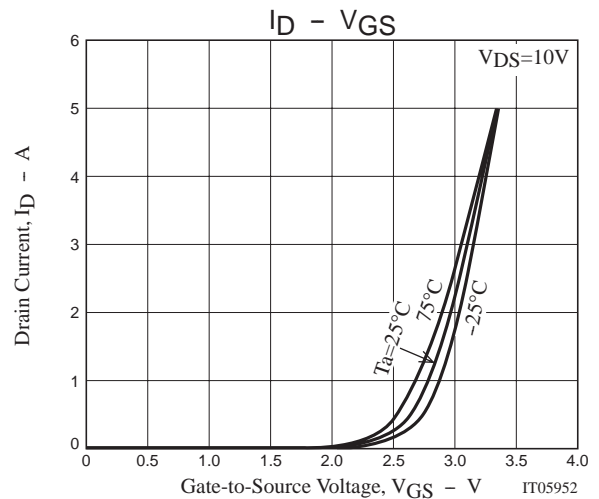
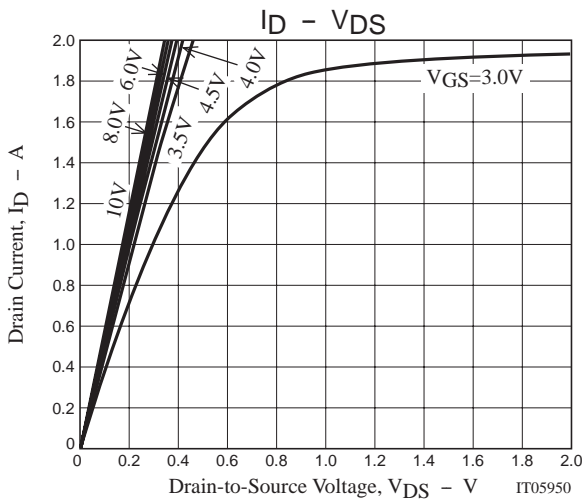
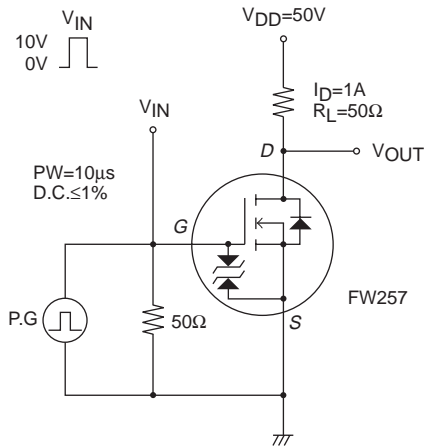
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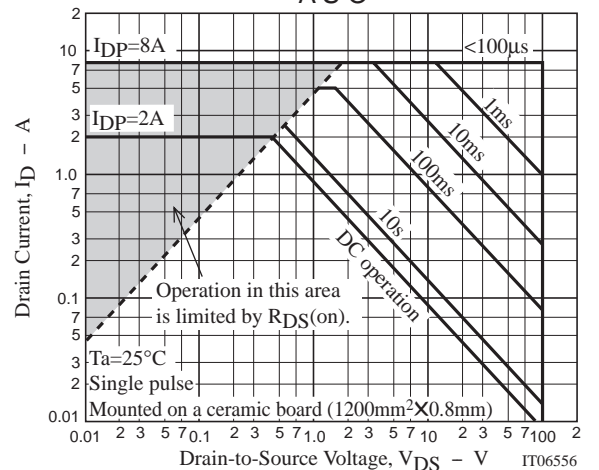
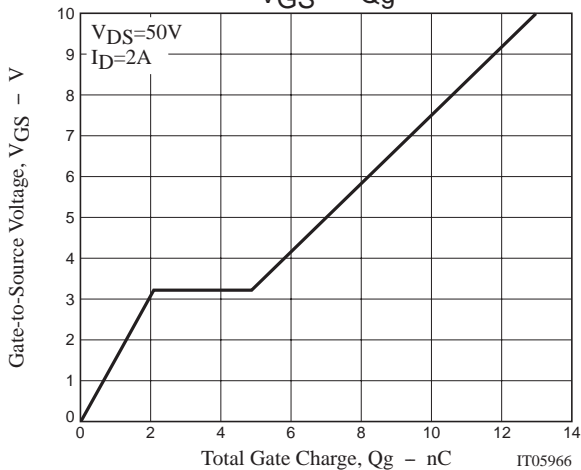
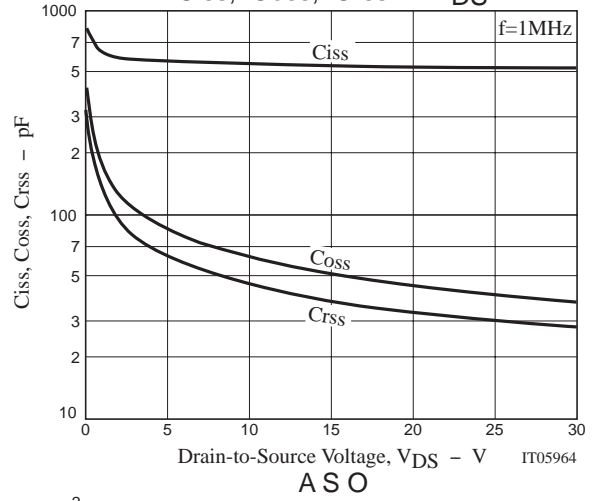
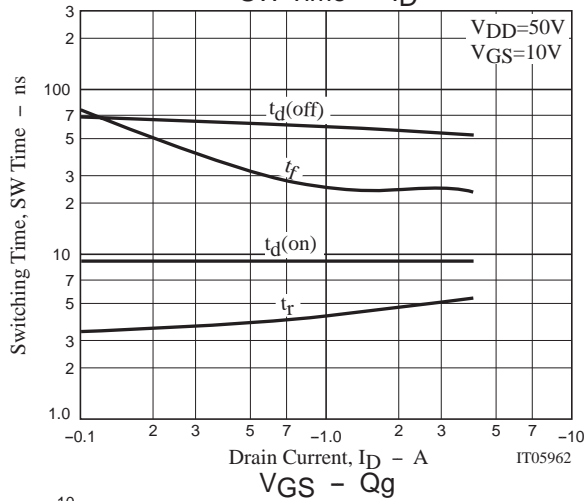
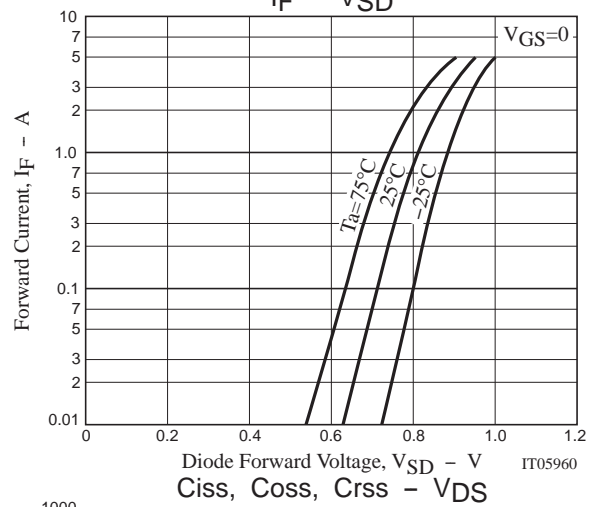
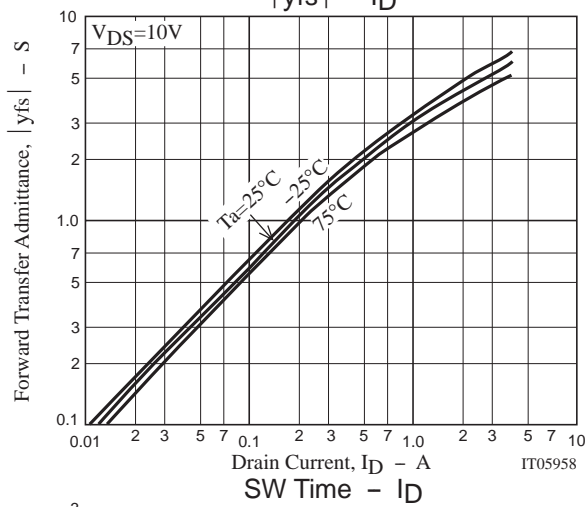
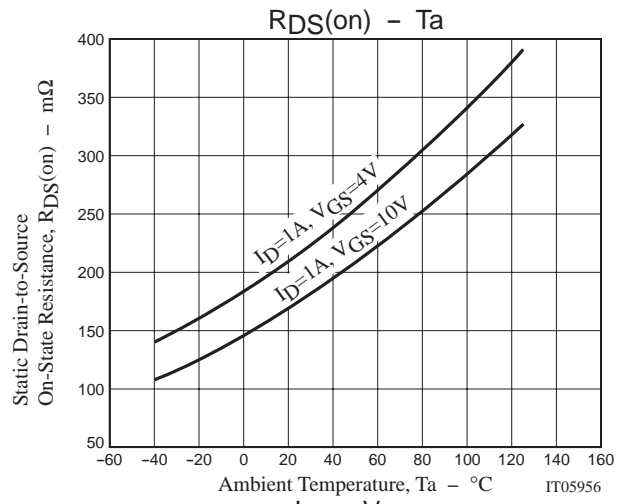
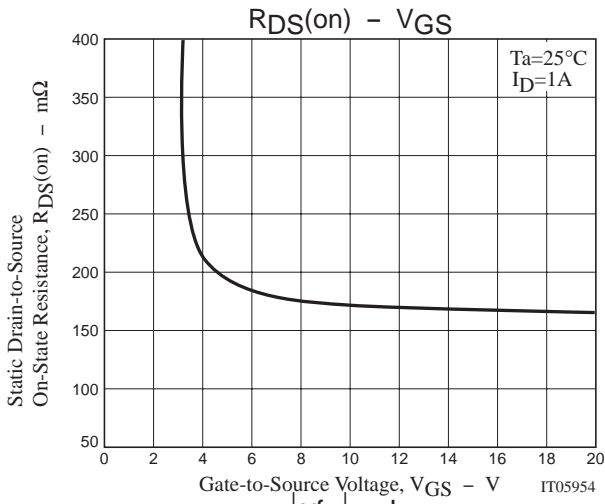
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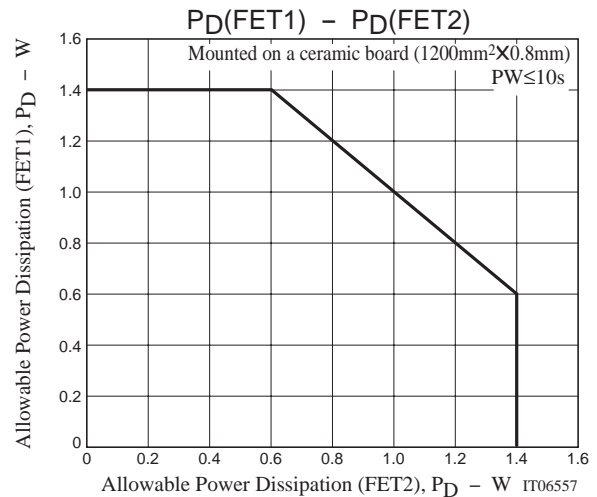
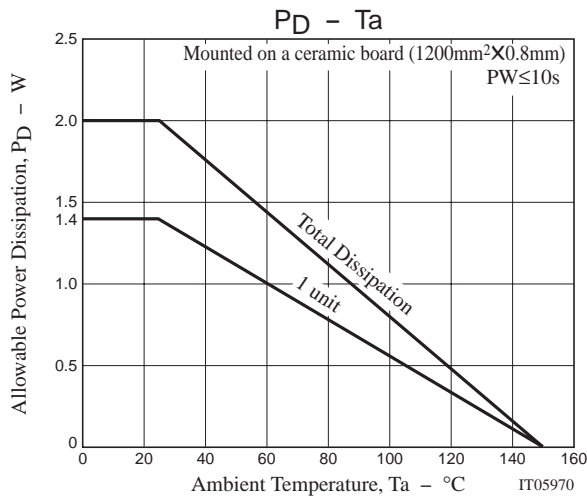
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1A, V_{GS}=10V$		175	220	$m\Omega$
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=4V$		220	310	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		530		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		45		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		35		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		9		ns
Rise Time	$t_r$	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		58		ns
Fall Time	$t_f$	See specified Test Circuit.		25		ns
Total Gate Charge	$Q_g$	$V_{DS}=50V, V_{GS}=10V, I_D=3A$		13		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=50V, V_{GS}=10V, I_D=3A$		2.1		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=50V, V_{GS}=10V, I_D=3A$		2.8		nC
Diode Forward Voltage	$V_{SD}$	$I_S=2A, V_{GS}=0$		0.82	1.2	V

### Switching Time Test Circuit







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